

Report to Congress
T-MSIS Substance Use Disorder (SUD) Data Book
Treatment of SUD in Medicaid, 2017

As Required by the
Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for
Patients and Communities Act (P.L. 115-271)

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U.S. Department of Health and Human Services
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EXECUTIVE SUMMARY

On October 24, 2018, the President signed into law the Substance Use–Disorder Prevention that Promotes Opioid Recovery and Treatment (SUPPORT) for Patients and Communities Act (P.L. 115-271) (SUPPORT Act) to address, among other issues, the pressing need for substance use disorder (SUD) treatment and prevention services, with a focus on opioid use. In 2017, approximately 19.7 million Americans ages 12 and older met the screening criteria for a SUD, but only about 4 million (or 20 percent) received treatment (Substance Abuse and Mental Health Services Administration [SAMHSA] 2018).¹ Section 1015(a)(1) of the SUPPORT Act directs the U.S. Department of Health and Human Services (HHS) to publish a report, the Transformed Medicaid Statistical Information System (T-MSIS) SUD Data Book (hereafter, SUD Data Book), no later than October 24, 2019. Section 1015(a)(3) of the SUPPORT Act requires HHS to issue an updated version of the SUD Data Book not later than January 1 of each calendar year through 2024 (see Appendix A for the full text of Section 1015). This first annual SUD Data Book reports the number of Medicaid beneficiaries with a SUD and the services they received during calendar year 2017, which is the most recent complete year of T-MSIS enrollment and claims data available when the analysis was conducted.

The information in the SUD Data Book is derived from a research-ready version of the T-MSIS data, the T-MSIS Analytic Files (TAF). The T-MSIS and the TAF data represent the new national data on Medicaid and the Children’s Health Insurance Program (CHIP), but the data were not fully established or robust in all states when the analytic work presented here was conducted. This SUD Data Book is based on the TAF version 2 (the most recent version when the analysis was conducted), in which the data from some states still had severe quality issues in March 2019, when this SUD Data Book was compiled. These states—Mississippi, Missouri, Montana, and Nebraska—were not included in the analysis.^{2,3} Other states included in the analysis had less severe but still problematic data issues. For example, in some states, the reporting of Medicaid enrollment data, eligibility for benefits, or age may be incomplete, inconsistent, or inaccurate. As a result, the estimates in this SUD Data Book of the number of Medicaid beneficiaries who were eligible for SUD services in 2017 may not be correct. Other data quality issues include an unexpectedly low or high volume of claims, claims that did not link to enrollment records, the use of state-specific procedure codes, and claims that are missing essential information regarding services rendered, among other issues. TAF version 2 differs from the first set of publicly available TAF Research Identifiable Files (RIFs), which will be

¹ These counts exclude individuals with a tobacco use disorder, which is included in this SUD Data Book.

² In Mississippi, Missouri and Montana, all Medicaid claims in one or more of the four claims files were missing, which made it impossible to correctly identify not only the beneficiaries who were treated for a SUD but also the services they received in these states. A fourth state, Nebraska, was excluded because the state did not have Other Services TAF claims from April 2017 to September 2017. These states will be included in future versions of the SUD Data Book if their data are of sufficient completeness and quality. More information on TAF data quality is available in Appendix B.

³ The SUPPORT Act also requires that the report include, to the extent available, data for the United States Virgin Islands, Guam, the Northern Mariana Islands, and American Samoa. At the time of the analysis, these territories were not submitting T-MSIS data and were therefore not included in this SUD data book.

available later in 2019, because of state and federal efforts during 2019 to improve the quality of the state T-MSIS data. These changes will be reflected in the TAF RIFs, but they are not reflected in the TAF version 2.

The results reported in this SUD Data Book is based on beneficiaries ages 12 and older⁴ who were enrolled in Medicaid for at least one day in 2017 and had full or comprehensive benefits. We excluded beneficiaries who were enrolled only in CHIP throughout 2017. Because the TAF data provide information on the services that Medicaid beneficiaries receive, we identified beneficiaries as having a SUD based on Medicaid claims and encounter records. It is not possible with these data to identify beneficiaries with a SUD who did not receive Medicaid-covered services for their condition, including, for dually eligible individuals, Medicare-covered services.

Of about 53.5 million full-benefit Medicaid beneficiaries ages 12 and older identified in the states included in this analysis, almost 4.1 million (nearly 8 percent) were treated for a SUD in 2017. More than 1 million of these beneficiaries were treated for an opioid use disorder. Among the five enrollment categories assessed, the highest proportion (38 percent) of beneficiaries who were treated for a SUD were enrolled in the VIII group. The lowest proportion treated (excluding the group for which enrollment category is unknown) were eligible for Medicaid on the basis of being pregnant (3 percent). Among states that did not expand Medicaid, the largest share of beneficiaries treated for a SUD were eligible for Medicaid on the basis of receiving Supplemental Security Income benefits because they are aged, blind, or disabled. (See 42 CFR 435.120.)

About three-quarters of the Medicaid beneficiaries treated for a SUD in 2017 received at least one service in an outpatient setting, and almost 44 percent received at least one service in an inpatient setting during the year. Almost half of the Medicaid beneficiaries treated for a SUD (47 percent) in 2017 received emergency services, which was the most common SUD service provided during the year. About a quarter of the beneficiaries treated for a SUD who received care in an inpatient or residential setting in 2017 also received at least one outpatient or home- or community-based SUD service within 30 days of being discharged.

⁴ The SUD Data Book excludes Medicaid beneficiaries age 11 and younger, and newborns with fetal alcohol syndrome and neonatal abstinence syndrome, neither of which, by definition, would qualify as a substance use disorder per the *Diagnostic Statistical Manual of Mental Disorders-V*.

I. INTRODUCTION

On October 24, 2018, the president signed into law the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment (SUPPORT) for Patients and Communities Act (P.L. 115-271) to address, among other issues, the pressing need for substance use disorder (SUD) treatment and prevention services, with a focus on opioid use.

Section 1015(a) of the SUPPORT for Patients and Communities Act directs the U.S. Department of Health and Human Services (HHS) to publish the Transformed Medicaid Statistical Information System (T-MSIS) SUD Data Book,⁵ a publicly available compendium of the number of Medicaid beneficiaries with a SUD and the services they received. This document is the first annual SUD Data Book, and it includes, to the extent possible, the required content as set forth in Section 1015(a)(2):

(A) The number and percentage of individuals enrolled in the State Medicaid plan or waiver of such plan in each of the major enrollment categories (as defined in a public letter from the Medicaid and CHIP Payment and Access Commission to the Secretary) who have been diagnosed with a substance use disorder and whether such individuals are enrolled under the State Medicaid plan or a waiver of such plan, including the specific waiver authority under which they are enrolled, to the extent available.⁶

- Of the approximately 53.5 million full-benefit Medicaid beneficiaries ages 12 and older in the states included in this analysis, almost 4.1 million, or nearly 8 percent, were treated for a SUD in 2017.
- Adult beneficiaries in the VIII Group accounted for the largest share of beneficiaries treated for a SUD (38 percent) in 2017, followed by those in the ABD enrollment category (32 percent) and then by the adult group (22 percent). Of the states that did not expand Medicaid, the largest share of beneficiaries treated for a SUD were in the ABD enrollment category. For full results, see Section A.

(B) A list of the substance use disorder treatment services by each major type of service, such as counseling, medication-assisted treatment, peer support, residential treatment, and inpatient care, for which beneficiaries in each State received at least 1 service under the State Medicaid plan or a waiver of such plan.

- Most states have at least one Medicaid beneficiary who received the following services: case management, community support, consultation, counseling, detoxification, emergency services, inpatient care, intervention services, medication-assisted treatment, medication

⁵ Appendix A includes a copy of the sections of the law that correspond to the SUD Data Book.

⁶ In a letter to the HHS secretary, dated March 21, 2019, MACPAC defined several enrollment categories for stratifying the data, including some special populations that cannot currently be supported by the data because the number of beneficiaries in the enrollment categories is too small or there are data quality issues. The special populations not included in this first SUD Data Book are children who qualify for Medicaid on the basis of child welfare assistance, dual (Medicare and Medicaid) eligibles younger than 65, and older adolescents. In addition, the quality of the 2017 TAF data are not good enough to support the reporting of beneficiaries by state Medicaid plan or waiver authority. See Appendix B for TAF data quality issues, by state.

management, observation care, partial hospitalization, peer supports, physician services, pharmacotherapy, screening and assessment, or services from a treatment program. For full results, see Section B.

(C) The number and percentage of individuals with a substance use disorder diagnosis enrolled in the State Medicaid plan or waiver of such plan who received substance use disorder treatment services under such plan or waiver by each major type of service under subparagraph (B) within each major setting type, such as outpatient, inpatient, residential, and other home-based and community-based settings.⁷

- Acute care services were the most common SUD treatment services received by Medicaid beneficiaries. Nearly half of these beneficiaries (47 percent) received emergency services (the most common SUD treatment service), followed by inpatient care (41 percent).
- Approximately three-quarters (75 percent) of the Medicaid beneficiaries treated for a SUD received at least one service in an outpatient setting in 2017, and 43 percent received at least one service in an inpatient setting. A much smaller percentage of the beneficiaries treated for a SUD received services in a residential setting (4 percent) or in a home- or community-based setting (less than 2 percent). For the full results, see Section C.

(D) The number of services provided under the State Medicaid plan or waiver of such plan per individual with a substance use disorder diagnosis enrolled in such plan or waiver for each major type of service under subparagraph (B).

- Beneficiaries who received inpatient care for a SUD spent an average of 9 days in the inpatient facility over the course of the year. Beneficiaries who received partial hospitalization services for a SUD received an average of 17 days of these services, and beneficiaries who received observation care for a SUD received this type of care for an average of 3 days during 2017. Beneficiaries who received MAT services for a SUD received these services for an average of 129 days, or more than four months. Beneficiaries treated for a SUD and who received counseling services attended an average of almost 10 sessions in 2017. For the full results, see Section D.

(E) The number and percentage of individuals enrolled in the State Medicaid plan or waiver, by major enrollment category, who received substance use disorder treatment through a medicaid managed care entity, a fee-for-service payment model, or an alternative payment model, to the extent available.⁸

- Approximately 71 percent of the Medicaid beneficiaries treated for a SUD received at least one SUD service through a managed care organization in 2017, and about 46 percent of the

⁷ We presented tabulations by service setting and type separately to avoid data quality issues related to examining cross-tabulations of multiple variables simultaneously.

⁸ We did not present results for alternative payment models because it was not possible to identify alternative payment models in the TAF data.

Medicaid beneficiaries treated for a SUD received at least one service through a state's fee-for-service (FFS) system in 2017. For full results, see Section E.

(F) The number and percentage of individuals with a substance use disorder who receive substance use disorder treatment services in an outpatient or home-based and community-based setting after receiving treatment in an inpatient or residential setting, and the number of services received by such individuals in the outpatient or home-based and community-based setting.⁹

- Among the Medicaid beneficiaries treated for a SUD and who received SUD services in an inpatient or a residential setting during 2017, about 24 percent received at least one service in an outpatient or home- or community-based setting within 30 days of discharge, and 16 percent received two services or more in these settings. For full results, see Section F.

⁹ Although the statute calls for a count of the number of outpatient or home- or community-based services after beneficiaries have received services in an inpatient or a residential setting, this quantity could not be calculated consistently across beneficiaries because of different patterns of care and because of the time at which the services in the inpatient or residential setting were received. We therefore presented the number and percentage of Medicaid beneficiaries who received at least one, or two or more outpatient or home- or community-based services after receiving services in an inpatient or a residential setting during 2017.

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II. BACKGROUND

Substance use disorders are characterized by a problematic pattern of alcohol and/or drug use leading to clinically significant impairment or distress as manifested by more than one symptom such as difficulty controlling use, risk of self-harm, withdrawal, social or interpersonal problems, or failure to meet major responsibilities at work, school, or home (American Psychiatric Association 2013). In 2017, approximately 19.7 million Americans ages 12 and older met the screening criteria for a SUD, but only about 4 million (or 20 percent) received treatment (SAMHSA 2018).¹⁰ The mortality associated with SUD has become a major public health concern as the number of deaths nationwide from a drug overdose almost doubled from 2007 to 2017, from 36,010 to 70,237 (Centers for Disease Control and Prevention 2017).

The SUPPORT Act supplements efforts already underway to provide services to Medicaid beneficiaries with a SUD. In 2018, 21 states were implementing section 1115 Medicaid demonstration projects to help improve access to, and the quality of, SUD treatment along the continuum of care (Centers for Medicare & Medicaid Services [CMS] 2019).¹¹ Through these demonstrations, CMS authorizes states under section 1115(a)(2) of the Social Security Act to receive federal financial participation (FFP) in state expenditures for which FFP otherwise is not available, specifically for services subject to the statutory Institution for Mental Diseases (IMD)¹² exclusion. The IMD exclusion ordinarily prohibits FFP to be provided in expenditures for residential treatment in IMDs for individuals ages 21 to 64.¹³ In addition to waiving the IMD exclusion through 1115 demonstrations, according to the Medicaid Managed Care Final rule (42 CFR Part 438.6), states may use federal Medicaid funds for capitation payments to managed care plans that cover IMD services in lieu of other services covered under the state plan for up to 15 days per month. Additionally, many states are focusing heavily on integrating physical and behavioral health care as a way to improve care for beneficiaries with a SUD, and dozens of states are taking innovative approaches to improving service delivery and reforming payment models through the following: accountable care organizations (ACOs), certified community behavioral health clinics, delivery system reform incentive payment programs, Health Homes,

¹⁰ These counts exclude individuals with tobacco use disorder, a disorder included in this data book.

¹¹ The 21 states are Alaska, California, Florida, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, North Carolina, Pennsylvania, Rhode Island, Vermont, Wisconsin, Washington, and West Virginia.

¹² An IMD is a hospital, nursing facility, or other institution with more than 16 beds that primarily diagnoses, treats, or otherwise cares for people with mental diseases, including medical attention, nursing care, and related services. (Section 1905(i) of the Social Security Act [the Act]). Medicaid coverage of services provided in IMDs is governed by specific rules for federal funding. The facilities cannot receive federal funding for services provided to anyone ages 21–64. (Clause B following section 1905(a)(29) of the Act). States have the option to cover IMD services for people ages 21 and younger (section 1905(a)(16) of the Act, 42 CFR 440.160), and ages 65 and older (42 CFR 440.140). According to the President’s Commission on Combating Drug Addiction and the Opioid Crisis (2017), removing the federal IMD exclusion could eliminate critical barriers to SUD treatment and expand treatment capacity.

¹³ Section 5052 of the SUPPORT for Patients and Communities Act creates a limited exception to the IMD exclusion for individuals ages 21 to 64 with at least one SUD. Section 5052 permits states to provide medical assistance for up to 30 days annually per qualifying beneficiary beginning on October 1, 2019, and ending on September 30, 2023. Starting on October 1, 2019, states can amend their Medicaid state plans to include coverage provided to Medicaid beneficiaries residing in IMD facilities for up to 30 days annually.

and patient-centered medical homes, among others. CMS has also been working with states through the Medicaid Innovation Accelerator Program, an initiative designed to address health care costs and quality in Medicaid for certain target populations, such as beneficiaries with SUD.

III. DATA

Each state reports data on Medicaid and CHIP enrollment, service utilization, payment, providers, and other information on a monthly basis through T-MSIS. The size, complexity, and frequency of updates to T-MSIS data make the files very challenging to use for analytic purposes. As a result, CMS created a series of data sets optimized for analytics and basic research known as the T-MSIS Analytic Files, or TAF. The information in this SUD Data Book is derived from the five research-ready files in the 2017 TAF version 2: Annual Demographic and Eligibility (DE), Inpatient (IP), Long-Term Care (LT), Other Services (OT), and Pharmacy (RX). Version 2 differs from the first set of publicly available TAF RIFs, which will be available later in 2019, because of state and federal efforts during the first half of calendar year 2019 to improve the quality of the state T-MSIS data. These changes will be reflected in the TAF RIFs, but they are not reflected in the TAF version 2.

The T-MSIS system and the research optimized version of the data (the TAF) represent a new national data set for Medicaid and CHIP. Because the T-MSIS reporting system is new, the data from this system were not fully established or robust in all states when the analytic work presented here was conducted. These data are continually updated as data quality issues emerge and are communicated back to states who respond by making corrections and improvements in their reporting and in refining their files. States first submitted data from 2015 to 2018, and some states still had severe data quality issues in March 2019, when this SUD Data Book was compiled. In three states (Mississippi, Missouri, and Montana), all Medicaid claims in one or more of the four claims files were missing, which made it impossible to correctly identify not only the beneficiaries who were treated for a SUD but also the services they received in these states. A fourth state, Nebraska, was excluded because it did not have OT TAF claims from April 2017 to September 2017. These four states are not included in the analyses presented in this SUD Data Book. In addition to these severe data quality issues, there were numerous, less-severe issues that did not preclude other states from being included in the analysis but that might affect the validity of the results. These issues include the following, and they are organized by state in Appendix Table B.1:

- In some states, the reporting of Medicaid enrollment data, eligibility for comprehensive benefits, or age may be incomplete, inconsistent, or inaccurate. As a result, estimates of the number of Medicaid beneficiaries who are eligible for SUD services may not be correct.
- Some states had an unexpectedly low or high volume of claims in 2017 compared with other states. A low volume of claims may result in an underestimate of the number of beneficiaries who were treated for a SUD and the services they received. The implications of a high volume of claims are less clear due to the various methods by which this may occur, including the submission of duplicate claims, the placement of claims in the incorrect file, or claim lines submitting as claim headers, among other possibilities.
- Some states had a substantial proportion of claims that did not link to enrollment records in 2017. If these claims were for services that were, in fact, covered by Medicaid, then the number of beneficiaries who were treated for a SUD and the services they received could be underestimated.

- Some states used their own codes in the procedure code field, which makes it impossible to identify all SUD services that Medicaid beneficiaries received.¹⁴
- For a claim to be included in the TAF, it must have an indicator in T-MSIS specifying that it is the final version of the claim. Some claims in T-MSIS are missing this indicator, and as a result, they are not included in the TAF. The TAF-based findings may therefore underestimate the number of beneficiaries who were treated for a SUD and the services they received if a large number of claims in a state lack a final version.
- Claims that are missing information can result in an underestimate of the number of Medicaid beneficiaries who were treated for a SUD and the services they received, particularly when the information is missing for key variables such as diagnosis code, procedure code, revenue code, type of bill, place of service, and dates of service. Supplemental briefs on data quality that present a detailed analysis of “missingness” and other issues accompany this SUD Data Book.

CMS is currently working with states to improve the quality of the underlying T-MSIS data. States have access to data quality tools that identify, track and prioritize potential T-MSIS data quality issues. CMS is also providing one-on-one technical assistance to each state to improve states’ T-MSIS data submissions. Through this ongoing technical assistance, states and CMS are working to resolve priority data quality issues. CMS also releases guidance documents to clarify reporting requirements where states have identified challenges reporting information. We expect future annual SUD Data Books to include more robust results as the accuracy and completeness of the states’ T-MSIS submissions improve over time.

¹⁴ We investigated the extent of this issue in the OT file in claims that include SUD diagnoses, and found that the proportion of claims with a state-specific procedure code ranged from virtually zero in many states to 19 percent in California (across all states, less than 2 percent of claims appeared to include state-specific procedure codes). We worked with California to identify its procedure codes, and we were able to explain 75 percent of the affected claims. We used two California-specific codes to identify additional SUD services in the state.

IV. METHODS

The results reported in this SUD Data Book are based on beneficiaries ages 12 and older who were enrolled in Medicaid for at least one day in 2017 and received full or comprehensive benefits. The SUPPORT Act focuses on “individuals enrolled under the State Medicaid plan or waiver of such plan,” so the SUD Data Book excludes Medicaid-Expansion CHIP and separate CHIP beneficiaries who were enrolled in these programs only throughout 2017. In general, we identified a beneficiary as having a SUD if he or she had at least one qualifying inpatient claim for a SUD, two outpatient or long-term care claims for SUD treatment on different dates, or one pharmacy claim for medication-assisted treatment (MAT) for a SUD (see Appendix B for details).¹⁵ The substances included are alcohol, caffeine, cannabis, hallucinogens, hypnotics and anxiolytics, inhalants, opioids, sedatives, stimulants, tobacco, and other unspecified or unknown substances. These categories are consistent with the 10 classes of drugs encompassed by SUD in version 5 of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association 2013). Once we identified beneficiaries who received treatment for a SUD, we grouped them into five eligibility categories. We then examined the setting in which they received SUD services, the types and volume of services they received, and whether the services were delivered through a managed care entity or a state’s fee-for-service (FFS) system.

This SUD Data Book does not identify all Medicaid beneficiaries who had a SUD in 2017 because the algorithm used to identify beneficiaries treated for a SUD is based on claims data. It can therefore identify only the beneficiaries who were treated for a SUD as part of a Medicaid- or CHIP-funded service.¹⁶ Beneficiaries with a SUD often do not seek treatment because of factors such as the stigma associated with having a SUD and the difficulty of locating a treatment provider (Medicaid and CHIP Payment and Access Commission [MACPAC] 2017). The research literature indicates that only one in five individuals with a SUD received treatment (SAMHSA 2018). Because this SUD Data Book reflects information provided by states for Medicaid beneficiaries who were treated for a SUD, our methods are therefore likely to underestimate the overall number of Medicaid beneficiaries with a SUD.

¹⁵ This approach uses SUD Tool 1, Identifying Beneficiaries with a SUD (identification tool), developed for CMS’s Innovation Accelerator Program.

¹⁶ Beneficiaries who were enrolled in Medicaid for at least one day in 2017 could have had a CHIP-funded SUD service during the year.

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V. KEY FINDINGS

- Of the approximately 53.5 million Medicaid beneficiaries with full or comprehensive benefits ages 12 and older who could be identified in the states included in this analysis,¹⁷ almost 4.1 million, or nearly 8 percent, were treated for a SUD in 2017 (see Appendix C for a comparison between these estimates and publicly-available estimates for Medicare beneficiaries and commercially insured individuals).
- More than 1 million of these beneficiaries were treated for an opioid use disorder (OUD). OUD-specific tables are in Appendix D.
- Among the five eligibility categories assessed,¹⁸ the highest proportion (38 percent) of beneficiaries who were treated for a SUD were covered by Medicaid through the expansion of benefits to adults under the Patient Protection and Affordable Care Act (P.L. 111-148 [ACA]), and the lowest proportion treated (excluding the group for which the enrollment category is unknown) were eligible for Medicaid on the basis of being pregnant (3 percent). Among states that did not expand Medicaid through the ACA, the largest share of beneficiaries treated for a SUD were eligible for Medicaid on the basis of receipt of Supplemental Security Income due to being aged, blind, or disabled (ABD).
- Approximately three-quarters of the Medicaid beneficiaries treated for a SUD received at least one service in an outpatient setting in 2017, and almost 44 percent received at least one service in an inpatient setting during that year.
- Almost half of the Medicaid beneficiaries treated for a SUD (47 percent) in 2017 received emergency services—the most common SUD service provided during that year. About one-quarter of the beneficiaries treated for a SUD who received care in an inpatient or residential setting in 2017 received at least one outpatient, home- or community-based SUD service within 30 days of discharge.

¹⁷ Four states were not included in these analyses because of severe data quality issues: Mississippi, Missouri, Montana, and Nebraska. All numbers and percentages for the U.S. overall exclude these states.

¹⁸ These enrollment categories are adults, children, pregnant women, ABD-eligible beneficiaries, and VIII Group adults (the adult expansion group). More information about these groups is available in Section A of the Results.

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VI. RESULTS

A. The number and percentage of individuals enrolled in Medicaid who have a SUD

Section 1015(a)(2)(A) of the SUPPORT for Patients and Communities Act requires the SUD Data Book to provide information on the number and percentage of individuals enrolled in Medicaid who have been diagnosed with a SUD by major enrollment category. The data in Tables A.1 through A.8 address this section of the law. As required by the law, the reporting of these enrollment categories is largely consistent with those identified by MACPAC in its letter to HHS (see Appendix E for the composition of enrollment categories and Appendix F for a copy of the letter).¹⁹

This section presents the results of our analysis of the five major enrollment categories in Medicaid: adults, children, pregnant women, ABD-eligible beneficiaries, and VIII Group adults (the adult expansion group). We examined these enrollment categories in two ways: First, we looked at the number and percentage of Medicaid beneficiaries in each major enrollment category treated for a SUD (the denominator for these analyses being the number of Medicaid beneficiaries in each enrollment category; Table A.3). Next, we examined the number and percentage of Medicaid beneficiaries treated for a SUD who fell into each enrollment category (the denominator for these analyses being the number of Medicaid beneficiaries with a SUD; Table A.4). We also further disaggregated the ABD category by age using a similar table structure (Tables A.5 and A.6), and examined individuals dually eligible for Medicaid and Medicare who were treated for a SUD (Tables A.7 and A.8).

Table A.1. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by disorder

- Of the approximately 53.5 million full-benefit Medicaid beneficiaries ages 12 and older in the states included in this analysis, almost 4.1 million, or nearly 8 percent, were treated for a SUD in 2017.^{20, 21}

¹⁹ MACPAC suggests including a number of special populations, including children who qualify for Medicaid on the basis of child welfare; full-benefit, dually eligible beneficiaries younger than 65; and older adolescents. These populations are either not identifiable in the data or are too small to report separately. Additionally, MACPAC suggests including infants with neonatal abstinence syndrome. However, this data book follows the research literature and focuses only on Medicaid beneficiaries who have been treated for a SUD and are at least 12 years of age. This age group is consistent with the age range used in the National Survey of Drug Use and Health (<https://nsduhweb.rti.org/respweb/homepage.cfm>). As the data improve, future data books may be able to provide additional information on these and other subgroups.

²⁰ Some states, such as Arkansas, have relatively few identifiable Medicaid beneficiaries with a SUD (probably because of data quality issues) and may be biasing the U.S. average downwards.

²¹ Prevalence estimates based on these data should be considered lower-bound estimates that may underestimate the proportion of Medicaid beneficiaries with a SUD. These estimates do not include beneficiaries who had a SUD but did not seek treatment for the condition. Only those treated for a SUD and who were older than 12 in 2017 are included in our analyses.

- Tobacco use disorder was the most commonly treated SUD by Medicaid programs; 2 million, or 4 percent, of Medicaid beneficiaries met the criteria for this condition. It was followed by OUD (approximately 1.2 million, or 2 percent), polysubstance use disorder²² (approximately 1.1 million, or 2 percent), and alcohol use disorder (approximately 0.9 million, or 2 percent). Although the SUPPORT for Patients and Communities Act does not specifically request data on OUD, this SUD Data Book includes a series of OUD-specific data tables in Appendix D, given the importance of the current opioid epidemic.
- The proportion of Medicaid beneficiaries treated for a SUD varied considerably across states, although some of this variation may be a result of differences in the quality of state T-MSIS submissions. Ohio and Vermont had the highest proportion of Medicaid beneficiaries with a SUD (15 percent and 13 percent, respectively), and Puerto Rico and Arkansas had the lowest proportion (less than 1 percent and 3 percent, respectively).²³

Table A.2. Distribution of Medicaid beneficiaries treated for a SUD in 2017, by disorder

- Of the more than 4 million Medicaid beneficiaries treated for a SUD in 2017, almost 57 percent were treated for a tobacco use disorder, and almost 29 percent were treated for an OUD.
- The next most common disorders were polysubstance (use of multiple substances), at 27 percent of Medicaid beneficiaries treated for a SUD in 2017, and alcohol use disorder, at 21 percent.

Table A.3. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by major enrollment category

Table A.3 presents the distribution of beneficiaries treated for a SUD across the major Medicaid enrollment categories. Table A.4 presents the percentage of beneficiaries within each enrollment category who were treated for a SUD.

- Across the major enrollment categories, ABD beneficiaries had the highest prevalence of treatment for a SUD (10 percent) relative to the four other enrollment categories that were examined. More than 17 percent of the beneficiaries in Massachusetts and Maine who were eligible for Medicaid on the basis of disability were treated for a SUD. The next-highest group was the VIII Group, in which almost 10 percent of the beneficiaries were treated for a SUD,²⁴ followed by the adult group (8 percent) and beneficiaries eligible on the basis of being pregnant (8 percent).

²² A polysubstance use disorder involves a diagnosis in which there are two or more SUD or a polysubstance diagnosis code.

²³ Data quality issues, particularly a low volume of (and therefore potentially missing) claims, may partly explain the low proportion of Medicaid beneficiaries with a SUD in Puerto Rico and Arkansas.

²⁴ Colorado, Iowa, and Vermont expanded Medicaid either through a State Plan Amendment or through an 1115 demonstration, but in the TAF, they did not report adults in the VIII Group who were receiving SUD treatment.

Table A.4. Distribution of Medicaid beneficiaries treated for a SUD in 2017, by major enrollment category

- Adult beneficiaries in the VIII Group accounted for the largest share of beneficiaries treated for a SUD (38 percent) in 2017,²⁵ followed by those in the ABD enrollment category (32 percent) and then by the adult group (22 percent).²⁶ Of the states that did not expand Medicaid, the largest share of beneficiaries treated for a SUD were in the ABD enrollment category.
- The largest share of beneficiaries treated for a SUD who were in the VIII Group were from Washington State (70 percent), followed by Nevada (64 percent) and Indiana (64 percent).
- In six states, more than 10 percent of the beneficiaries treated for a SUD were eligible for Medicaid on the basis of being pregnant (from the highest share to the lowest: Texas, North Dakota, Utah, Wyoming, Oklahoma, and South Dakota).
- In three states, more than 10 percent of the beneficiaries treated for a SUD were eligible for Medicaid on the basis of a child-related enrollment category (from highest to lowest: South Dakota, Wyoming, and New Mexico).

Table A.5. Number and percentage of Medicaid beneficiaries treated for a SUD who were in the ABD enrollment category in 2017, by age group

- Fifteen percent of the Medicaid beneficiaries ages 19 to 64 who were in the ABD enrollment category in 2017 were treated for a SUD. The percentage was lower among beneficiaries in the ABD enrollment category, who were ages 65 and older (4 percent) and ages 12 to 19 (2 percent).

Table A.6. Distribution of Medicaid beneficiaries treated for a SUD who were in the ABD enrollment category in 2017, by age group

- In all states, the majority of Medicaid beneficiaries in the ABD enrollment category who were treated for a SUD in 2017 were adults ages 19 to 64 (81 percent).
- Approximately 17 percent of beneficiaries in the ABD enrollment category treated for a SUD in 2017 were 65 or older, and only 1 percent were ages 12–18.

Table A.7. Number and percentage of full-benefit, dually eligible Medicaid beneficiaries who were treated for a SUD in 2017

- Seven percent of the full-benefit, dually eligible Medicaid beneficiaries were treated for a SUD in 2017. The highest rate was again in Massachusetts (16 percent) and lowest in Idaho (not reportable because of a small sample).

Pennsylvania reported its VIII Group adults in a different way than did other states that expanded Medicaid, and we have accommodated this to include the state in this data book.

²⁵ Three states that expanded Medicaid did not report any beneficiaries in this group (Colorado, Iowa, and Vermont).

²⁶ Eligibility group is missing for more than 10 percent of the beneficiaries with a SUD in Kansas, New Hampshire, and Oregon, which may have skewed the results for these states.

Table A.8. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017 who were full-benefit and dually eligible

- Almost 15 percent of Medicaid beneficiaries treated for a SUD in 2017 were dually eligible with full benefits.
- At 32 percent, Massachusetts had the highest proportion of full-benefit, dually eligible Medicaid beneficiaries among those treated for a SUD in 2017, and Idaho had the lowest proportion (not reportable because of a small sample).

Table A.1.i. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by disorder²⁷

State	Total number of Medicaid beneficiaries	Any SUD		Alcohol		Cannabis		Opioids	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	53,462,361	4,084,089	7.6	858,776	1.6	532,392	1.0	1,164,950	2.2
Alabama	512,074	51,300	10.0	6,311	1.2	5,395	1.1	10,516	2.1
Alaska*	158,199	18,048	11.4	6,690	4.2	2,522	1.6	4,471	2.8
Arizona*	1,512,837	108,967	7.2	26,748	1.8	15,907	1.1	28,644	1.9
Arkansas*	460,867	12,265	2.7	1,957	0.4	1,986	0.4	1,289	0.3
California*	10,050,069	422,080	4.2	85,881	0.9	47,477	0.5	84,719	0.8
Colorado*	1,052,116	67,997	6.5	16,624	1.6	5,758	0.5	15,818	1.5
Connecticut*	713,934	87,004	12.2	21,759	3.0	13,951	2.0	34,393	4.8
Delaware*	179,030	18,528	10.3	3,911	2.2	2,562	1.4	9,956	5.6
District of Columbia*	200,116	15,642	7.8	3,558	1.8	2,021	1.0	3,569	1.8
Florida	2,410,115	136,441	5.7	22,415	0.9	17,729	0.7	27,281	1.1
Georgia	1,110,320	63,803	5.7	9,648	0.9	7,562	0.7	11,099	1.0
Hawaii*	307,278	18,200	5.9	3,145	1.0	1,943	0.6	3,736	1.2
Idaho	161,110	10,416	6.5	1,433	0.9	675	0.4	2,393	1.5
Illinois*	311,088	15,377	4.9	4,233	1.4	2,867	0.9	2,833	0.9
Indiana*	1,097,727	94,721	8.6	18,063	1.6	11,985	1.1	28,386	2.6
Iowa*	627,465	51,123	8.1	11,815	1.9	9,178	1.5	5,459	0.9
Kansas	249,801	20,250	8.1	3,330	1.3	3,531	1.4	2,745	1.1
Kentucky*	1,115,633	137,127	12.3	15,667	1.4	11,357	1.0	47,530	4.3
Louisiana*	594,525	39,945	6.7	5,791	1.0	5,798	1.0	7,067	1.2
Maine	169,150	20,830	12.3	3,178	1.9	1,176	0.7	9,328	5.5
Maryland*	980,899	117,863	12.0	58,880	6.0	2,343	0.2	65,868	6.7
Massachusetts*	1,429,779	180,056	12.6	44,726	3.1	18,337	1.3	79,511	5.6
Michigan*	2,050,490	190,471	9.3	40,457	2.0	23,032	1.1	43,138	2.1
Minnesota*	905,247	100,405	11.1	27,790	3.1	14,319	1.6	21,377	2.4
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	528,501	41,400	7.8	9,136	1.7	5,204	1.0	10,581	2.0
New Hampshire*	165,862	13,430	8.1	2,462	1.5	933	0.6	7,214	4.3

²⁷ Tables split across multiple pages are given lower-case Roman numerals at the end of the table number to indicate whether the “component table” is the first (i), second (ii), and so on. The source and notes for each table are located after the final component table.

Table A.1.i. (continued)

State	Total number of Medicaid beneficiaries	Any SUD		Alcohol		Cannabis		Opioids	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	1,358,106	81,928	6.0	18,591	1.4	9,824	0.7	28,208	2.1
New Mexico*	255,223	19,153	7.5	4,896	1.9	2,816	1.1	6,269	2.5
New York*	4,814,854	412,492	8.6	104,428	2.2	79,048	1.6	117,969	2.5
North Carolina	1,106,940	109,346	9.9	16,011	1.4	12,398	1.1	26,252	2.4
North Dakota*	35,353	3,072	8.7	651	1.8	522	1.5	317	0.9
Ohio*	2,459,666	362,088	14.7	63,859	2.6	57,873	2.4	102,734	4.2
Oklahoma	438,682	42,095	9.6	4,921	1.1	4,062	0.9	8,737	2.0
Oregon*	844,280	90,062	10.7	22,781	2.7	13,307	1.6	22,106	2.6
Pennsylvania*	2,336,316	278,008	11.9	52,061	2.2	36,626	1.6	108,875	4.7
Puerto Rico*	2,548,531	15,227	0.6	2,668	0.1	1,803	0.1	5,620	0.2
Rhode Island*	267,077	17,881	6.7	5,245	2.0	1,677	0.6	9,826	3.7
South Carolina	620,945	42,561	6.9	6,903	1.1	6,502	1.0	6,457	1.0
South Dakota	71,413	5,875	8.2	1,600	2.2	1,106	1.5	505	0.7
Tennessee	1,066,003	89,695	8.4	11,994	1.1	11,794	1.1	18,377	1.7
Texas	2,500,164	113,195	4.5	17,682	0.7	17,425	0.7	17,085	0.7
Utah	198,617	11,367	5.7	1,725	0.9	970	0.5	3,910	2.0
Vermont*	143,771	19,100	13.3	4,096	2.8	2,206	1.5	9,906	6.9
Virginia	671,301	50,330	7.5	6,698	1.0	4,106	0.6	15,142	2.3
Washington*	1,442,574	137,886	9.6	31,221	2.2	20,585	1.4	44,119	3.1
West Virginia*	459,782	45,593	9.9	6,109	1.3	3,142	0.7	20,453	4.4
Wisconsin	724,820	79,303	10.9	18,077	2.5	8,530	1.2	22,546	3.1
Wyoming	43,711	4,143	9.5	951	2.2	522	1.2	616	1.4

Table A.1.ii. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by disorder

State	Total number of Medicaid beneficiaries	Polysubstance		Stimulants		Tobacco		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	53,462,361	1,104,594	2.1	464,803	0.9	2,314,143	4.3	394,095	0.7
Alabama	512,074	12,529	2.4	4,345	0.8	39,328	7.7	4,855	0.9
Alaska*	158,199	5,426	3.4	2,161	1.4	8,393	5.3	1,772	1.1
Arizona*	1,512,837	30,458	2.0	22,226	1.5	51,908	3.4	10,554	0.7
Arkansas*	460,867	2,206	0.5	1,200	0.3	7,568	1.6	1,264	0.3
California*	10,050,069	98,180	1.0	62,398	0.6	214,656	2.1	35,026	0.3
Colorado*	1,052,116	15,429	1.5	6,458	0.6	40,654	3.9	4,607	0.4
Connecticut*	713,934	26,859	3.8	9,671	1.4	39,438	5.5	8,133	1.1
Delaware*	179,030	6,685	3.7	2,425	1.4	8,161	4.6	1,841	1.0
District of Columbia*	200,116	5,036	2.5	1,763	0.9	10,463	5.2	2,270	1.1
Florida	2,410,115	35,198	1.5	11,592	0.5	93,714	3.9	17,269	0.7
Georgia	1,110,320	14,641	1.3	6,855	0.6	43,458	3.9	6,709	0.6
Hawaii*	307,278	4,581	1.5	4,158	1.4	10,150	3.3	1,675	0.5
Idaho	161,110	1,992	1.2	774	0.5	7,384	4.6	666	0.4
Illinois*	311,088	4,587	1.5	1,795	0.6	9,310	3.0	1,538	0.5
Indiana*	1,097,727	25,029	2.3	10,269	0.9	54,645	5.0	10,317	0.9
Iowa*	627,465	14,109	2.2	9,249	1.5	32,420	5.2	3,739	0.6
Kansas	249,801	4,989	2.0	3,369	1.3	12,778	5.1	1,710	0.7
Kentucky*	1,115,633	34,312	3.1	13,336	1.2	84,338	7.6	15,084	1.4
Louisiana*	594,525	9,933	1.7	4,823	0.8	26,972	4.5	4,755	0.8
Maine	169,150	4,054	2.4	539	0.3	9,966	5.9	1,633	1.0
Maryland*	980,899	27,394	2.8	2,024	0.2	19,692	2.0	3,759	0.4
Massachusetts*	1,429,779	59,950	4.2	18,388	1.3	98,221	6.9	22,861	1.6
Michigan*	2,050,490	43,800	2.1	13,363	0.7	117,272	5.7	12,278	0.6
Minnesota*	905,247	28,475	3.1	16,568	1.8	54,734	6.0	9,158	1.0
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	528,501	11,719	2.2	7,666	1.5	21,871	4.1	4,507	0.9
New Hampshire*	165,862	3,229	1.9	764	0.5	5,232	3.2	1,277	0.8
New Jersey*	1,358,106	22,680	1.7	5,271	0.4	45,213	3.3	9,714	0.7
New Mexico*	255,223	4,945	1.9	2,426	1.0	7,081	2.8	2,082	0.8
New York*	4,814,854	134,717	2.8	52,139	1.1	247,821	5.1	45,698	0.9
North Carolina	1,106,940	25,575	2.3	9,204	0.8	72,237	6.5	9,846	0.9
North Dakota*	35,353	837	2.4	409	1.2	2,028	5.7	302	0.9

Table A.1.ii. (continued)

State	Total number of Medicaid beneficiaries	Polysubstance		Stimulants		Tobacco		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Ohio*	2,459,666	109,703	4.5	34,773	1.4	241,912	9.8	34,569	1.4
Oklahoma	438,682	9,076	2.1	4,392	1.0	28,603	6.5	4,199	1.0
Oregon*	844,280	26,834	3.2	17,247	2.0	45,455	5.4	5,285	0.6
Pennsylvania*	2,336,316	80,338	3.4	29,990	1.3	141,967	6.1	30,536	1.3
Puerto Rico*	2,548,531	2,569	0.1	1,802	0.1	4,328	0.2	1,786	0.1
Rhode Island*	267,077	3,141	1.2	1,235	0.5	3,167	1.2	917	0.3
South Carolina	620,945	10,389	1.7	4,215	0.7	29,003	4.7	3,543	0.6
South Dakota	71,413	1,444	2.0	405	0.6	3,806	5.3	417	0.6
Tennessee	1,066,003	22,424	2.1	8,804	0.8	62,450	5.9	11,421	1.1
Texas	2,500,164	25,757	1.0	12,940	0.5	73,004	2.9	13,726	0.5
Utah	198,617	2,579	1.3	1,256	0.6	6,150	3.1	1,127	0.6
Vermont*	143,771	5,392	3.8	1,226	0.9	8,154	5.7	1,265	0.9
Virginia	671,301	10,287	1.5	2,842	0.4	32,882	4.9	3,716	0.6
Washington*	1,442,574	43,704	3.0	25,360	1.8	64,398	4.5	12,778	0.9
West Virginia*	459,782	11,005	2.4	3,120	0.7	23,479	5.1	5,061	1.1
Wisconsin	724,820	19,569	2.7	7,214	1.0	45,824	6.3	6,607	0.9
Wyoming	43,711	829	1.9	354	0.8	2,455	5.6	243	0.6

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. A polysubstance use disorder involves a diagnosis in which there are two or more SUD or a polysubstance diagnosis code. Appendix B includes detailed information on how we identified SUD treatment.

The "Other" category includes treatment for caffeine; hallucinogens; sedatives, hypnotics, and anxiolytics; inhalants; and unspecified or unknown SUD.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Table A.2.i. Distribution of Medicaid beneficiaries treated for a SUD in 2017, by disorder

State	Total number of Medicaid beneficiaries with a SUD	Alcohol		Cannabis		Opioids	
		Number	Percent	Number	Percent	Number	Percent
United States	4,084,089	858,776	21.0	532,392	13.0	1,164,950	28.5
Alabama	51,300	6,311	12.3	5,395	10.5	10,516	20.5
Alaska*	18,048	6,690	37.1	2,522	14.0	4,471	24.8
Arizona*	108,967	26,748	24.5	15,907	14.6	28,644	26.3
Arkansas*	12,265	1,957	16.0	1,986	16.2	1,289	10.5
California*	422,080	85,881	20.3	47,477	11.2	84,719	20.1
Colorado*	67,997	16,624	24.4	5,758	8.5	15,818	23.3
Connecticut*	87,004	21,759	25.0	13,951	16.0	34,393	39.5
Delaware*	18,528	3,911	21.1	2,562	13.8	9,956	53.7
District of Columbia*	15,642	3,558	22.7	2,021	12.9	3,569	22.8
Florida	136,441	22,415	16.4	17,729	13.0	27,281	20.0
Georgia	63,803	9,648	15.1	7,562	11.9	11,099	17.4
Hawaii*	18,200	3,145	17.3	1,943	10.7	3,736	20.5
Idaho	10,416	1,433	13.8	675	6.5	2,393	23.0
Illinois*	15,377	4,233	27.5	2,867	18.6	2,833	18.4
Indiana*	94,721	18,063	19.1	11,985	12.7	28,386	30.0
Iowa*	51,123	11,815	23.1	9,178	18.0	5,459	10.7
Kansas	20,250	3,330	16.4	3,531	17.4	2,745	13.6
Kentucky*	137,127	15,667	11.4	11,357	8.3	47,530	34.7
Louisiana*	39,945	5,791	14.5	5,798	14.5	7,067	17.7
Maine	20,830	3,178	15.3	1,176	5.6	9,328	44.8
Maryland*	117,863	58,880	50.0	2,343	2.0	65,868	55.9
Massachusetts*	180,056	44,726	24.8	18,337	10.2	79,511	44.2
Michigan*	190,471	40,457	21.2	23,032	12.1	43,138	22.6
Minnesota*	100,405	27,790	27.7	14,319	14.3	21,377	21.3
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	9,136	22.1	5,204	12.6	10,581	25.6
New Hampshire*	13,430	2,462	18.3	933	6.9	7,214	53.7
New Jersey*	81,928	18,591	22.7	9,824	12.0	28,208	34.4
New Mexico*	19,153	4,896	25.6	2,816	14.7	6,269	32.7
New York*	412,492	104,428	25.3	79,048	19.2	117,969	28.6
North Carolina	109,346	16,011	14.6	12,398	11.3	26,252	24.0
North Dakota*	3,072	651	21.2	522	17.0	317	10.3

Table A.2.i. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Alcohol		Cannabis		Opioids	
		Number	Percent	Number	Percent	Number	Percent
Ohio*	362,088	63,859	17.6	57,873	16.0	102,734	28.4
Oklahoma	42,095	4,921	11.7	4,062	9.6	8,737	20.8
Oregon*	90,062	22,781	25.3	13,307	14.8	22,106	24.5
Pennsylvania*	278,008	52,061	18.7	36,626	13.2	108,875	39.2
Puerto Rico*	15,227	2,668	17.5	1,803	11.8	5,620	36.9
Rhode Island*	17,881	5,245	29.3	1,677	9.4	9,826	55.0
South Carolina	42,561	6,903	16.2	6,502	15.3	6,457	15.2
South Dakota	5,875	1,600	27.2	1,106	18.8	505	8.6
Tennessee	89,695	11,994	13.4	11,794	13.1	18,377	20.5
Texas	113,195	17,682	15.6	17,425	15.4	17,085	15.1
Utah	11,367	1,725	15.2	970	8.5	3,910	34.4
Vermont*	19,100	4,096	21.4	2,206	11.5	9,906	51.9
Virginia	50,330	6,698	13.3	4,106	8.2	15,142	30.1
Washington*	137,886	31,221	22.6	20,585	14.9	44,119	32.0
West Virginia*	45,593	6,109	13.4	3,142	6.9	20,453	44.9
Wisconsin	79,303	18,077	22.8	8,530	10.8	22,546	28.4
Wyoming	4,143	951	23.0	522	12.6	616	14.9

Table A.2.ii. Distribution of Medicaid beneficiaries treated for a SUD in 2017, by disorder

State	Total number of Medicaid beneficiaries with a SUD	Polysubstance		Stimulants		Tobacco		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	4,084,089	1,104,594	27.0	464,803	11.4	2,314,143	56.7	394,095	9.6
Alabama	51,300	12,529	24.4	4,345	8.5	39,328	76.7	4,855	9.5
Alaska*	18,048	5,426	30.1	2,161	12.0	8,393	46.5	1,772	9.8
Arizona*	108,967	30,458	28.0	22,226	20.4	51,908	47.6	10,554	9.7
Arkansas*	12,265	2,206	18.0	1,200	9.8	7,568	61.7	1,264	10.3
California*	422,080	98,180	23.3	62,398	14.8	214,656	50.9	35,026	8.3
Colorado*	67,997	15,429	22.7	6,458	9.5	40,654	59.8	4,607	6.8
Connecticut*	87,004	26,859	30.9	9,671	11.1	39,438	45.3	8,133	9.3
Delaware*	18,528	6,685	36.1	2,425	13.1	8,161	44.0	1,841	9.9
District of Columbia*	15,642	5,036	32.2	1,763	11.3	10,463	66.9	2,270	14.5
Florida	136,441	35,198	25.8	11,592	8.5	93,714	68.7	17,269	12.7
Georgia	63,803	14,641	22.9	6,855	10.7	43,458	68.1	6,709	10.5
Hawaii*	18,200	4,581	25.2	4,158	22.8	10,150	55.8	1,675	9.2
Idaho	10,416	1,992	19.1	774	7.4	7,384	70.9	666	6.4
Illinois*	15,377	4,587	29.8	1,795	11.7	9,310	60.5	1,538	10.0
Indiana*	94,721	25,029	26.4	10,269	10.8	54,645	57.7	10,317	10.9
Iowa*	51,123	14,109	27.6	9,249	18.1	32,420	63.4	3,739	7.3
Kansas	20,250	4,989	24.6	3,369	16.6	12,778	63.1	1,710	8.4
Kentucky*	137,127	34,312	25.0	13,336	9.7	84,338	61.5	15,084	11.0
Louisiana*	39,945	9,933	24.9	4,823	12.1	26,972	67.5	4,755	11.9
Maine	20,830	4,054	19.5	539	2.6	9,966	47.8	1,633	7.8
Maryland*	117,863	27,394	23.2	2,024	1.7	19,692	16.7	3,759	3.2
Massachusetts*	180,056	59,950	33.3	18,388	10.2	98,221	54.6	22,861	12.7
Michigan*	190,471	43,800	23.0	13,363	7.0	117,272	61.6	12,278	6.4
Minnesota*	100,405	28,475	28.4	16,568	16.5	54,734	54.5	9,158	9.1
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	11,719	28.3	7,666	18.5	21,871	52.8	4,507	10.9
New Hampshire*	13,430	3,229	24.0	764	5.7	5,232	39.0	1,277	9.5

Table A.2.ii. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Polysubstance		Stimulants		Tobacco		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	81,928	22,680	27.7	5,271	6.4	45,213	55.2	9,714	11.9
New Mexico*	19,153	4,945	25.8	2,426	12.7	7,081	37.0	2,082	10.9
New York*	412,492	134,717	32.7	52,139	12.6	247,821	60.1	45,698	11.1
North Carolina	109,346	25,575	23.4	9,204	8.4	72,237	66.1	9,846	9.0
North Dakota*	3,072	837	27.2	409	13.3	2,028	66.0	302	9.8
Ohio*	362,088	109,703	30.3	34,773	9.6	241,912	66.8	34,569	9.5
Oklahoma	42,095	9,076	21.6	4,392	10.4	28,603	67.9	4,199	10.0
Oregon*	90,062	26,834	29.8	17,247	19.2	45,455	50.5	5,285	5.9
Pennsylvania*	278,008	80,338	28.9	29,990	10.8	141,967	51.1	30,536	11.0
Puerto Rico*	15,227	2,569	16.9	1,802	11.8	4,328	28.4	1,786	11.7
Rhode Island*	17,881	3,141	17.6	1,235	6.9	3,167	17.7	917	5.1
South Carolina	42,561	10,389	24.4	4,215	9.9	29,003	68.1	3,543	8.3
South Dakota	5,875	1,444	24.6	405	6.9	3,806	64.8	417	7.1
Tennessee	89,695	22,424	25.0	8,804	9.8	62,450	69.6	11,421	12.7
Texas	113,195	25,757	22.8	12,940	11.4	73,004	64.5	13,726	12.1
Utah	11,367	2,579	22.7	1,256	11.0	6,150	54.1	1,127	9.9
Vermont*	19,100	5,392	28.2	1,226	6.4	8,154	42.7	1,265	6.6
Virginia	50,330	10,287	20.4	2,842	5.6	32,882	65.3	3,716	7.4
Washington*	137,886	43,704	31.7	25,360	18.4	64,398	46.7	12,778	9.3
West Virginia*	45,593	11,005	24.1	3,120	6.8	23,479	51.5	5,061	11.1
Wisconsin	79,303	19,569	24.7	7,214	9.1	45,824	57.8	6,607	8.3
Wyoming	4,143	829	20.0	354	8.5	2,455	59.3	243	5.9

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. A polysubstance use disorder involves a diagnosis in which there are two or more SUD or a polysubstance diagnosis code. Appendix B includes detailed information on how we identified SUD treatment.

The "Other" category includes treatment for caffeine; hallucinogens; sedatives, hypnotics, and anxiolytics; inhalants; and unspecified or unknown SUD.

The percentages in this table may not sum to 100 within a state because of the polysubstance category and because beneficiaries can be treated for more than one SUD.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Table A.3.i. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by major enrollment category

State	Total number of Medicaid beneficiaries	Adult			Children			Pregnant		
		Total number	Number with a SUD	Percent	Total number	Number with a SUD	Percent	Total number	Number with a SUD	Percent
United States	53,462,361	11,142,347	908,783	8.2	10,223,898	131,615	1.3	1,390,129	109,415	7.9
Alabama	512,074	111,099	16,792	15.1	155,840	1,547	1.0	22,446	1,356	6.0
Alaska*	158,199	45,426	4,441	9.8	34,271	1,026	3.0	4,897	1,065	21.7
Arizona*	1,512,837	357,222	24,555	6.9	347,758	4,753	1.4	36,825	3,193	8.7
Arkansas*	460,867	81,549	2,864	3.5	89,525	590	0.7	86,322	596	0.7
California*	10,050,069	2,237,614	71,557	3.2	1,269,395	9,492	0.7	80,904	1,179	1.5
Colorado*	1,052,116	768,043	55,017	7.2	179,697	DS	DS	22,835	2,396	10.5
Connecticut*	713,934	189,957	18,954	10.0	131,066	2,096	1.6	12,447	1,110	8.9
Delaware*	179,030	39,070	4,201	10.8	33,367	DS	DS	4,889	654	13.4
District of Columbia*	200,116	52,877	2,570	4.9	26,824	288	1.1	555	27	4.9
Florida	2,410,115	668,458	48,829	7.3	799,961	7,545	0.9	56,559	6,576	11.6
Georgia	1,110,320	382,166	17,864	4.7	307,328	DS	DS	86,703	5,665	6.5
Hawaii*	307,278	33,289	1,752	5.3	57,066	478	0.8	21,156	1,205	5.7
Idaho	161,110	50,730	4,277	8.4	54,916	371	0.7	0	.	.
Illinois*	311,088	171,020	12,020	7.0	73,783	898	1.2	7,989	DS	DS
Indiana*	1,097,727	76,544	4,984	6.5	198,609	2,207	1.1	34,352	2,992	8.7
Iowa*	627,465	327,194	35,654	10.9	7,177	194	2.7	54,775	2,316	4.2
Kansas	249,801	79,903	6,938	8.7	65,731	827	1.3	16,185	1,409	8.7
Kentucky*	1,115,633	128,826	22,293	17.3	148,933	3,025	2.0	17,535	2,003	11.4
Louisiana*	594,525	100,723	12,486	12.4	214,678	2,132	1.0	12,700	1,231	9.7
Maine	169,150	46,620	7,275	15.6	42,301	798	1.9	8,913	1,551	17.4
Maryland*	980,899	241,452	29,082	12.0	189,801	3,432	1.8	DS	DS	DS
Massachusetts*	1,429,779	397,087	34,685	8.7	128,952	1,587	1.2	9,196	725	7.9
Michigan*	2,050,490	408,053	43,264	10.6	307,872	4,886	1.6	15,587	1,473	9.5
Minnesota*	905,247	203,878	21,363	10.5	218,462	5,912	2.7	27,84	3,223	11.6
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	528,501	63,562	4,778	7.5	92,781	1,078	1.2	13,865	1,383	10.0
New Hampshire*	165,862	14,543	2,412	16.6	33,950	271	0.8	3,922	459	11.7

Table A.3.i. (continued)

State	Total number of Medicaid beneficiaries	Adult			Children			Pregnant		
		Total number	Number with a SUD	Percent	Total number	Number with a SUD	Percent	Total number	Number with a SUD	Percent
New Jersey*	1,358,106	118,307	9,127	7.7	243,542	2,583	1.1	24,687	542	2.2
New Mexico*	255,223	60,534	6,668	11.0	117,306	2,307	2.0	3,206	140	4.4
New York*	4,814,854	595,968	52,681	8.8	547,722	7,331	1.3	68,762	DS	DS
North Carolina	1,106,940	238,786	37,622	15.8	374,138	5,168	1.4	24,704	2,563	10.4
North Dakota*	35,353	12,260	1,145	9.3	6,574	280	4.3	2,380	455	19.1
Ohio*	2,459,666	486,964	88,753	18.2	492,037	17,540	3.6	53,955	11,642	21.6
Oklahoma	438,682	DS	DS	DS	157,941	2,023	1.3	33,799	4,880	14.4
Oregon*	844,280	90,792	12,096	13.3	130,847	3,366	2.6	16,528	2,328	14.1
Pennsylvania*	2,336,316	285,590	43,347	15.2	351,165	7,108	2.0	29,998	3,899	13.0
Puerto Rico*	2,548,531	578,829	2,181	0.4	351,139	683	0.2	6,813	DS	DS
Rhode Island*	267,077	68,737	3,520	5.1	37,158	DS	DS	716	DS	DS
South Carolina	620,945	180,724	17,483	9.7	199,151	3,937	2.0	16,320	1,599	9.8
South Dakota	71,413	19,942	1,731	8.7	23,620	991	4.2	DS	DS	DS
Tennessee	1,066,003	430,165	35,305	8.2	167,212	4,248	2.5	68,157	8,590	12.6
Texas	2,500,164	DS	DS	DS	1,030,594	7,599	0.7	283,771	17,655	6.2
Utah	198,617	48,609	3,223	6.6	69,593	465	0.7	17,061	1,641	9.6
Vermont*	143,771	36,664	5,718	15.6	26,848	DS	DS	32	DS	DS
Virginia	671,301	128,538	15,332	11.9	187,862	1,549	0.8	31,996	3,488	10.9
Washington*	1,442,574	62,051	4,750	7.7	286,245	6,012	2.1	15,275	1,174	7.7
West Virginia*	459,782	50,100	6,508	13.0	73,428	744	1.0	7,835	1,495	19.1
Wisconsin	724,820	360,479	49,277	13.7	124,529	1,678	1.3	21,040	3,028	14.4
Wyoming	43,711	11,403	1,409	12.4	15,203	570	3.7	3,697	509	13.8

Table A.3.ii. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by major enrollment category

State	Total number of Medicaid beneficiaries	Aged, blind, disabled			VIII group adult			Unknown		
		Total number	Number with a SUD	Percent	Total number	Number with a SUD	Percent	Total number	Number with a SUD	Percent
United States	53,462,361	13,019,040	1,298,951	10.0	16,138,658	1,553,206	9.6	1,407,885	64,227	4.6
Alabama	512,074	221,702	31,540	14.2	0	.	.	987	65	6.6
Alaska*	158,199	27,267	3,371	12.4	46,338	8,145	17.6	0	.	.
Arizona*	1,512,837	242,443	22,482	9.3	473,935	53,984	11.4	54,654	0	0.0
Arkansas*	460,867	187,568	7,795	4.2	9,688	316	3.3	6,215	104	1.7
California*	10,050,069	2,179,699	127,549	5.9	4,220,473	211,563	5.0	61,984	740	1.2
Colorado*	1,052,116	81,052	9,156	11.3	0	.	.	489	DS	DS
Connecticut*	713,934	95,900	13,909	14.5	284,564	50,935	17.9	0	.	.
Delaware*	179,030	22,298	2,266	10.2	79,347	11,048	13.9	59	DS	DS
District of Columbia*	200,116	46,741	7,146	15.3	72,827	5,536	7.6	292	75	25.7
Florida	2,410,115	769,256	69,317	9.0	0	.	.	115,881	4,174	3.6
Georgia	1,110,320	334,024	38,130	11.4	0	.	.	99	DS	DS
Hawaii*	307,278	51,277	4,959	9.7	136,471	9,742	7.1	8,019	64	0.8
Idaho	161,110	54,389	5,716	10.5	0	.	.	1,075	52	4.8
Illinois*	311,088	30,314	1,523	5.0	27,956	571	2.0	26	DS	DS
Indiana*	1,097,727	250,468	23,338	9.3	518,729	60,268	11.6	19,025	932	4.9
Iowa*	627,465	112,170	12,943	11.5	0	.	.	126,149	16	0.0
Kansas	249,801	54,606	7,673	14.1	0	.	.	33,376	3,403	10.2
Kentucky*	1,115,633	223,255	31,605	14.2	589,092	77,845	13.2	7,992	356	4.5
Louisiana*	594,525	213,818	23,656	11.1	28	DS	DS	52,578	DS	DS
Maine	169,150	62,105	10,665	17.2	0	.	.	9,211	541	5.9
Maryland*	980,899	168,061	25,643	15.3	370,116	57,880	15.6	DS	DS	DS
Massachusetts*	1,429,779	462,747	81,492	17.6	419,227	60,982	14.5	12,570	585	4.7
Michigan*	2,050,490	455,433	45,821	10.1	863,481	95,027	11.0	64	0	0.0
Minnesota*	905,247	186,824	26,509	14.2	268,243	43,398	16.2	0	.	.
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	528,501	43,898	5,477	12.5	290,328	26,449	9.1	24,067	2,235	9.3
New Hampshire*	165,862	21,737	2,982	13.7	75,070	5,036	6.7	16,640	2,270	13.6

Table A.3.ii. (continued)

State	Total number of Medicaid beneficiaries	Aged, blind, disabled			VIII group adult			Unknown		
		Total number	Number with a SUD	Percent	Total number	Number with a SUD	Percent	Total number	Number with a SUD	Percent
New Jersey*	1,358,106	299,823	26,481	8.8	666,972	43,147	6.5	4,775	48	1.0
New Mexico*	255,223	74,100	10,016	13.5	77	22	28.6	0	.	.
New York*	4,814,854	1,130,221	121,026	10.7	2,472,052	228,727	9.3	129	DS	DS
North Carolina	1,106,940	425,216	61,615	14.5	0	.	.	44,096	2,378	5.4
North Dakota*	35,353	7,978	915	11.5	79	20	25.3	6,082	257	4.2
Ohio*	2,459,666	445,689	72,380	16.2	862,399	168,502	19.5	118,622	3,271	2.8
Oklahoma	438,682	230,897	34,257	14.8	0	.	.	DS	DS	DS
Oregon*	844,280	42,453	4,344	10.2	462,924	56,259	12.2	100,736	11,669	11.6
Pennsylvania*	2,336,316	590,498	68,667	11.6	966,073	140,371	14.5	112,992	14,616	12.9
Puerto Rico*	2,548,531	730,491	4,115	0.6	791,061	7,889	1.0	90,198	DS	DS
Rhode Island*	267,077	66,985	5,147	7.7	93,481	8,884	9.5	0	.	.
South Carolina	620,945	224,750	19,542	8.7	0	.	.	0	.	.
South Dakota	71,413	23,755	2,547	10.7	0	.	.	DS	DS	DS
Tennessee	1,066,003	294,766	38,310	13.0	0	.	.	105,703	3,242	3.1
Texas	2,500,164	829,348	71,225	8.6	DS	DS	DS	247,657	10,998	4.4
Utah	198,617	61,869	5,879	9.5	0	.	.	1,485	159	10.7
Vermont*	143,771	79,446	12,727	16.0	0	.	.	781	DS	DS
Virginia	671,301	313,039	29,386	9.4	39	0	0.0	9,827	575	5.9
Washington*	1,442,574	214,527	29,404	13.7	859,940	96,240	11.2	4,536	306	6.7
West Virginia*	459,782	101,957	11,330	11.1	217,648	24,420	11.2	8,814	1,096	12.4
Wisconsin	724,820	218,772	25,320	11.6	0	.	.	0	.	.
Wyoming	43,711	13,408	1,655	12.3	0	.	.	0	.	.

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. A polysubstance use disorder involves a diagnosis in which there are two or more SUD or a polysubstance diagnosis code. Appendix B includes detailed information on how we identified SUD treatment.

In New Mexico and North Dakota, the number of beneficiaries in VIII Group adult is very low even though both states expanded Medicaid. New Mexico is reporting virtually all of its VIII Group adult beneficiaries as having restricted benefits, so they are not included in the SUD Data Book. North Dakota is not reporting VIII Group adult beneficiaries in T-MSIS.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Table A.4. Distribution of Medicaid beneficiaries treated for a SUD in 2017, by major enrollment category

State	Total number of Medicaid beneficiaries with a SUD	Adult		Children		Pregnant		Aged, blind, disabled		VIII Group adult		Unknown	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	4,084,089	915,436	22.4	131,615	3.2	111,847	2.7	1,298,951	31.8	1,553,206	38.0	64,227	1.6
Alabama	51,300	16,792	32.7	1,547	3.0	1,356	2.6	31,540	61.5	0	0.0	65	0.1
Alaska*	18,048	4,441	24.6	1,026	5.7	1,065	5.9	3,371	18.7	8,145	45.1	0	0.0
Arizona*	108,967	24,555	22.5	4,753	4.4	3,193	2.9	22,482	20.6	53,984	49.5	0	0.0
Arkansas*	12,265	2,864	23.4	590	4.8	596	4.9	7,795	63.6	316	2.6	104	0.8
California*	422,080	71,557	17.0	9,492	2.2	1,179	0.3	127,549	30.2	211,563	50.1	740	0.2
Colorado*	67,997	55,017	80.9	DS	DS	2,396	3.5	9,156	13.5	0	0.0	DS	DS
Connecticut*	87,004	18,954	21.8	2,096	2.4	1,110	1.3	13,909	16.0	50,935	58.5	0	0.0
Delaware*	18,528	4,201	22.7	DS	DS	654	3.5	2,266	12.2	11,048	59.6	DS	DS
District of Columbia*	15,642	2,570	16.4	288	1.8	27	0.2	7,146	45.7	5,536	35.4	75	0.5
Florida	136,441	48,829	35.8	7,545	5.5	6,576	4.8	69,317	50.8	0	0.0	4,174	3.1
Georgia	63,803	17,864	28.0	DS	DS	5,665	8.9	38,130	59.8	0	0.0	DS	DS
Hawaii*	18,200	1,752	9.6	478	2.6	1,205	6.6	4,959	27.2	9,742	53.5	64	0.4
Idaho	10,416	4,277	41.1	371	3.6	0	0.0	5,716	54.9	0	0.0	52	0.5
Illinois*	15,377	12,020	78.2	898	5.8	DS	DS	1,523	9.9	571	3.7	DS	DS
Indiana*	94,721	4,984	5.3	2,207	2.3	2,992	3.2	23,338	24.6	60,268	63.6	932	1.0
Iowa*	51,123	35,654	69.7	194	0.4	2,316	4.5	12,943	25.3	0	0.0	16	0.0
Kansas	20,250	6,938	34.3	827	4.1	1,409	7.0	7,673	37.9	0	0.0	3,403	16.8
Kentucky*	137,127	22,293	16.3	3,025	2.2	2,003	1.5	31,605	23.0	77,845	56.8	356	0.3
Louisiana*	39,945	12,486	31.3	2,132	5.3	1,231	3.1	23,656	59.2	DS	DS	DS	DS
Maine	20,830	7,275	34.9	798	3.8	1,551	7.4	10,665	51.2	0	0.0	541	2.6
Maryland*	117,863	29,082	24.7	3,432	2.9	1,826	1.5	25,643	21.8	57,880	49.1	0	0.0
Massachusetts*	180,056	34,685	19.3	1,587	0.9	725	0.4	81,492	45.3	60,982	33.9	585	0.3
Michigan*	190,471	43,264	22.7	4,886	2.6	1,473	0.8	45,821	24.1	95,027	49.9	0	0.0
Minnesota*	100,405	21,363	21.3	5,912	5.9	3,223	3.2	26,509	26.4	43,398	43.2	0	0.0
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	4,778	11.5	1,078	2.6	1,383	3.3	5,477	13.2	26,449	63.9	2,235	5.4
New Hampshire*	13,430	2,412	18.0	271	2.0	459	3.4	2,982	22.2	5,036	37.5	2,270	16.9

Table A.4. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Adult		Children		Pregnant		Aged, blind, disabled		VIII Group adult		Unknown	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	81,928	9,127	11.1	2,583	3.2	542	0.7	26,481	32.3	43,147	52.7	48	0.1
New Mexico*	19,153	6,668	34.8	2,307	12.0	140	0.7	10,016	52.3	22	0.1	0	0.0
New York*	412,492	52,681	12.8	7,331	1.8	DS	DS	121,026	29.3	228,727	55.5	DS	DS
North Carolina	109,346	37,622	34.4	5,168	4.7	2,563	2.3	61,615	56.3	0	0.0	2,378	2.2
North Dakota*	3,072	1,145	37.3	280	9.1	455	14.8	915	29.8	20	0.7	257	8.4
Ohio*	362,088	88,753	24.5	17,540	4.8	11,642	3.2	72,380	20.0	168,502	46.5	3,271	0.9
Oklahoma	42,095	935	2.2	2,023	4.8	4,880	11.6	34,257	81.4	0	0.0	0	0.0
Oregon*	90,062	12,096	13.4	3,366	3.7	2,328	2.6	4,344	4.8	56,259	62.5	11,669	13.0
Pennsylvania*	278,008	43,347	15.6	7,108	2.6	3,899	1.4	68,667	24.7	140,371	50.5	14,616	5.3
Puerto Rico*	15,227	2,181	14.3	683	4.5	DS	DS	4,115	27.0	7,889	51.8	DS	DS
Rhode Island*	17,881	3,520	19.7	DS	DS	DS	DS	5,147	28.8	8,884	49.7	0	0.0
South Carolina	42,561	17,483	41.1	3,937	9.3	1,599	3.8	19,542	45.9	0	0.0	0	0.0
South Dakota	5,875	1,731	29.5	991	16.9	606	10.3	2,547	43.4	0	0.0	0	0.0
Tennessee	89,695	35,305	39.4	4,248	4.7	8,590	9.6	38,310	42.7	0	0.0	3,242	3.6
Texas	113,195	5,718	5.1	7,599	6.7	17,655	15.6	71,225	62.9	0	0.0	10,998	9.7
Utah	11,367	3,223	28.4	465	4.1	1,641	14.4	5,879	51.7	0	0.0	159	1.4
Vermont*	19,100	5,718	29.9	DS	DS	DS	DS	12,727	66.6	0	0.0	DS	DS
Virginia	50,330	15,332	30.5	1,549	3.1	3,488	6.9	29,386	58.4	0	0.0	575	1.1
Washington*	137,886	4,750	3.4	6,012	4.4	1,174	0.9	29,404	21.3	96,240	69.8	306	0.2
West Virginia*	45,593	6,508	14.3	744	1.6	1,495	3.3	11,330	24.9	24,420	53.6	1,096	2.4
Wisconsin	79,303	49,277	62.1	1,678	2.1	3,028	3.8	25,320	31.9	0	0.0	0	0.0
Wyoming	4,143	1,409	34.0	570	13.8	509	12.3	1,655	39.9	0	0.0	0	0.0

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims.

In New Mexico and North Dakota, the number of beneficiaries in VIII Group adult is very low even though both states expanded Medicaid. New Mexico is reporting virtually all of its VIII Group adult beneficiaries as having restricted benefits, so they are not included in this SUD Data Book. North Dakota is not reporting VIII Group adult beneficiaries in T-MSIS.

The percentages in this table may not sum to 100 within a state because of the polysubstance category and because beneficiaries can be treated for more than one SUD.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Table A.5. Number and percentage of Medicaid beneficiaries treated for a SUD who were in the ABD enrollment category in 2017, by age group

State	Total number of Medicaid beneficiaries in the ABD category	Children (ages 12-18) in ABD category			Adults (ages 19-64) in ABD category			Aged (ages 65+ in ABD category)		
		Total number	Number with SUD	Percent	Total number	Number with SUD	Percent	Total number	Number with SUD	Percent
United States	13,019,040	748,250	13,668	1.8	6,840,038	1,054,215	15.4	5,430,752	231,051	4.3
Alabama	221,702	13,969	319	2.3	144,003	27,439	19.1	63,730	3,782	5.9
Alaska*	27,267	1,258	37	2.9	14,475	2,583	17.8	11,534	751	6.5
Arizona*	242,443	15,123	243	1.6	116,104	17,614	15.2	111,216	4,625	4.2
Arkansas*	187,568	21,646	229	1.1	120,980	6,642	5.5	44,942	924	2.1
California*	2,179,699	67,366	686	1.0	848,090	93,813	11.1	1,264,243	33,050	2.6
Colorado*	81,052	4,899	57	1.2	53,899	7,775	14.4	22,254	1,324	5.9
Connecticut*	95,900	444	DS	DS	44,682	10,225	22.9	50,774	3,682	7.3
Delaware*	22,298	2,595	43	1.7	13,193	1,985	15.0	6,510	238	3.7
District of Columbia*	46,741	2,446	30	1.2	27,785	5,706	20.5	16,510	1,410	8.5
Florida	769,256	68,215	1,024	1.5	368,978	57,132	15.5	332,063	11,161	3.4
Georgia	334,024	25,819	314	1.2	210,832	31,831	15.1	97,373	5,985	6.1
Hawaii*	51,277	878	27	3.1	21,100	3,386	16.0	29,299	1,546	5.3
Idaho	54,389	4,412	71	1.6	34,071	4,580	13.4	15,906	1,065	6.7
Illinois*	30,314	244	DS	DS	12,511	926	7.4	17,559	594	3.4
Indiana*	250,468	15,138	176	1.2	159,090	18,592	11.7	76,240	4,570	6.0
Iowa*	112,170	7,137	272	3.8	68,846	10,469	15.2	36,187	2,202	6.1
Kansas	54,606	6,460	239	3.7	36,499	6,436	17.6	11,647	998	8.6
Kentucky*	223,255	15,861	429	2.7	149,789	27,076	18.1	57,605	4,100	7.1
Louisiana*	213,818	19,078	311	1.6	135,095	19,694	14.6	59,645	3,651	6.1
Maine	62,105	3,397	84	2.5	43,284	9,417	21.8	15,424	1,164	7.5
Maryland*	168,061	11,278	263	2.3	98,853	21,792	22.0	57,930	3,588	6.2
Massachusetts*	462,747	27,516	375	1.4	274,406	66,797	24.3	160,825	14,320	8.9
Michigan*	455,433	22,647	335	1.5	290,297	41,547	14.3	142,489	3,939	2.8
Minnesota*	186,824	8,371	227	2.7	103,756	19,557	18.8	74,697	6,725	9.0
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	43,898	3,607	78	2.2	25,049	4,313	17.2	15,242	1,086	7.1
New Hampshire*	21,737	367	DS	DS	13,154	2,582	19.6	8,216	395	4.8

Table A.5. (continued)

State	Total number of Medicaid beneficiaries in the ABD category	Children (ages 12-18) in ABD category			Adults (ages 19-64) in ABD category			Aged (ages 65+ in ABD category)		
		Total number	Number with SUD	Percent	Total number	Number with SUD	Percent	Total number	Number with SUD	Percent
New Jersey*	299,823	18,031	362	2.0	128,587	20,227	15.7	153,205	5,892	3.8
New Mexico*	74,100	5,438	269	4.9	43,622	8,157	18.7	25,040	1,590	6.3
New York*	1,130,221	56,635	1,084	1.9	483,426	90,593	18.7	590,160	29,349	5.0
North Carolina	425,216	24,766	456	1.8	271,324	50,817	18.7	129,126	10,342	8.0
North Dakota*	7,978	241	DS	DS	4,247	669	15.8	3,490	244	7.0
Ohio*	445,689	25,645	850	3.3	270,810	61,721	22.8	149,234	9,809	6.6
Oklahoma	230,897	2,337	32	1.4	173,175	28,921	16.7	55,385	5,304	9.6
Oregon*	42,453	915	21	2.3	22,736	3,010	13.2	18,802	1,313	7.0
Pennsylvania*	590,498	70,301	1,445	2.1	336,109	57,544	17.1	184,088	9,678	5.3
Puerto Rico*	730,491	972	DS	DS	207,994	1,984	1.0	521,525	2,126	0.4
Rhode Island*	66,985	3,164	44	1.4	45,505	4,497	9.9	18,316	606	3.3
South Carolina	224,750	9,840	271	2.8	137,147	16,380	11.9	77,763	2,891	3.7
South Dakota	23,755	1,577	55	3.5	13,553	1,921	14.2	8,625	571	6.6
Tennessee	294,766	26,718	299	1.1	199,166	32,156	16.1	68,882	5,855	8.5
Texas	829,348	83,425	1,514	1.8	445,544	58,789	13.2	300,379	10,922	3.6
Utah	61,869	3,733	249	6.7	39,909	4,701	11.8	18,227	929	5.1
Vermont*	79,446	907	31	3.4	67,353	11,814	17.5	11,186	882	7.9
Virginia	313,039	13,524	175	1.3	180,127	24,665	13.7	119,388	4,546	3.8
Washington*	214,527	9,967	271	2.7	126,770	23,859	18.8	77,790	5,274	6.8
West Virginia*	101,957	4,426	56	1.3	69,141	9,151	13.2	28,390	2,123	7.5
Wisconsin	218,772	14,645	293	2.0	136,574	21,433	15.7	67,553	3,594	5.3
Wyoming	13,408	872	22	2.5	8,398	1,297	15.4	4,138	336	8.1

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Table A.6. Distribution of Medicaid beneficiaries treated for a SUD who were in the ABD enrollment category in 2017, by age group

State	Total number of Medicaid beneficiaries with SUD in the ABD category	Children (ages 12-18) in ABD category		Adults (ages 19-64) in ABD category		Aged (ages 65+) in ABD category	
		Number	Percent	Number	Percent	Number	Percent
United States	1,298,951	13,668	1.1	1,052,231	81.0	226,136	17.4
Alabama	31,540	319	1.0	27,439	87.0	3,782	12.0
Alaska*	3,371	37	1.1	2,583	76.6	751	22.3
Arizona*	22,482	243	1.1	17,614	78.3	4,625	20.6
Arkansas*	7,795	229	2.9	6,642	85.2	924	11.9
California*	127,549	686	0.5	93,813	73.6	33,050	25.9
Colorado*	9,156	57	0.6	7,775	84.9	1,324	14.5
Connecticut*	13,909	DS	DS	10,225	73.5	DS	DS
Delaware*	2,266	43	1.9	1,985	87.6	238	10.5
District of Columbia*	7,146	30	0.4	5,706	79.8	1,410	19.7
Florida	69,317	1,024	1.5	57,132	82.4	11,161	16.1
Georgia	38,130	314	0.8	31,831	83.5	5,985	15.7
Hawaii*	4,959	27	0.5	3,386	68.3	1,546	31.2
Idaho	5,716	71	1.2	4,580	80.1	1,065	18.6
Illinois*	1,523	DS	DS	926	60.8	DS	DS
Indiana*	23,338	176	0.8	18,592	79.7	4,570	19.6
Iowa*	12,943	272	2.1	10,469	80.9	2,202	17.0
Kansas	7,673	239	3.1	6,436	83.9	998	13.0
Kentucky*	31,605	429	1.4	27,076	85.7	4,100	13.0
Louisiana*	23,656	311	1.3	19,694	83.3	3,651	15.4
Maine	10,665	84	0.8	9,417	88.3	1,164	10.9
Maryland*	25,643	263	1.0	21,792	85.0	3,588	14.0
Massachusetts*	81,492	375	0.5	66,797	82.0	14,320	17.6
Michigan*	45,821	335	0.7	41,547	90.7	3,939	8.6
Minnesota*	26,509	227	0.9	19,557	73.8	6,725	25.4
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	5,477	78	1.4	4,313	78.7	1,086	19.8
New Hampshire*	2,982	DS	DS	2,582	86.6	DS	DS

Table A.6. (continued)

State	Total number of Medicaid beneficiaries with SUD in the ABD category	Children (ages 12-18) in ABD category		Adults (ages 19-64) in ABD category		Aged (ages 65+) in ABD category	
		Number	Percent	Number	Percent	Number	Percent
New Jersey*	26,481	362	1.4	20,227	76.4	5,892	22.2
New Mexico*	10,016	269	2.7	8,157	81.4	1,590	15.9
New York*	121,026	1,084	0.9	90,593	74.9	29,349	24.3
North Carolina	61,615	456	0.7	50,817	82.5	10,342	16.8
North Dakota*	915	DS	DS	669	73.1	DS	DS
Ohio*	72,380	850	1.2	61,721	85.3	9,809	13.6
Oklahoma	34,257	32	0.1	28,921	84.4	5,304	15.5
Oregon*	4,344	21	0.5	3,010	69.3	1,313	30.2
Pennsylvania*	68,667	1,445	2.1	57,544	83.8	9,678	14.1
Puerto Rico*	4,115	DS	DS	DS	DS	2,126	51.7
Rhode Island*	5,147	44	0.9	4,497	87.4	606	11.8
South Carolina	19,542	271	1.4	16,380	83.8	2,891	14.8
South Dakota	2,547	55	2.2	1,921	75.4	571	22.4
Tennessee	38,310	299	0.8	32,156	83.9	5,855	15.3
Texas	71,225	1,514	2.1	58,789	82.5	10,922	15.3
Utah	5,879	249	4.2	4,701	80.0	929	15.8
Vermont*	12,727	31	0.2	11,814	92.8	882	6.9
Virginia	29,386	175	0.6	24,665	83.9	4,546	15.5
Washington*	29,404	271	0.9	23,859	81.1	5,274	17.9
West Virginia*	11,330	56	0.5	9,151	80.8	2,123	18.7
Wisconsin	25,320	293	1.2	21,433	84.6	3,594	14.2
Wyoming	1,655	22	1.3	1,297	78.4	336	20.3

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. Appendix B includes detailed information on how we identified SUD treatment.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

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Table A.7. Number and percentage of full-benefit, dually eligible Medicaid beneficiaries who were treated for a SUD in 2017

State	Total Number of Medicaid Beneficiaries	Full-benefit Duals		
		Total Number	Number with a SUD	Percent
United States	53,462,361	8,445,048	602,992	7.1
Alabama	512,074	95,595	10,486	11.0
Alaska*	158,199	20,065	2,090	10.4
Arizona*	1,512,837	185,672	13,875	7.5
Arkansas*	460,867	2,115	20	0.9
California*	10,050,069	1,636,730	61,409	3.8
Colorado*	1,052,116	27,047	2,499	9.2
Connecticut*	713,934	76,256	8,614	11.3
Delaware*	179,030	14,892	942	6.3
District of Columbia*	200,116	24,627	2,966	12.0
Florida	2,410,115	523,780	30,063	5.7
Georgia	1,110,320	156,911	12,582	8.0
Hawaii*	307,278	42,899	3,296	7.7
Idaho	161,110	DS	DS	DS
Illinois*	311,088	25,948	1,400	5.4
Indiana*	1,097,727	165,280	14,742	8.9
Iowa*	627,465	70,175	7,412	10.6
Kansas	249,801	46,294	4,812	10.4
Kentucky*	1,115,633	125,619	12,586	10.0
Louisiana*	594,525	112,395	9,460	8.4
Maine	169,150	37,048	5,364	14.5
Maryland*	980,899	94,967	9,894	10.4
Massachusetts*	1,429,779	355,632	58,403	16.4
Michigan*	2,050,490	290,124	14,670	5.1
Minnesota*	905,247	140,547	18,251	13.0
Mississippi	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ
Nevada*	528,501	36,230	3,506	9.7
New Hampshire*	165,862	22,324	2,125	9.5
New Jersey*	1,358,106	236,380	16,922	7.2
New Mexico*	255,223	40,735	3,785	9.3
New York*	4,814,854	850,327	69,715	8.2
North Carolina	1,106,940	257,905	29,597	11.5
North Dakota*	35,353	5,804	605	10.4
Ohio*	2,459,666	245,094	23,629	9.6
Oklahoma	438,682	102,523	12,767	12.5
Oregon*	844,280	72,137	6,797	9.4
Pennsylvania*	2,336,316	302,899	23,109	7.6
Puerto Rico*	2,548,531	684,148	3,342	0.5
Rhode Island*	267,077	37,330	2,413	6.5
South Carolina	620,945	152,606	8,799	5.8
South Dakota	71,413	14,946	1,311	8.8
Tennessee	1,066,003	153,546	17,577	11.4
Texas	2,500,164	418,642	22,382	5.3

Table A.7. (continued)

State	Total Number of Medicaid Beneficiaries	Full-benefit Duals		
		Total Number	Number with a SUD	Percent
Utah	198,617	31,073	2,455	7.9
Vermont*	143,771	21,777	3,033	13.9
Virginia	671,301	144,613	9,827	6.8
Washington*	1,442,574	131,211	13,226	10.1
West Virginia*	459,782	57,156	5,534	9.7
Wisconsin	724,820	147,704	13,930	9.4
Wyoming	43,711	7,320	770	10.5

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.
To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. Appendix B includes detailed information on how we identified SUD treatment.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Table A.8. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017 who were full-benefit and dually eligible

State	Total Number of Medicaid Beneficiaries with SUD	Full-benefit dually eligible	
		Number	Percent
United States	4,084,089	602,992	14.8
Alabama	51,300	10,486	20.4
Alaska*	18,048	2,090	11.6
Arizona*	108,967	13,875	12.7
Arkansas*	12,265	20	0.2
California*	422,080	61,409	14.5
Colorado*	67,997	2,499	3.7
Connecticut*	87,004	8,614	9.9
Delaware*	18,528	942	5.1
District of Columbia*	15,642	2,966	19.0
Florida	136,441	30,063	22.0
Georgia	63,803	12,582	19.7
Hawaii*	18,200	3,296	18.1
Idaho	10,416	0	0.0
Illinois*	15,377	1,400	9.1
Indiana*	94,721	14,742	15.6
Iowa*	51,123	7,412	14.5
Kansas	20,250	4,812	23.8
Kentucky*	137,127	12,586	9.2
Louisiana*	39,945	9,460	23.7
Maine	20,830	5,364	25.8
Maryland*	117,863	9,894	8.4
Massachusetts*	180,056	58,403	32.4
Michigan*	190,471	14,670	7.7
Minnesota*	100,405	18,251	18.2
Mississippi	DQ	DQ	DQ
Missouri	DQ	DQ	DQ
Montana*	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ
Nevada*	41,400	3,506	8.5
New Hampshire*	13,430	2,125	15.8
New Jersey*	81,928	16,922	20.7
New Mexico*	19,153	3,785	19.8
New York*	412,492	69,715	16.9
North Carolina	109,346	29,597	27.1
North Dakota*	3,072	605	19.7
Ohio*	362,088	23,629	6.5
Oklahoma	42,095	12,767	30.3
Oregon*	90,062	6,797	7.5
Pennsylvania*	278,008	23,109	8.3
Puerto Rico*	15,227	3,342	21.9
Rhode Island*	17,881	2,413	13.5
South Carolina	42,561	8,799	20.7
South Dakota	5,875	1,311	22.3
Tennessee	89,695	17,577	19.6
Texas	113,195	22,382	19.8

Table A.8. (continued)

State	Total Number of Medicaid Beneficiaries with SUD	Full-benefit dually eligible	
		Number	Percent
Utah	11,367	2,455	21.6
Vermont*	19,100	3,033	15.9
Virginia	50,330	9,827	19.5
Washington*	137,886	13,226	9.6
West Virginia*	45,593	5,534	12.1
Wisconsin	79,303	13,930	17.6
Wyoming	4,143	770	18.6

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.
To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. Appendix B includes detailed information on how we identified SUD treatment.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

B. SUD services provided by state Medicaid programs

Section 1015(a)(2)(B) of the SUPPORT Act requires the SUD Data Book to provide a list of the SUD treatment services by each major type of service for which beneficiaries in each state received at least one service under the state Medicaid plan or a waiver of such plan.²⁸ Table B.1 provides information on the types of services available to Medicaid beneficiaries generally (and reported on in this SUD Data Book), and Table B.2 provides information on the number of states that do not provide the services. These tables and the analysis that follows are based on information available in the T-MSIS claims records that states report to CMS, and represent services provided to Medicaid beneficiaries. This analysis does not necessarily represent what is included in a state's Medicaid plan, its 1115 waiver, or its Medicaid and CHIP Program (MACPro) data.

Most states have at least one Medicaid beneficiary who received each type of service. The exceptions appear to be peer support and partial hospitalization, which fewer states provide to Medicaid beneficiaries compared to other categories of SUD treatment services (Table B.2).

Table B.1. SUD treatment services used by Medicaid beneficiaries

SUD treatment services	Description
Case management	Offers beneficiaries a single point of contact with the health and social service systems. Promotes continuity of care and provides support and advocacy for beneficiaries.
Community support	Activities and services that take place in the community, such as halfway house services or mental health clubhouse services.
Consultation	A procedure in which a patient meets with a provider, and the provider reviews the patient's medical history, examines the patient, and recommends a course of treatment.
Counseling	Therapeutic interventions that are intended to improve a beneficiary's sense of well-being, to alleviate feelings of distress, and to resolve crises.
Detoxification	A set of services designed to manage acute symptoms and withdrawal following intoxication or dependence on substances. It can include medication and can be a precursor to continued treatment.
Emergency services	Services delivered in an emergency department.
Inpatient care	Services delivered in an inpatient hospital setting.
Intervention services	Crisis intervention services typically offered to patients in acute crisis.
MAT	Treatment that consists of medications intended to reduce the symptoms of a SUD; often augmented with counseling or other behavioral therapeutic interventions.
Medication management	Medication training, support, and management services provided by a prescriber to a patient to facilitate adherence to medication.
Observation care	An observation status in a hospital setting at which point a provider decides whether an inpatient admission is necessary.
Partial hospitalization	A structured program of outpatient services that are delivered to a beneficiary in an inpatient setting during the day and do not require an overnight stay.
Peer supports	Nonclinical assistance provided by individuals who are credentialed by states and are self-identified individuals in recovery from mental illness and/or SUD.
Physician services	Outpatient services—typically evaluation and management—provided by physicians.
Pharmacotherapy	Pharmacotherapy for SUD that cannot be specifically categorized as MAT.
Screening and assessment	Using validated instruments to identify individuals with a SUD.
Treatment program	Residential or intensive outpatient treatment for a SUD.
Other services	These include services without sufficient detail to be categorized and services that do not fit into any of the other categories.

²⁸ We use the statutory language “or a waiver of such plan” here and in Appendix Table F.1, and we interpret this language as intended to refer to section 1115 demonstration projects that do not necessarily involve the use of “waivers.” See above discussion of section 1115 demonstrations, and the authority under section 1115(a)(2) to provide FFP in payments for which FFP would otherwise not be allowed under the IMD exclusion.

Table B.2. SUD treatment service types *not* billed, by state

Service	Number of states that <i>do not</i> cover the service	States that <i>do not</i> cover the service
Case management	6	Alabama, Delaware*, Idaho, Louisiana*, Puerto Rico*, South Dakota
Community support	0	—
Consultation	1	North Dakota*
Counseling	0	—
Detoxification	1	Puerto Rico*
Emergency services	0	—
Inpatient care	0	—
Intervention services	0	—
MAT	0	—
Medication management	2	Maryland* and Puerto Rico*
Observation care	0	—
Partial hospitalization	15	Alaska*, Colorado*, District of Columbia*, Idaho, Illinois*, Kansas, Louisiana*, Maine, New Hampshire*, Oregon*, South Carolina, South Dakota, Vermont*, Washington*, Wyoming
Peer support	18	Alabama, Arkansas*, California*, Connecticut*, Idaho, Illinois*, Maine, Maryland*, New Jersey*, New Mexico*, North Dakota*, Oklahoma, Puerto Rico*, South Dakota, Vermont*, Virginia, West Virginia*, Wisconsin
Physician services	0	—
Pharmacotherapy	0	—
Screening and assessment	0	—
Treatment program	2	Idaho, Illinois*
Other services	0	—

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: "Other services" are services without sufficient detail to be categorized and services that do not fit into any of the other categories.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

C. SUD services provided by state Medicaid programs, by service type and setting

Section 1015(a)(2)(C) of the SUPPORT Act requires the SUD Data Book to provide the number and percentage of individuals with a SUD diagnosis who received SUD treatment services under either the Medicaid plan or a waiver program by major type of service identified in Section B above and by major setting type, such as outpatient, inpatient, residential, and other home-based and community-based settings. Table C.1 provides the number and percentage of Medicaid beneficiaries treated for a SUD in 2017 by service type, and Table C.2 provides the same information by service setting. We present these tables separately to avoid issues related to examining cross-tabulations of multiple variables simultaneously.²⁹

Table C.1. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by service type

- Acute care services were the most common SUD treatment service received by Medicaid beneficiaries. Nearly half of these beneficiaries (47 percent) received emergency services (the most common SUD treatment service), followed by inpatient care (41 percent). The share of beneficiaries who received acute care services for a SUD varied widely across states, from 68 percent in Alabama to 9 percent in Puerto Rico for emergency services, and from 62 percent in North Dakota to 18 percent in Maine for inpatient care.
- About one-fourth of the beneficiaries treated for a SUD received MAT (23 percent) in 2017, although there was significant variation across states. More than 30 percent of the beneficiaries in 10 states received MAT services, whereas less than 20 percent of the beneficiaries in 22 states received MAT services.

Table C.2. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by service setting

- Approximately three-quarters (75 percent) of the Medicaid beneficiaries treated for a SUD received at least one service in an outpatient setting in 2017, and 43 percent received at least one service in an inpatient setting. A much smaller percentage of beneficiaries treated for a SUD received services in a residential setting (4 percent) or in a home- or community-based setting (less than 2 percent).³⁰
- Florida, Illinois, and South Dakota had the largest share of Medicaid beneficiaries with a SUD who received SUD treatment services in an inpatient setting (approximately two-thirds of the beneficiaries in each state). Maine and Rhode Island had the smallest share of beneficiaries with a SUD who received SUD treatment services in an inpatient setting (19 and 22 percent, respectively). Utah, Louisiana, and Delaware had the largest share of beneficiaries with a SUD who received SUD treatment services in a residential setting (19, 16, and 15 percent, respectively).

²⁹ As noted, because the data in these tables are based on T-MSIS claims reported by the states and represent services provided, they do not necessarily represent what is included in a state's Medicaid plan, 1115 waiver, or MACPro information.

³⁰ For 11 percent of the beneficiaries treated for SUD in 2017, there was not enough information on their claims record to identify the setting. The prevalence of beneficiaries for which the SUD treatment setting was unknown was particularly high in Arkansas, Colorado, and Michigan.

Table C.1.i. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by service type

State	Total number of Medicaid beneficiaries with a SUD	Case management		Community support		Consultation		Counseling		Detoxification	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	4,084,089	185,050	4.5	70,447	1.7	246,794	6.0	990,714	24.3	148,643	3.6
Alabama	51,300	0	0.0	251	0.5	4,320	8.4	5,448	10.6	1,379	2.7
Alaska*	18,048	1,489	8.3	3,648	20.2	426	2.4	2,501	13.9	682	3.8
Arizona*	108,967	40,963	37.6	2,611	2.4	8,418	7.7	31,451	28.9	3,508	3.2
Arkansas*	12,265	67	0.5	600	4.9	750	6.1	1,775	14.5	104	0.8
California*	422,080	10,458	2.5	3,862	0.9	36,070	8.5	81,550	19.3	5,947	1.4
Colorado*	67,997	1,021	1.5	506	0.7	68	0.1	6,754	9.9	643	0.9
Connecticut*	87,004	351	0.4	277	0.3	18,192	20.9	25,076	28.8	2,424	2.8
Delaware*	18,528	0	0.0	87	0.5	146	0.8	6,891	37.2	984	5.3
District of Columbia*	15,642	313	2.0	48	0.3	1,800	11.5	2,492	15.9	432	2.8
Florida	136,441	865	0.6	10,395	7.6	11,692	8.6	10,832	7.9	2,249	1.6
Georgia	63,803	878	1.4	2,033	3.2	1,477	2.3	7,239	11.3	1,314	2.1
Hawaii*	18,200	65	0.4	107	0.6	433	2.4	3,564	19.6	35	0.2
Idaho	10,416	0	0.0	DS	DS	1,167	11.2	118	1.1	83	0.8
Illinois*	15,377	130	0.8	110	0.7	2,515	16.4	1,199	7.8	666	4.3
Indiana*	94,721	4,325	4.6	47	0.0	960	1.0	22,958	24.2	5,567	5.9
Iowa*	51,123	270	0.5	781	1.5	4,792	9.4	13,074	25.6	1,107	2.2
Kansas	20,250	560	2.8	343	1.7	DS	DS	4,274	21.1	184	0.9
Kentucky*	137,127	7,206	5.3	715	0.5	4,388	3.2	37,000	27.0	2,418	1.8
Louisiana*	39,945	0	0.0	660	1.7	1,954	4.9	4,478	11.2	813	2.0
Maine	20,830	166	0.8	335	1.6	2,741	13.2	6,486	31.1	202	1.0
Maryland*	117,863	DS	DS	57	0.0	5,282	4.5	48,499	41.1	3,405	2.9
Massachusetts*	180,056	35	0.0	7,807	4.3	11,183	6.2	46,294	25.7	13,425	7.5
Michigan*	190,471	10,684	5.6	6,767	3.6	5,596	2.9	56,102	29.5	11,019	5.8
Minnesota*	100,405	1,717	1.7	1,615	1.6	3,523	3.5	14,459	14.4	2,061	2.1
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	690	1.7	162	0.4	966	2.3	4,746	11.5	1,736	4.2
New Hampshire*	13,430	859	6.4	516	3.8	1,828	13.6	3,274	24.4	609	4.5

Table C.1.i. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Case management		Community support		Consultation		Counseling		Detoxification	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	81,928	1,152	1.4	602	0.7	3,385	4.1	23,594	28.8	5,596	6.8
New Mexico*	19,153	86	0.4	569	3.0	773	4.0	4,901	25.6	194	1.0
New York*	412,492	34	0.0	271	0.1	4,534	1.1	110,895	26.9	19,712	4.8
North Carolina	109,346	14	0.0	927	0.8	7,242	6.6	21,822	20.0	929	0.8
North Dakota*	3,072	193	6.3	15	0.5	0	0.0	605	19.7	17	0.6
Ohio*	362,088	60,818	16.8	620	0.2	36,856	10.2	122,959	34.0	12,734	3.5
Oklahoma	42,095	2,541	6.0	2,563	6.1	1,247	3.0	7,107	16.9	318	0.8
Oregon*	90,062	9,602	10.7	582	0.6	56	0.1	39,068	43.4	5,630	6.3
Pennsylvania*	278,008	6,660	2.4	5,678	2.0	34,780	12.5	76,364	27.5	20,576	7.4
Puerto Rico*	15,227	0	0.0	209	1.4	1,026	6.7	4,557	29.9	0	0.0
Rhode Island*	17,881	1,410	7.9	79	0.4	470	2.6	7,782	43.5	525	2.9
South Carolina	42,561	663	1.6	866	2.0	1,506	3.5	8,151	19.2	874	2.1
South Dakota	5,875	0	0.0	109	1.9	72	1.2	712	12.1	16	0.3
Tennessee	89,695	1,524	1.7	261	0.3	1,332	1.5	15,046	16.8	3,000	3.3
Texas	113,195	3,111	2.7	2,275	2.0	4,358	3.8	12,711	11.2	2,222	2.0
Utah	11,367	148	1.3	703	6.2	105	0.9	1,319	11.6	311	2.7
Vermont*	19,100	1,487	7.8	876	4.6	308	1.6	5,564	29.1	1,153	6.0
Virginia	50,330	355	0.7	136	0.3	197	0.4	6,005	11.9	786	1.6
Washington*	137,886	9,769	7.1	6,595	4.8	9,579	6.9	40,732	29.5	6,547	4.7
West Virginia*	45,593	1,494	3.3	82	0.2	3,676	8.1	16,884	37.0	561	1.2
Wisconsin	79,303	507	0.6	1,323	1.7	4,234	5.3	14,748	18.6	3,930	5.0
Wyoming	4,143	370	8.9	766	18.5	371	9.0	654	15.8	16	0.4

Table C.1.ii. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by service type

State	Total number of Medicaid beneficiaries with a SUD	Emergency services		Inpatient care		Intervention		MAT		Medication management		Observation care		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	4,084,089	1,914,223	46.9	1,688,293	41.3	164,150	4.0	951,891	23.3	30,584	0.7	200,889	4.9	215,824	5.3
Alabama	51,300	34,798	67.8	25,970	50.6	325	0.6	6,483	12.6	1,276	2.5	1,535	3.0	2,448	4.8
Alaska*	18,048	7,469	41.4	7,107	39.4	856	4.7	4,091	22.7	426	2.4	798	4.4	4,694	26.0
Arizona*	108,967	49,461	45.4	48,745	44.7	13,254	12.2	19,388	17.8	6,763	6.2	9,074	8.3	23,663	21.7
Arkansas*	12,265	5,444	44.4	6,876	56.1	162	1.3	956	7.8	DS	DS	494	4.0	181	1.5
California*	422,080	217,364	51.5	182,171	43.2	5,533	1.3	94,906	22.5	2,739	0.6	9,421	2.2	4,221	1.0
Colorado*	67,997	41,442	60.9	28,498	41.9	2,125	3.1	14,470	21.3	DS	DS	6,671	9.8	904	1.3
Connecticut*	87,004	30,513	35.1	26,037	29.9	1,512	1.7	33,107	38.1	21	0.0	3,561	4.1	2,882	3.3
Delaware*	18,528	7,731	41.7	7,877	42.5	379	2.0	7,083	38.2	20	0.1	737	4.0	679	3.7
District of Columbia*	15,642	10,222	65.3	8,155	52.1	493	3.2	2,810	18.0	52	0.3	847	5.4	516	3.3
Florida	136,441	82,423	60.4	83,088	60.9	1,836	1.3	19,576	14.3	1,578	1.2	13,325	9.8	9,977	7.3
Georgia	63,803	32,762	51.3	38,574	60.5	563	0.9	4,896	7.7	160	0.3	3,764	5.9	4,265	6.7
Hawaii*	18,200	9,972	54.8	8,078	44.4	233	1.3	2,704	14.9	DS	DS	1,313	7.2	61	0.3
Idaho	10,416	3,166	30.4	4,789	46.0	48	0.5	1,523	14.6	12	0.1	147	1.4	96	0.9
Illinois*	15,377	4,289	27.9	9,447	61.4	260	1.7	1,626	10.6	53	0.3	686	4.5	248	1.6
Indiana*	94,721	28,799	30.4	48,045	50.7	1,847	1.9	26,916	28.4	1,508	1.6	4,575	4.8	3,955	4.2
Iowa*	51,123	21,780	42.6	24,217	47.4	322	0.6	5,866	11.5	14	0.0	2,364	4.6	818	1.6
Kansas	20,250	4,469	22.1	8,699	43.0	595	2.9	2,534	12.5	DS	DS	614	3.0	434	2.1
Kentucky*	137,127	53,435	39.0	52,662	38.4	3,971	2.9	42,430	30.9	41	0.0	3,118	2.3	5,157	3.8
Louisiana*	39,945	22,686	56.8	19,683	49.3	231	0.6	5,369	13.4	29	0.1	1,751	4.4	458	1.1
Maine	20,830	6,359	30.5	3,763	18.1	793	3.8	8,721	41.9	1,784	8.6	470	2.3	226	1.1
Maryland*	117,863	50,437	42.8	38,605	32.8	1,103	0.9	50,865	43.2	0	0.0	9,515	8.1	9,142	7.8
Massachusetts*	180,056	79,799	44.3	66,069	36.7	15,508	8.6	69,402	38.5	391	0.2	11,773	6.5	3,547	2.0
Michigan*	190,471	91,519	48.0	68,033	35.7	10,167	5.3	40,499	21.3	468	0.2	7,872	4.1	7,273	3.8
Minnesota*	100,405	43,878	43.7	36,251	36.1	2,387	2.4	21,748	21.7	99	0.1	5,021	5.0	6,183	6.2
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	10,065	24.3	12,756	30.8	745	1.8	5,262	12.7	564	1.4	996	2.4	2,295	5.5
New Hampshire*	13,430	4,577	34.1	3,761	28.0	661	4.9	5,963	44.4	90	0.7	547	4.1	89	0.7

Table C.1.ii. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Emergency services		Inpatient care		Intervention		MAT		Medication management		Observation care		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	81,928	40,327	49.2	32,860	40.1	1,289	1.6	20,087	24.5	204	0.2	5,233	6.4	1,656	2.0
New Mexico*	19,153	7,368	38.5	7,600	39.7	246	1.3	4,661	24.3	227	1.2	749	3.9	2,490	13.0
New York*	412,492	184,903	44.8	172,159	41.7	16,430	4.0	84,147	20.4	3,344	0.8	13,409	3.3	3,121	0.8
North Carolina	109,346	56,780	51.9	55,364	50.6	3,169	2.9	14,974	13.7	DS	DS	7,231	6.6	2,452	2.2
North Dakota*	3,072	1,093	35.6	1,896	61.7	24	0.8	172	5.6	DS	DS	189	6.2	87	2.8
Ohio*	362,088	209,279	57.8	126,578	35.0	14,552	4.0	87,496	24.2	71	0.0	25,614	7.1	45,238	12.5
Oklahoma	42,095	15,364	36.5	22,148	52.6	353	0.8	4,830	11.5	107	0.3	1,102	2.6	3,205	7.6
Oregon*	90,062	37,907	42.1	24,612	27.3	3,121	3.5	22,000	24.4	553	0.6	2,546	2.8	6,935	7.7
Pennsylvania*	278,008	120,552	43.4	106,937	38.5	5,216	1.9	76,827	27.6	5,764	2.1	12,236	4.4	8,485	3.1
Puerto Rico*	15,227	1,297	8.5	4,427	29.1	974	6.4	3,343	22.0	0	0.0	500	3.3	52	0.3
Rhode Island*	17,881	5,733	32.1	3,782	21.2	855	4.8	9,866	55.2	DS	DS	350	2.0	1,457	8.1
South Carolina	42,561	22,972	54.0	20,967	49.3	689	1.6	4,975	11.7	29	0.1	2,060	4.8	6,670	15.7
South Dakota	5,875	2,479	42.2	3,899	66.4	30	0.5	368	6.3	DS	DS	246	4.2	100	1.7
Tennessee	89,695	37,854	42.2	43,803	48.8	2,787	3.1	11,775	13.1	452	0.5	3,988	4.4	825	0.9
Texas	113,195	60,325	53.3	66,473	58.7	1,435	1.3	13,830	12.2	1,461	1.3	9,994	8.8	5,794	5.1
Utah	11,367	3,326	29.3	3,152	27.7	DS	DS	2,424	21.3	DS	DS	81	0.7	403	3.5
Vermont*	19,100	6,458	33.8	5,653	29.6	829	4.3	9,007	47.2	18	0.1	456	2.4	292	1.5
Virginia	50,330	24,110	47.9	24,176	48.0	111	0.2	8,761	17.4	17	0.0	1,828	3.6	471	0.9
Washington*	137,886	63,605	46.1	43,279	31.4	31,585	22.9	33,952	24.6	171	0.1	4,506	3.3	27,023	19.6
West Virginia*	45,593	18,327	40.2	17,606	38.6	1,299	2.8	15,485	34.0	DS	DS	2,458	5.4	2,057	4.5
Wisconsin	79,303	37,573	47.4	31,016	39.1	13,224	16.7	23,245	29.3	11	0.0	4,936	6.2	2,134	2.7
Wyoming	4,143	1,732	41.8	1,950	47.1	23	0.6	472	11.4	67	1.6	188	4.5	465	11.2

Table C.1.iii. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by service type

State	Total number of Medicaid beneficiaries with a SUD	Partial hospitalization		Peer support		Physician services		Pharmacotherapy		Screening/ assessment		Treatment program	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	4,084,089	9,768	0.2	32,264	0.8	1,254,769	30.7	185,480	4.5	733,495	18.0	258,427	6.3
Alabama	51,300	29	0.1	0	0.0	13,683	26.7	3,323	6.5	4,239	8.3	145	0.3
Alaska*	18,048	0	0.0	83	0.5	8,623	47.8	1,616	9.0	4,670	25.9	88	0.5
Arizona*	108,967	DS	DS	12,020	11.0	28,244	25.9	4,980	4.6	35,925	33.0	6,640	6.1
Arkansas*	12,265	DS	DS	0	0.0	2,189	17.8	292	2.4	979	8.0	61	0.5
California*	422,080	DS	DS	0	0.0	93,501	22.2	20,217	4.8	20,074	4.8	11,334	2.7
Colorado*	67,997	0	0.0	DS	DS	23,405	34.4	4,264	6.3	6,057	8.9	59	0.1
Connecticut*	87,004	905	1.0	0	0.0	21,159	24.3	1,269	1.5	20,347	23.4	9,177	10.5
Delaware*	18,528	715	3.9	659	3.6	8,663	46.8	585	3.2	2,943	15.9	1,072	5.8
District of Columbia*	15,642	0	0.0	DS	DS	4,701	30.1	445	2.8	2,087	13.3	17	0.1
Florida	136,441	DS	DS	14	0.0	22,075	16.2	4,842	3.5	13,028	9.5	57	0.0
Georgia	63,803	248	0.4	229	0.4	17,222	27.0	852	1.3	7,608	11.9	272	0.4
Hawaii*	18,200	38	0.2	DS	DS	6,651	36.5	966	5.3	2,758	15.2	411	2.3
Idaho	10,416	0	0.0	0	0.0	2,756	26.5	91	0.9	584	5.6	0	0.0
Illinois*	15,377	0	0.0	0	0.0	3,007	19.6	53	0.3	1,634	10.6	0	0.0
Indiana*	94,721	371	0.4	102	0.1	28,037	29.6	2,239	2.4	17,794	18.8	1,310	1.4
Iowa*	51,123	669	1.3	51	0.1	17,376	34.0	3,617	7.1	14,395	28.2	4,109	8.0
Kansas	20,250	0	0.0	904	4.5	5,154	25.5	246	1.2	3,904	19.3	1,856	9.2
Kentucky*	137,127	110	0.1	3,505	2.6	56,415	41.1	10,446	7.6	23,962	17.5	8,122	5.9
Louisiana*	39,945	0	0.0	DS	DS	10,028	25.1	2,738	6.9	5,357	13.4	3,419	8.6
Maine	20,830	0	0.0	0	0.0	10,736	51.5	765	3.7	8,381	40.2	1,254	6.0
Maryland*	117,863	22	0.0	0	0.0	43,502	36.9	1,066	0.9	41,185	34.9	15,407	13.1
Massachusetts*	180,056	1,174	0.7	37	0.0	81,430	45.2	7,652	4.2	31,890	17.7	17,511	9.7
Michigan*	190,471	22	0.0	6,486	3.4	70,065	36.8	16,269	8.5	48,833	25.6	17,905	9.4
Minnesota*	100,405	129	0.1	54	0.1	38,716	38.6	6,056	6.0	32,433	32.3	27,619	27.5
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	DS	DS	249	0.6	5,000	12.1	1,573	3.8	4,009	9.7	574	1.4
New Hampshire*	13,430	0	0.0	50	0.4	5,480	40.8	480	3.6	2,626	19.6	1,309	9.7

Table C.1.iii. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Partial hospitalization		Peer support		Physician services		Pharmacotherapy		Screening/ assessment		Treatment program	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	81,928	1,700	2.1	0	0.0	23,804	29.1	3,354	4.1	18,512	22.6	4,223	5.2
New Mexico*	19,153	80	0.4	0	0.0	6,264	32.7	1,206	6.3	4,454	23.3	643	3.4
New York*	412,492	612	0.1	DS	DS	116,914	28.3	2,723	0.7	30,080	7.3	6,597	1.6
North Carolina	109,346	18	0.0	958	0.9	34,144	31.2	6,819	6.2	14,455	13.2	7,875	7.2
North Dakota*	3,072	35	1.1	0	0.0	872	28.4	64	2.1	512	16.7	315	10.3
Ohio*	362,088	569	0.2	DS	DS	125,547	34.7	45,023	12.4	111,994	30.9	25,535	7.1
Oklahoma	42,095	DS	DS	0	0.0	10,917	25.9	2,455	5.8	3,324	7.9	14	0.0
Oregon*	90,062	0	0.0	4,078	4.5	33,788	37.5	5,839	6.5	28,220	31.3	5,777	6.4
Pennsylvania*	278,008	251	0.1	224	0.1	78,262	28.2	1,996	0.7	53,943	19.4	53,131	19.1
Puerto Rico*	15,227	67	0.4	0	0.0	7,438	48.8	41	0.3	3,395	22.3	17	0.1
Rhode Island*	17,881	317	1.8	445	2.5	5,690	31.8	211	1.2	4,594	25.7	1,075	6.0
South Carolina	42,561	0	0.0	108	0.3	9,179	21.6	338	0.8	7,972	18.7	1,791	4.2
South Dakota	5,875	0	0.0	0	0.0	991	16.9	190	3.2	577	9.8	438	7.5
Tennessee	89,695	935	1.0	23	0.0	30,756	34.3	3,021	3.4	10,635	11.9	6,351	7.1
Texas	113,195	713	0.6	DS	DS	26,390	23.3	2,144	1.9	9,184	8.1	2,844	2.5
Utah	11,367	DS	DS	46	0.4	1,109	9.8	225	2.0	1,023	9.0	88	0.8
Vermont*	19,100	0	0.0	0	0.0	5,308	27.8	109	0.6	3,619	18.9	1,708	8.9
Virginia	50,330	20	0.0	0	0.0	10,463	20.8	1,627	3.2	2,848	5.7	291	0.6
Washington*	137,886	0	0.0	1,886	1.4	46,446	33.7	7,523	5.5	39,356	28.5	8,139	5.9
West Virginia*	45,593	19	0.0	0	0.0	22,237	48.8	2,111	4.6	10,007	21.9	637	1.4
Wisconsin	79,303	DS	DS	0	0.0	29,228	36.9	1,323	1.7	16,371	20.6	1,210	1.5
Wyoming	4,143	0	0.0	53	1.3	1,204	29.1	196	4.7	718	17.3	DS	DS

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average of the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. Appendix B includes detailed information on how we identified SUD treatment.

We determined service types on the basis of National Drug Codes, procedure codes, and revenue codes.

The sum of the percentages across service categories within each state will not be 100 because many Medicaid beneficiaries treated for a SUD received more than one treatment.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Table C.2. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by service setting

State	Total number of Medicaid beneficiaries with a SUD	Treated in an inpatient setting		Treated in an outpatient setting		Treated in a residential setting		Treated in a home-based setting		Treated in a community-based setting		Treated in an unknown setting	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	4,084,089	1,774,756	43.5	3,074,191	75.3	166,070	4.1	75,535	1.8	46,838	1.1	457,639	11.2
Alabama	51,300	26,352	51.4	39,787	77.6	1,234	2.4	509	1.0	228	0.4	69	0.1
Alaska*	18,048	7,135	39.5	14,209	78.7	1,589	8.8	260	1.4	3,565	19.8	435	2.4
Arizona*	108,967	49,905	45.8	83,584	76.7	4,433	4.1	6,891	6.3	873	0.8	27,930	25.6
Arkansas*	12,265	6,594	53.8	4,121	33.6	780	6.4	61	0.5	89	0.7	5,674	46.3
California*	422,080	183,473	43.5	298,264	70.7	35,686	8.5	2,801	0.7	2,637	0.6	59,149	14.0
Colorado*	67,997	28,633	42.1	46,856	68.9	253	0.4	293	0.4	309	0.5	35,078	51.6
Connecticut*	87,004	28,102	32.3	75,531	86.8	1,739	2.0	2,032	2.3	118	0.1	2,978	3.4
Delaware*	18,528	6,699	36.2	15,365	82.9	2,836	15.3	142	0.8	44	0.2	184	1.0
District of Columbia*	15,642	8,082	51.7	11,618	74.3	922	5.9	90	0.6	15	0.1	94	0.6
Florida	136,441	87,887	64.4	80,391	58.9	2,301	1.7	2,443	1.8	9,332	6.8	523	0.4
Georgia	63,803	39,493	61.9	39,091	61.3	970	1.5	992	1.6	1,639	2.6	1,178	1.8
Hawaii*	18,200	8,557	47.0	13,475	74.0	324	1.8	43	0.2	102	0.6	99	0.5
Idaho	10,416	5,464	52.5	7,164	68.8	275	2.6	57	0.5	DS	DS	491	4.7
Illinois*	15,377	9,972	64.9	7,287	47.4	457	3.0	68	0.4	106	0.7	2,898	18.8
Indiana*	94,721	49,449	52.2	64,859	68.5	1,538	1.6	808	0.9	45	0.0	1,288	1.4
Iowa*	51,123	24,889	48.7	38,593	75.5	2,268	4.4	419	0.8	485	0.9	588	1.2
Kansas	20,250	11,669	57.6	12,193	60.2	1,864	9.2	505	2.5	191	0.9	619	3.1
Kentucky*	137,127	54,447	39.7	111,752	81.5	7,327	5.3	888	0.6	701	0.5	1,213	0.9
Louisiana*	39,945	18,890	47.3	28,037	70.2	6,348	15.9	351	0.9	50	0.1	2,686	6.7
Maine	20,830	4,006	19.2	19,220	92.3	236	1.1	187	0.9	252	1.2	603	2.9
Maryland*	117,863	39,882	33.8	101,915	86.5	6,019	5.1	965	0.8	46	0.0	8,461	7.2
Massachusetts*	180,056	79,983	44.4	152,372	84.6	10,570	5.9	4,140	2.3	7,191	4.0	16,056	8.9
Michigan*	190,471	68,048	35.7	100,150	52.6	1,981	1.0	578	0.3	160	0.1	129,437	68.0
Minnesota*	100,405	36,641	36.5	85,110	84.8	2,357	2.3	7,496	7.5	673	0.7	6,156	6.1
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	21,461	51.8	30,331	73.3	1,256	3.0	751	1.8	78	0.2	932	2.3
New Hampshire*	13,430	3,921	29.2	11,281	84.0	1,148	8.5	434	3.2	183	1.4	1,253	9.3

Table C.2. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Treated in an inpatient setting		Treated in an outpatient setting		Treated in a residential setting		Treated in a home-based setting		Treated in a community-based setting		Treated in an unknown setting	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	81,928	36,444	44.5	62,820	76.7	1,505	1.8	2,439	3.0	562	0.7	635	0.8
New Mexico*	19,153	7,409	38.7	15,472	80.8	897	4.7	259	1.4	517	2.7	118	0.6
New York*	412,492	184,041	44.6	331,943	80.5	7,472	1.8	2,272	0.6	202	0.0	9,173	2.2
North Carolina	109,346	57,504	52.6	76,404	69.9	3,301	3.0	2,674	2.4	566	0.5	2,312	2.1
North Dakota*	3,072	1,810	58.9	1,784	58.1	302	9.8	59	1.9	DS	DS	588	19.1
Ohio*	362,088	131,318	36.3	308,936	85.3	12,812	3.5	10,028	2.8	574	0.2	42,670	11.8
Oklahoma	42,095	22,524	53.5	27,756	65.9	1,132	2.7	969	2.3	2,322	5.5	781	1.9
Oregon*	90,062	25,180	28.0	78,084	86.7	8,256	9.2	1,219	1.4	509	0.6	2,963	3.3
Pennsylvania*	278,008	112,866	40.6	208,307	74.9	3,873	1.4	11,784	4.2	629	0.2	73,539	26.5
Puerto Rico*	15,227	5,105	33.5	12,053	79.2	25	0.2	70	0.5	207	1.4	DS	DS
Rhode Island*	17,881	3,884	21.7	16,235	90.8	389	2.2	163	0.9	75	0.4	776	4.3
South Carolina	42,561	21,840	51.3	28,936	68.0	971	2.3	282	0.7	822	1.9	2,588	6.1
South Dakota	5,875	3,894	66.3	3,369	57.3	348	5.9	DS	DS	108	1.8	162	2.8
Tennessee	89,695	47,511	53.0	65,613	73.2	990	1.1	1,472	1.6	172	0.2	1,219	1.4
Texas	113,195	66,021	58.3	70,922	62.7	6,598	5.8	3,458	3.1	1,748	1.5	1,687	1.5
Utah	11,367	6,818	60.0	5,762	50.7	2,124	18.7	46	0.4	422	3.7	406	3.6
Vermont*	19,100	5,746	30.1	16,351	85.6	124	0.6	172	0.9	136	0.7	3,815	20.0
Virginia	50,330	27,750	55.1	32,635	64.8	762	1.5	240	0.5	75	0.1	202	0.4
Washington*	137,886	43,652	31.7	115,581	83.8	14,951	10.8	1,794	1.3	6,232	4.5	5,127	3.7
West Virginia*	45,593	19,746	43.3	34,199	75.0	1,266	2.8	943	2.1	19	0.0	453	1.0
Wisconsin	79,303	32,116	40.5	65,710	82.9	985	1.2	952	1.2	1,200	1.5	1,990	2.5
Wyoming	4,143	1,943	46.9	2,763	66.7	276	6.7	36	0.9	629	15.2	363	8.8

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. Appendix B includes detailed information on how we identified SUD treatment.

We defined service setting on the basis of the TAF file containing the claim; for claims from the Other Services file, we defined the setting on the basis of the claim's type of bill, place of service, procedure codes, or revenue codes. We defined a setting as "unknown" when there was not enough information on the claim to categorize the service by setting.

The sum of the percentages across service settings within each state will not be 100 because many Medicaid beneficiaries treated for a SUD received more than one treatment.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

D. Number of SUD services provided by state Medicaid programs

Section 1015(a)(2)(D) of the SUPPORT Act requires the SUD Data Book to present the number of services provided to Medicaid beneficiaries treated for a SUD. Table D.1 provides this information disaggregated by service type.³¹

Table D.1. Average number of SUD services received by Medicaid beneficiaries who received a given service in 2017, by service type

- Across the states included in the table, beneficiaries who received inpatient care for a SUD spent an average of 9 days in the inpatient facility over the course of the year, ranging from an average of 14 days in South Dakota to 4 days in Idaho. Beneficiaries who received partial hospitalization services for a SUD received an average of 17 days of these services, and beneficiaries who received observation care for a SUD received this type of care for an average of 3 days during 2017.
- Beneficiaries treated for a SUD in a treatment program spent an average of 28 days in that program. The time varied substantially across states, although the number of beneficiaries in the treatment group in some states was very small. The range was two weeks or fewer in 11 states, two weeks to a month in 20 states, and one month³² or longer in 13 states.
- Beneficiaries who received MAT services for a SUD received these services for an average of 129 days, or more than four months. The time varied substantially across states. In 12 states, beneficiaries treated for a SUD received MAT services for an average of three months or fewer; in 32 states, beneficiaries received MAT services for an average of three to six months; and in 5 states, beneficiaries received MAT services for an average of six months or more.
- Beneficiaries treated for a SUD and who received counseling services attended an average of almost 10 sessions in 2017. The number of sessions ranged from a high of 18 in Utah to a low of one session in Idaho.³³

³¹ As noted, because the data in these tables are based on T-MSIS claims reported by the states and represent services provided, they do not necessarily represent what is included in a state's Medicaid plan, 1115 waiver, or MACPro information.

³² We defined a month as 30 days.

³³ The average number of counseling claims in a month was greater than 1.0 in all states that provided this service, suggesting that states are billing individually for each counseling session rather than for a month of counseling services.

Table D.1.i. Average number of SUD services received by Medicaid beneficiaries who received a given service in 2017, by service type

State	Total number of Medicaid beneficiaries with a SUD	Consultation			Counseling			Emergency services		
		Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary
United States	4,084,089	246,794	1,095,588	4.4	990,714	9,642,525	9.7	1,914,223	4,030,429	2.1
Alabama	51,300	4,320	6,851	1.6	5,448	54,966	10.1	34,798	90,174	2.6
Alaska*	18,048	426	468	1.1	2,501	14,008	5.6	7,469	17,397	2.3
Arizona*	108,967	8,418	14,764	1.8	31,451	274,139	8.7	49,461	99,261	2.0
Arkansas*	12,265	750	1,379	1.8	1,775	9,935	5.6	5,444	9,095	1.7
California*	422,080	36,070	61,613	1.7	81,550	1,215,564	14.9	217,364	472,422	2.2
Colorado*	67,997	68	114	1.7	6,754	18,708	2.8	41,442	103,191	2.5
Connecticut*	87,004	18,192	124,282	6.8	25,076	219,177	8.7	30,513	70,721	2.3
Delaware*	18,528	146	218	1.5	6,891	79,118	11.5	7,731	16,374	2.1
District of Columbia*	15,642	1,800	5,765	3.2	2,492	26,845	10.8	10,222	24,922	2.4
Florida	136,441	11,692	53,477	4.6	10,832	19,788	1.8	82,423	165,965	2.0
Georgia	63,803	1,477	1,997	1.4	7,239	39,224	5.4	32,762	62,322	1.9
Hawaii*	18,200	433	7,089	16.4	3,564	18,152	5.1	9,972	21,628	2.2
Idaho	10,416	1,167	2,797	2.4	118	170	1.4	3,166	5,471	1.7
Illinois*	15,377	2,515	5,095	2.0	1,199	5,622	4.7	4,289	7,579	1.8
Indiana*	94,721	960	1,167	1.2	22,958	161,914	7.1	28,799	48,321	1.7
Iowa*	51,123	4,792	10,323	2.2	13,074	94,438	7.2	21,780	46,719	2.1
Kansas	20,250	DS	DS	DS	4,274	44,282	10.4	4,469	7,092	1.6
Kentucky*	137,127	4,388	5,113	1.2	37,000	292,826	7.9	53,435	104,367	2.0
Louisiana*	39,945	1,954	5,496	2.8	4,478	24,977	5.6	22,686	43,261	1.9
Maine	20,830	2,741	14,185	5.2	6,486	67,245	10.4	6,359	13,042	2.1
Maryland*	117,863	5,282	16,694	3.2	48,499	571,619	11.8	50,437	106,596	2.1
Massachusetts*	180,056	11,183	42,746	3.8	46,294	403,240	8.7	79,799	196,942	2.5
Michigan*	190,471	5,596	7,507	1.3	56,102	306,836	5.5	91,519	193,632	2.1
Minnesota*	100,405	3,523	5,170	1.5	14,459	48,112	3.3	43,878	97,541	2.2
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	966	2,760	2.9	4,746	44,897	9.5	10,065	19,287	1.9
New Hampshire*	13,430	1,828	6,821	3.7	3,274	20,244	6.2	4,577	8,615	1.9

Table D.1.i. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Consultation			Counseling			Emergency services		
		Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary
New Jersey*	81,928	3,385	6,798	2.0	23,594	146,325	6.2	40,327	77,401	1.9
New Mexico*	19,153	773	2,358	3.1	4,901	37,074	7.6	7,368	15,907	2.2
New York*	412,492	4,534	5,550	1.2	110,895	1,188,155	10.7	184,903	416,497	2.3
North Carolina	109,346	7,242	12,378	1.7	21,822	117,811	5.4	56,780	105,940	1.9
North Dakota*	3,072	0	0	.	605	4,036	6.7	1,093	1,985	1.8
Ohio*	362,088	36,856	78,715	2.1	122,959	1,685,074	13.7	209,279	471,533	2.3
Oklahoma	42,095	1,247	3,487	2.8	7,107	73,465	10.3	15,364	26,718	1.7
Oregon*	90,062	56	95	1.7	39,068	622,076	15.9	37,907	77,657	2.0
Pennsylvania*	278,008	34,780	447,792	12.9	76,364	813,807	10.7	120,552	222,464	1.8
Puerto Rico*	15,227	1,026	1,264	1.2	4,557	20,795	4.6	1,297	1,804	1.4
Rhode Island*	17,881	470	1,125	2.4	7,782	66,584	8.6	5,733	15,282	2.7
South Carolina	42,561	1,506	2,178	1.4	8,151	51,273	6.3	22,972	43,901	1.9
South Dakota	5,875	72	84	1.2	712	4,118	5.8	2,479	4,624	1.9
Tennessee	89,695	1,332	1,728	1.3	15,046	61,512	4.1	37,854	71,260	1.9
Texas	113,195	4,358	6,949	1.6	12,711	69,640	5.5	60,325	114,251	1.9
Utah	11,367	105	217	2.1	1,319	23,122	17.5	3,326	5,400	1.6
Vermont*	19,100	308	729	2.4	5,564	56,537	10.2	6,458	12,669	2.0
Virginia	50,330	197	212	1.1	6,005	26,966	4.5	24,110	44,777	1.9
Washington*	137,886	9,579	92,954	9.7	40,732	206,048	5.1	63,605	135,044	2.1
West Virginia*	45,593	3,676	20,439	5.6	16,884	196,683	11.6	18,327	30,716	1.7
Wisconsin	79,303	4,234	5,476	1.3	14,748	88,941	6.0	37,573	79,292	2.1
Wyoming	4,143	371	1,169	3.2	654	6,437	9.8	1,732	3,370	1.9

Table D.1.ii. Average number of SUD services received by Medicaid beneficiaries who received a given service in 2017, by service type

State	Inpatient care			MAT			Observation care			Partial hospitalization		
	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary
United States	1,688,293	15,309,087	9.1	951,891	12,309,275	129.3	200,889	684,463	3.4	9,768	163,769	16.8
Alabama	25,970	325,139	12.5	6,483	1,210,702	186.8	1,535	5,719	3.7	29	617	21.3
Alaska*	7,107	62,559	8.8	4,091	436,878	106.8	798	3,169	4.0	0	.	.
Arizona*	48,745	437,937	9.0	19,388	1,615,477	83.3	9,074	38,240	4.2	DS	DS	DS
Arkansas*	6,876	50,346	7.3	956	49,370	51.6	494	1,551	3.1	DS	DS	DS
California*	182,171	1,444,319	7.9	94,906	15,553,357	163.9	9,421	30,330	3.2	DS	DS	DS
Colorado*	28,498	210,822	7.4	14,470	1,206,850	83.4	6,671	26,282	3.9	0	.	.
Connecticut*	26,037	324,848	12.5	33,107	2,948,667	89.1	3,561	8,422	2.4	905	7,913	8.7
Delaware*	7,877	93,441	11.9	7,083	1,102,713	155.7	737	2,870	3.9	715	11,745	16.4
District of Columbia*	8,155	90,449	11.1	2,810	480,725	171.1	847	3,393	4.0	0	.	.
Florida	83,088	694,301	8.4	19,576	1,451,475	74.1	13,325	60,370	4.5	DS	DS	DS
Georgia	38,574	368,400	9.6	4,896	572,117	116.9	3,764	14,596	3.9	248	2,216	8.9
Hawaii*	8,078	57,746	7.1	2,704	413,147	152.8	1,313	4,732	3.6	38	379	10.0
Idaho	4,789	19,233	4.0	1,523	192,132	126.2	147	184	1.3	0	.	.
Illinois*	9,447	63,228	6.7	1,626	97,922	60.2	686	1,827	2.7	0	.	.
Indiana*	48,045	398,821	8.3	26,916	2,707,429	100.6	4,575	16,486	3.6	371	5,654	15.2
Iowa*	24,217	173,578	7.2	5,866	509,422	86.8	2,364	7,420	3.1	669	12,502	18.7
Kansas	8,699	94,629	10.9	2,534	196,963	77.7	614	1,851	3.0	0	.	.
Kentucky*	52,662	401,796	7.6	42,430	5,927,602	139.7	3,118	8,018	2.6	110	2,338	21.3
Louisiana*	19,683	167,708	8.5	5,369	694,161	129.3	1,751	7,313	4.2	0	.	.
Maine	3,763	27,851	7.4	8,721	1,829,467	209.8	470	840	1.8	0	.	.
Maryland*	38,605	340,179	8.8	50,865	4,839,198	95.1	9,515	36,795	3.9	22	195	8.9
Massachusetts*	66,069	755,227	11.4	69,402	12,545,064	180.8	11,773	26,932	2.3	1,174	9,423	8.0
Michigan*	68,033	478,647	7.0	40,499	4,837,859	119.5	7,872	24,732	3.1	22	153	7.0
Minnesota*	36,251	428,021	11.8	21,748	2,813,253	129.4	5,021	19,608	3.9	129	1,217	9.4
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	12,756	132,583	10.4	5,262	473,295	89.9	996	3,086	3.1	DS	DS	DS
New Hampshire*	3,761	26,833	7.1	5,963	821,284	137.7	547	980	1.8	0	.	.

Table D.1.ii. (continued)

State	Inpatient care			MAT			Observation care			Partial hospitalization		
	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary
New Jersey*	32,860	322,164	9.8	20,087	2,080,304	103.6	5,233	20,167	3.9	1,700	58,002	34.1
New Mexico*	7,600	51,613	6.8	4,661	922,417	197.9	749	953	1.3	80	302	3.8
New York*	172,159	2,185,283	12.7	84,147	10,224,380	121.5	13,409	52,603	3.9	612	10,958	17.9
North Carolina	55,364	442,362	8.0	14,974	1,355,091	90.5	7,231	29,731	4.1	18	189	10.5
North Dakota*	1,896	17,278	9.1	172	15,218	88.5	189	361	1.9	35	455	13.0
Ohio*	126,578	809,181	6.4	87,496	11,230,010	128.3	25,614	53,960	2.1	569	12,486	21.9
Oklahoma	22,148	220,120	9.9	4,830	514,156	106.5	1,102	3,837	3.5	DS	DS	DS
Oregon*	24,612	199,177	8.1	22,000	2,836,702	128.9	2,546	10,177	4.0	0	.	.
Pennsylvania*	106,937	1,039,712	9.7	76,827	10,818,977	140.8	12,236	36,637	3.0	251	3,718	14.8
Puerto Rico*	4,427	37,549	8.5	3,343	445,514	133.3	500	1,197	2.4	67	299	4.5
Rhode Island*	3,782	33,115	8.8	9,866	1,433,020	145.2	350	909	2.6	317	2,535	8.0
South Carolina	20,967	165,161	7.9	4,975	567,963	114.2	2,060	9,541	4.6	0	.	.
South Dakota	3,899	53,522	13.7	368	35,488	96.4	246	926	3.8	0	.	.
Tennessee	43,803	374,649	8.6	11,775	862,624	73.3	3,988	13,002	3.3	935	13,327	14.3
Texas	66,473	590,800	8.9	13,830	1,439,370	104.1	9,994	42,888	4.3	713	6,771	9.5
Utah	3,152	22,995	7.3	2,424	339,351	140.0	81	181	2.2	DS	DS	DS
Vermont*	5,653	55,881	9.9	9,007	1,965,471	218.2	456	1,967	4.3	0	.	.
Virginia	24,176	216,313	8.9	8,761	1,164,446	132.9	1,828	6,100	3.3	20	275	13.8
Washington*	43,279	412,010	9.5	33,952	4,201,106	123.7	4,506	19,143	4.2	0	.	.
West Virginia*	17,606	121,508	6.9	15,485	2,281,120	147.3	2,458	7,761	3.2	19	100	5.3
Wisconsin	31,016	252,663	8.1	23,245	2,798,161	120.4	4,936	16,438	3.3	DS	DS	DS
Wyoming	1,950	17,390	8.9	472	35,339	74.9	188	238	1.3	0	.	.

Table D.1.iii. Average number of SUD services received by Medicaid beneficiaries who received a given service in 2017, by service type

State	Physician services			Screening/assessment			Treatment program		
	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary
United States	1,254,769	4,504,059	3.6	733,495	2,120,833	2.9	258,427	7,329,538	28.4
Alabama	13,683	36,410	2.7	4,239	5,396	1.3	145	12,899	89.0
Alaska*	8,623	32,157	3.7	4,670	7,649	1.6	88	6,069	69.0
Arizona*	28,244	78,982	2.8	35,925	76,362	2.1	6,640	249,698	37.6
Arkansas*	2,189	4,372	2.0	979	1,258	1.3	61	553	9.1
California*	93,501	210,008	2.2	20,074	35,756	1.8	11,334	367,386	32.4
Colorado*	23,405	67,308	2.9	6,057	9,081	1.5	59	561	9.5
Connecticut*	21,159	87,011	4.1	20,347	29,523	1.5	9,177	127,659	13.9
Delaware*	8,663	41,971	4.8	2,943	3,740	1.3	1,072	20,342	19.0
District of Columbia*	4,701	14,216	3.0	2,087	4,281	2.1	17	515	30.3
Florida	22,075	47,572	2.2	13,028	19,948	1.5	57	577	10.1
Georgia	17,222	45,580	2.6	7,608	17,991	2.4	272	2,444	9.0
Hawaii*	6,651	21,190	3.2	2,758	3,897	1.4	411	16,892	41.1
Idaho	2,756	7,774	2.8	584	816	1.4	0	.	.
Illinois*	3,007	6,362	2.1	1,634	2,348	1.4	0	.	.
Indiana*	28,037	94,160	3.4	17,794	25,537	1.4	1,310	14,247	10.9
Iowa*	17,376	39,931	2.3	14,395	25,163	1.7	4,109	92,843	22.6
Kansas	5,154	11,780	2.3	3,904	5,097	1.3	1,856	51,128	27.5
Kentucky*	56,415	333,506	5.9	23,962	33,081	1.4	8,122	154,697	19.0
Louisiana*	10,028	22,728	2.3	5,357	7,478	1.4	3,419	72,342	21.2
Maine	10,736	44,211	4.1	8,381	24,948	3.0	1,254	40,295	32.1
Maryland*	43,502	169,785	3.9	41,185	61,618	1.5	15,407	415,881	27.0
Massachusetts*	81,430	541,406	6.6	31,890	55,684	1.7	17,511	246,252	14.1
Michigan*	70,065	190,849	2.7	48,833	109,049	2.2	17,905	510,662	28.5
Minnesota*	38,716	94,545	2.4	32,433	58,175	1.8	27,619	1,106,741	40.1
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	5,000	10,707	2.1	4,009	7,588	1.9	574	13,861	24.1
New Hampshire*	5,480	24,968	4.6	2,626	6,654	2.5	1,309	23,548	18.0

Table D.1.iii. (continued)

State	Physician services			Screening/assessment			Treatment program		
	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary
New Jersey*	23,804	82,007	3.4	18,512	91,703	5.0	4,223	134,733	31.9
New Mexico*	6,264	22,835	3.6	4,454	7,821	1.8	643	12,345	19.2
New York*	116,914	331,390	2.8	30,080	74,405	2.5	6,597	152,795	23.2
North Carolina	34,144	135,076	4.0	14,455	21,592	1.5	7,875	195,275	24.8
North Dakota*	872	1,941	2.2	512	675	1.3	315	4,430	14.1
Ohio*	125,547	410,581	3.3	111,994	848,916	7.6	25,535	560,951	22.0
Oklahoma	10,917	30,789	2.8	3,324	4,015	1.2	14	1,562	111.6
Oregon*	33,788	87,178	2.6	28,220	39,655	1.4	5,777	266,984	46.2
Pennsylvania*	78,262	333,976	4.3	53,943	101,485	1.9	53,131	1,819,319	34.2
Puerto Rico*	7,438	31,071	4.2	3,395	5,121	1.5	17	282	16.6
Rhode Island*	5,690	29,030	5.1	4,594	7,401	1.6	1,075	20,174	18.8
South Carolina	9,179	27,732	3.0	7,972	11,247	1.4	1,791	40,902	22.8
South Dakota	991	1,885	1.9	577	788	1.4	438	44,910	102.5
Tennessee	30,756	92,664	3.0	10,635	17,364	1.6	6,351	154,068	24.3
Texas	26,390	67,989	2.6	9,184	12,432	1.4	2,844	52,879	18.6
Utah	1,109	3,049	2.7	1,023	1,806	1.8	88	3,432	39.0
Vermont*	5,308	26,354	5.0	3,619	5,042	1.4	1,708	28,918	16.9
Virginia	10,463	35,935	3.4	2,848	4,582	1.6	291	4,044	13.9
Washington*	46,446	174,734	3.8	39,356	68,389	1.7	8,139	251,526	30.9
West Virginia*	22,237	207,635	9.3	10,007	13,766	1.4	637	16,091	25.3
Wisconsin	29,228	87,195	3.0	16,371	143,246	8.7	1,210	15,826	13.1
Wyoming	1,204	3,524	2.9	718	1,264	1.8	DS	DS	DS

Source: Mathematica's analysis of the 2017 TAF data version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. Detailed information on how SUD treatment was identified is reported in Appendix B.

We counted certain service types by days (inpatient care, observation care, partial hospitalization, and treatment program), but we counted other service types by claims (consultation, counseling, emergency services, MAT, physician services, screening/assessment). A claim roughly represents a single service, such as a physician service or a screening/assessment.

Service types counted by claims are for claims on different dates of service.

We did not count claims with missing dates of service, procedure codes, or other information. The services presented in the table are for a SUD; if the claim did not have a SUD diagnosis code, we did not count the service.

Variation across states in the number of services beneficiaries received may be a result of billing practices, policies or programs (for instance, if a state covers specific services), or data quality issues.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

Table D.1.iii. (continued)

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

E. Delivery system for SUD services provided by state Medicaid programs

Section 1015(a)(2)(E) of the SUPPORT Act requires the SUD Data Book to provide the number and percentage of Medicaid beneficiaries treated for a SUD through managed care entities,³⁴ FFS payment models, or an alternative payment model, by enrollment category. We split the tables that show this information into enrollment category (Tables A.3 and A.4) and delivery system (Table E.1). We did this to avoid not only small groups, which would have required us to suppress information to maintain the confidentiality of beneficiaries, but also data quality issues related to examining cross-tabulations of multiple variables simultaneously. Furthermore, we do not present results for alternative payment models because it is not possible to identify alternative payment models in the TAF data.

Table E.1. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by delivery system

- Approximately 71 percent of the Medicaid beneficiaries treated for a SUD received at least one SUD service through a managed care organization in 2017, and about 46 percent of the Medicaid beneficiaries treated for a SUD received at least one service through a state's FFS system in 2017. Because some states use both types of delivery systems to serve beneficiaries with a SUD, they are not mutually exclusive, and some beneficiaries receive SUD services through both managed care and FFS systems.
- In eight states (Arizona, Delaware, Hawaii, Iowa, Kansas, Kentucky, Michigan, and New Mexico) and in Puerto Rico, 90 percent or more of the beneficiaries treated for a SUD received at least one service through a managed care organization.
- In 10 states, none of the beneficiaries treated for a SUD received any services through managed care (Alabama, Alaska, Connecticut, Idaho, Maine, North Dakota, Oklahoma, South Dakota, Vermont, and Wyoming). Except for Alabama, Idaho, and North Dakota, none of these states cover SUD treatment services through a managed care program in 2017.

³⁴ Managed care entities may include both risk-based managed care, including comprehensive managed care plans and behavioral health organizations, as well as primary care case management entities.

Table E.1.i. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by delivery system

State	Total number of Medicaid beneficiaries with a SUD	Total with a managed care SUD claim		Total with a FFS SUD claim	
		Number	Percent	Number	Percent
United States	4,084,089	2,895,906	70.9	1,870,649	45.8
Alabama	51,300	DS	DS	51,300	100.0
Alaska*	18,048	0	0.0	18,048	100.0
Arizona*	108,967	99,606	91.4	11,869	10.9
Arkansas*	12,265	3,804	31.0	10,634	86.7
California*	422,080	286,310	67.8	250,459	59.3
Colorado*	67,997	13,676	20.1	61,647	90.7
Connecticut*	87,004	0	0.0	87,004	100.0
Delaware*	18,528	17,249	93.1	3,056	16.5
District of Columbia*	15,642	7,466	47.7	8,833	56.5
Florida	136,441	116,386	85.3	27,558	20.2
Georgia	63,803	24,885	39.0	40,504	63.5
Hawaii*	18,200	18,117	99.5	239	1.3
Idaho	10,416	0	0.0	10,416	100.0
Illinois*	15,377	3,838	25.0	13,256	86.2
Indiana*	94,721	77,946	82.3	23,449	24.8
Iowa*	51,123	47,243	92.4	7,308	14.3
Kansas	20,250	19,813	97.8	710	3.5
Kentucky*	137,127	133,482	97.3	5,717	4.2
Louisiana*	39,945	31,266	78.3	9,523	23.8
Maine	20,830	0	0.0	20,830	100.0
Maryland*	117,863	65,439	55.5	89,424	75.9
Massachusetts*	180,056	117,278	65.1	95,312	52.9
Michigan*	190,471	173,886	91.3	41,202	21.6
Minnesota*	100,405	80,850	80.5	42,438	42.3
Mississippi	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ
Nevada*	41,400	26,808	64.8	17,063	41.2
New Hampshire*	13,430	8,949	66.6	6,765	50.4
New Jersey*	81,928	61,031	74.5	41,741	50.9
New Mexico*	19,153	17,801	92.9	1,490	7.8
New York*	412,492	324,578	78.7	237,168	57.5
North Carolina	109,346	33,960	31.1	96,900	88.6
North Dakota*	3,072	0	0.0	3,072	100.0
Ohio*	362,088	286,064	79.0	181,884	50.2
Oklahoma	42,095	0	0.0	42,095	100.0
Oregon*	90,062	79,651	88.4	26,469	29.4
Pennsylvania*	278,008	247,574	89.1	51,431	18.5
Puerto Rico*	15,227	15,227	100.0	0	0.0
Rhode Island*	17,881	15,882	88.8	3,927	22.0
South Carolina	42,561	30,721	72.2	15,779	37.1
South Dakota	5,875	0	0.0	5,875	100.0
Tennessee	89,695	75,516	84.2	17,608	19.6
Texas	113,195	86,508	76.4	35,948	31.8

Table E.1.i. (continued)

State	Total number of Medicaid beneficiaries with a SUD	Total with a managed care SUD claim		Total with a FFS SUD claim	
		Number	Percent	Number	Percent
Utah	11,367	6,155	54.1	6,782	59.7
Vermont*	19,100	0	0.0	19,100	100.0
Virginia	50,330	35,524	70.6	17,753	35.3
Washington*	137,886	120,777	87.6	29,489	21.4
West Virginia*	45,593	35,836	78.6	23,937	52.5
Wisconsin	79,303	48,804	61.5	53,494	67.5
Wyoming	4,143	0	0.0	4,143	100.0

Source: Mathematica's analysis of the 2017 TAF data version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. Appendix B includes detailed information on how we identified SUD treatment.

We categorized SUD claims as covered under managed care if they were managed care encounter records or if they had a managed care plan ID.

We categorized claims as paid for by FFS if they were FFS claims without a managed care plan ID. Beneficiaries could have one or both types of claims during the year.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

F. Progression of care for Medicaid beneficiaries treated for a SUD

Section 1015(a)(2)(F) of the SUPPORT Act requires the SUD Data Book to provide the number and percentage of Medicaid beneficiaries with a SUD who receive SUD treatment services in an outpatient or in a home-based or a community-based setting after receiving treatment in an inpatient or residential setting; the statute also requires the SUD Data Book to provide the number of services received by these individuals in these settings. However, the number of outpatient or home- or community-based services provided after beneficiaries have received services in an inpatient or a residential setting cannot be calculated consistently across beneficiaries because of different patterns of care and because of the time at which the services in the inpatient or residential setting were received. Furthermore, different methodologies are used to count different types of services (for instance, by claims and by days). We therefore present the number and percentage of Medicaid beneficiaries who received at least one, or two or more, outpatient or home- or community-based services after receiving services in an inpatient or a residential setting during 2017 in Table F.1.³⁵

Table F.1. Progression of care for Medicaid beneficiaries treated for a SUD who received services in an inpatient or a residential setting in 2017

- Among the Medicaid beneficiaries treated for a SUD and who received SUD services in an inpatient or a residential setting during 2017, about 24 percent received at least one service in an outpatient or home- or community-based setting within 30 days of discharge, and 16 percent received two services or more in these settings.
- The proportion of Medicaid beneficiaries treated for a SUD in an inpatient or a residential setting during 2017 and who received a SUD service in an outpatient or in a home- or community-based setting within 30 days of discharge ranged from a low of 5 percent in Arkansas (which may be a result of a data quality issue) to a high of 43 percent in Massachusetts. These two states also had the lowest and the highest percentage of beneficiaries, respectively, who received two or more SUD services in an outpatient or in a home- or community-based setting within 30 days of discharge.

³⁵ As noted, because the data this table are based on T-MSIS claims reported by the states and represent services provided, they do not necessarily represent what is included in a state's Medicaid plan, 1115 waiver, or MACPro information.

Table F.1. Progression of care for Medicaid beneficiaries treated for a SUD who received services in an inpatient or a residential setting in 2017

State	Number of beneficiaries with a SUD who received services in an inpatient or a residential setting	Received at least one outpatient or home- or community-based SUD service within 30 days of discharge		Received more than one outpatient or home- or community-based service within 30 days of discharge	
		Number	Percent	Number	Percent
United States	1,750,767	424,875	24.3	280,369	16.0
Alabama	25,161	6,063	24.1	2,957	11.8
Alaska*	7,696	2,293	29.8	1,537	20.0
Arizona*	49,236	14,191	28.8	10,374	21.1
Arkansas*	6,582	307	4.7	70	1.1
California*	191,981	35,218	18.3	22,458	11.7
Colorado*	26,685	3,605	13.5	1,546	5.8
Connecticut*	26,811	9,777	36.5	7,251	27.0
Delaware*	8,060	3,049	37.8	2,198	27.3
District of Columbia*	7,993	1,815	22.7	1,076	13.5
Florida	83,424	12,854	15.4	6,483	7.8
Georgia	37,545	5,211	13.9	2,537	6.8
Hawaii*	8,152	1,830	22.4	964	11.8
Idaho	5,357	916	17.1	424	7.9
Illinois*	9,069	1,436	15.8	647	7.1
Indiana*	46,628	8,840	19.0	5,679	12.2
Iowa*	24,171	6,045	25.0	3,856	16.0
Kansas	12,058	2,011	16.7	1,096	9.1
Kentucky*	54,497	12,852	23.6	7,337	13.5
Louisiana*	20,618	3,482	16.9	2,236	10.8
Maine	3,872	1,376	35.5	1,040	26.9
Maryland*	40,681	13,704	33.7	10,500	25.8
Massachusetts*	78,810	34,298	43.5	27,076	34.4
Michigan*	64,680	5,771	8.9	1,942	3.0
Minnesota*	34,987	11,572	33.1	8,099	23.1
Mississippi	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ
Nevada*	20,712	5,140	24.8	3,055	14.7
New Hampshire*	4,482	1,451	32.4	966	21.6
New Jersey*	34,966	8,604	24.6	6,582	18.8
New Mexico*	7,479	2,015	26.9	1,197	16.0
New York*	176,942	59,995	33.9	45,281	25.6
North Carolina	55,508	9,363	16.9	4,827	8.7
North Dakota*	1,800	258	14.3	128	7.1
Ohio*	129,417	41,369	32.0	27,988	21.6
Oklahoma	21,632	2,913	13.5	1,309	6.1
Oregon*	29,492	10,542	35.7	7,555	25.6
Pennsylvania*	108,026	23,154	21.4	14,498	13.4
Puerto Rico*	4,714	897	19.0	481	10.2
Rhode Island*	3,853	1,593	41.3	1,280	33.2
South Carolina	21,028	3,208	15.3	1,838	8.7
South Dakota	3,895	650	16.7	322	8.3
Tennessee	44,953	9,765	21.7	5,140	11.4
Texas	65,920	10,187	15.5	5,347	8.1

Table F.1. (continued)

State	Number of beneficiaries with a SUD who received services in an inpatient or a residential setting	Received at least one outpatient or home- or community-based SUD service within 30 days of discharge		Received more than one outpatient or home- or community-based service within 30 days of discharge	
		Number	Percent	Number	Percent
Utah	7,520	1,253	16.7	668	8.9
Vermont*	5,424	1,667	30.7	1,070	19.7
Virginia	26,752	3,235	12.1	1,664	6.2
Washington*	50,514	16,507	32.7	11,800	23.4
West Virginia*	18,614	3,276	17.6	1,927	10.4
Wisconsin	30,363	8,990	29.6	5,888	19.4
Wyoming	2,007	327	16.3	175	8.7

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table. To identify beneficiaries with a SUD, we used National Drug Codes; diagnosis codes; and select procedure, place of service, type of bill, and revenue center codes on Medicaid claims. Appendix B includes detailed information on how we identified SUD treatment.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

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APPENDIX A:

**SUPPORT ACT, SECTION 1015 OPIOID ADDICTION TREATMENT PROGRAMS
ENHANCEMENT**

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Commission shall make publicly available a report containing the results of the study conducted under subsection (a).

SEC. 1015. OPIOID ADDICTION TREATMENT PROGRAMS ENHANCEMENT.

(a) T-MSIS SUBSTANCE USE DISORDER DATA BOOK.—

(1) **IN GENERAL.**—Not later than the date that is 12 months after the date of enactment of this Act, the Secretary of Health and Human Services (in this section referred to as the “Secretary”) shall publish on the public website of the Centers for Medicare & Medicaid Services a report with comprehensive data on the prevalence of substance use disorders in the Medicaid beneficiary population and services provided for the treatment of substance use disorders under Medicaid.

(2) **CONTENT OF REPORT.**—The report required under paragraph (1) shall include, at a minimum, the following data for each State (including, to the extent available, for the District of Columbia, Puerto Rico, the United States Virgin Islands, Guam, the Northern Mariana Islands, and American Samoa):

(A) The number and percentage of individuals enrolled in the State Medicaid plan or waiver of such plan in each of the major enrollment categories (as defined in a public letter from the Medicaid and CHIP Payment and Access Commission to the Secretary) who have been diagnosed with a substance use disorder and whether such individuals are enrolled under the State Medicaid plan or a waiver of such plan, including the specific waiver authority under which they are enrolled, to the extent available.

(B) A list of the substance use disorder treatment services by each major type of service, such as counseling, medication-assisted treatment, peer support, residential treatment, and inpatient care, for which beneficiaries in each State received at least 1 service under the State Medicaid plan or a waiver of such plan.

(C) The number and percentage of individuals with a substance use disorder diagnosis enrolled in the State Medicaid plan or waiver of such plan who received substance use disorder treatment services under such plan or waiver by each major type of service under subparagraph (B) within each major setting type, such as outpatient, inpatient, residential, and other home-based and community-based settings.

(D) The number of services provided under the State Medicaid plan or waiver of such plan per individual with a substance use disorder diagnosis enrolled in such plan or waiver for each major type of service under subparagraph (B).

(E) The number and percentage of individuals enrolled in the State Medicaid plan or waiver, by major enrollment category, who received substance use disorder treatment through—

(i) a medicaid managed care entity (as defined in section 1932(a)(1)(B) of the Social Security Act (42 U.S.C. 1396u–2(a)(1)(B))), including the number of such individuals who received such assistance through a prepaid inpatient health plan or a prepaid ambulatory health plan;

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(ii) a fee-for-service payment model; or

(iii) an alternative payment model, to the extent available.

(F) The number and percentage of individuals with a substance use disorder who receive substance use disorder treatment services in an outpatient or home-based and community-based setting after receiving treatment in an inpatient or residential setting, and the number of services received by such individuals in the outpatient or home-based and community-based setting.

(3) ANNUAL UPDATES.—The Secretary shall issue an updated version of the report required under paragraph (1) not later than January 1 of each calendar year through 2024.

(4) USE OF T-MSIS DATA.—The report required under paragraph (1) and updates required under paragraph (3) shall—

(A) use data and definitions from the Transformed Medicaid Statistical Information System (“T-MSIS”) data set that is no more than 12 months old on the date that the report or update is published; and

(B) as appropriate, include a description with respect to each State of the quality and completeness of the data and caveats describing the limitations of the data reported to the Secretary by the State that is sufficient to communicate the appropriate uses for the information.

(b) MAKING T-MSIS DATA ON SUBSTANCE USE DISORDERS AVAILABLE TO RESEARCHERS.—

(1) IN GENERAL.—The Secretary shall publish in the Federal Register a system of records notice for the data specified in paragraph (2) for the Transformed Medicaid Statistical Information System, in accordance with section 552a(e)(4) of title 5, United States Code. The notice shall outline policies that protect the security and privacy of the data that, at a minimum, meet the security and privacy policies of SORN 09–70–0541 for the Medicaid Statistical Information System.

(2) REQUIRED DATA.—The data covered by the systems of records notice required under paragraph (1) shall be sufficient for researchers and States to analyze the prevalence of substance use disorders in the Medicaid beneficiary population and the treatment of substance use disorders under Medicaid across all States (including the District of Columbia, Puerto Rico, the United States Virgin Islands, Guam, the Northern Mariana Islands, and American Samoa), forms of treatment, and treatment settings.

(3) INITIATION OF DATA-SHARING ACTIVITIES.—Not later than January 1, 2019, the Secretary shall initiate the data-sharing activities outlined in the notice required under paragraph (1).

APPENDIX B:
SUPPLEMENTARY TECHNICAL INFORMATION

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Data source

Since 1999, the federal government has required Medicaid state agencies to report Medicaid claims and eligibility data through the Medicaid Statistical Information System (MSIS), the first national, uniform, and comprehensive Medicaid data collection system. In 2015, T-MSIS—Transformed MSIS—representing the next generation of national Medicaid data, replaced MSIS. T-MSIS enhanced and expanded on MSIS in a number of ways. The data are more detailed (more files and data elements), and data files are submitted more frequently, among other enhancements. The T-MSIS Analytic Files (TAF) are built directly from the T-MSIS data files submitted by states. The TAF are more appropriate than the T-MSIS source data for analytic tasks due to the size, complexity, and frequency of updates to the T-MSIS data, which makes it very challenging to use for analytic purposes. Most important, TAF reorganizes both enrollment and claims records from their date of submission by the state to the date of enrollment and date of service. This reorganization facilitates the identification of beneficiaries during a specific time period, such as a calendar year, and aligning service provision with a beneficiary's enrollment in Medicaid.

To create the tables in this SUD Data Book, we relied on the following files in the TAF:

Annual Demographic and Eligibility (DE) File: contains demographic, eligibility, and enrollment information for all Medicaid- or CHIP-eligible beneficiaries who were enrolled for at least one day during the calendar year.

Inpatient (IP) File: contains inpatient hospital institutional claims.

Long-Term (LT) File: contains long-term care institutional claims, including claims from nursing facilities, intermediate care facilities that provide services for individuals with intellectual disabilities, mental health facilities, and independent (free-standing) psychiatric wings of acute care hospitals.

Other Services (OT) File: contains institutional and professional claims for services other than those provided by an inpatient hospital, a long-term care facility, or a pharmacy. Services include but are not limited to physician services; outpatient hospital services; dental services; other physician services such as those provided by chiropractors, podiatrists, psychologists, optometrists, and so on; clinic services, laboratory services, radiology services, home health services, and personal assistance services. The file also includes managed care capitation payments.

Pharmacy (RX) File: contains claims for drugs or other services provided by an outpatient pharmacy.

Excluded states and data quality issues

At the time of this analysis, the most recent full year of data available were the 2017 TAF enrollment and claims data (version 2), which included the 50 states, the District of Columbia, and Puerto Rico. The TAF was designed to present a comprehensive, current, and reliable picture of the Medicaid program across the United States. However, a number of states had severe data quality issues and were not included in the tables in this SUD Data Book. Several other states

had data quality issues that did not prevent them from being included in the tables but called into question the validity of results. Appendix Table B.1 lists the severe, and less severe but still problematic, data quality issues by state.

Appendix Table B.1. Severe and other data quality issues by state

State	Severe data quality issues—states removed from all tables		Less severe data quality issues that affected the validity of the results in this SUD Data Book					
	Claim headers and lines do not link	Data not reported in all months of 2017	Missing or conflicting Medicaid enrollment information	Unexpected claims volumes	Issues with linking enrollment to claims	State-specific codes used in the procedure code field	High levels of missingness for important data elements (diagnosis, procedure, revenue, type of bill, dates, place of service, RX supply days) in OT, IP, LT files	Large percentage of claim families without a final version of the claim
Alabama								
Alaska				LT (low)				
Arizona				LT (low)				
Arkansas			Restricted benefits code	IP, RX (low); LT (high)			Type of bill/place of service (OT)	X
California					X	X	Diagnosis code (OT; FFS IP)	
Colorado			Restricted benefits code; eligibility group code				Type of bill/place of service (OT)	
Connecticut								X
Delaware			CHIP code					
District of Columbia								
Florida			Eligibility group code; CHIP code					

Appendix Table B.1. (continued)

State	Severe data quality issues—states removed from all tables		Less severe data quality issues that affected the validity of the results in this SUD Data Book					
	Claim headers and lines do not link	Data not reported in all months of 2017	Missing or conflicting Medicaid enrollment information	Unexpected claims volumes	Issues with linking enrollment to claims	State-specific codes used in the procedure code field	High levels of missingness for important data elements (diagnosis, procedure, revenue, type of bill, dates, place of service, RX supply days) in OT, IP, LT files	Large percentage of claim families without a final version of the claim
Georgia				IP (high)			Procedure code (IP); Type of bill/place of service (OT)	
Hawaii				LT (low)				
Idaho			Restricted benefits code; eligibility group code; CHIP code					
Illinois							Type of bill (OT); revenue code (LT)	
Indiana				LT (high)				
Iowa			Restricted benefits; eligibility group					
Kansas			Eligibility group; CHIP code	LT (high)	X			
Kentucky							Type of bill/place of service (OT)	
Louisiana								X

Appendix Table B.1. (continued)

State	Severe data quality issues—states removed from all tables		Less severe data quality issues that affected the validity of the results in this SUD Data Book					
	Claim headers and lines do not link	Data not reported in all months of 2017	Missing or conflicting Medicaid enrollment information	Unexpected claims volumes	Issues with linking enrollment to claims	State-specific codes used in the procedure code field	High levels of missingness for important data elements (diagnosis, procedure, revenue, type of bill, dates, place of service, RX supply days) in OT, IP, LT files	Large percentage of claim families without a final version of the claim
Maine			Eligibility group				Type of bill/place of service (OT)	
Maryland								
Massachusetts				IP (high)			Days' supply (RX)	
Michigan							Procedure code (IP); Type of bill/place of service (OT)	X
Minnesota							Days' supply (RX)	X
Mississippi	X		NA	NA	NA	NA	NA	NA
Missouri	X		NA	NA	NA	NA	NA	NA
Montana	X		NA	NA	NA	NA	NA	NA
Nebraska		X	NA	NA	NA	NA	NA	NA
Nevada			Eligibility group					
New Hampshire				IP (low); LT (high)			Type of bill (LT); diagnosis code (LT); Type of bill/place of service (OT)	
New Jersey					X		Type of bill (LT); revenue code (LT)	X

Appendix Table B.1. (continued)

State	Severe data quality issues—states removed from all tables		Less severe data quality issues that affected the validity of the results in this SUD Data Book					
	Claim headers and lines do not link	Data not reported in all months of 2017	Missing or conflicting Medicaid enrollment information	Unexpected claims volumes	Issues with linking enrollment to claims	State-specific codes used in the procedure code field	High levels of missingness for important data elements (diagnosis, procedure, revenue, type of bill, dates, place of service, RX supply days) in OT, IP, LT files	Large percentage of claim families without a final version of the claim
New Mexico				LT (low)				
New York			Eligibility group	LT (high)			Procedure code (OT)	
North Carolina				RX (low)				
North Dakota				LT (high); IP (high)			Diagnosis code (OT); Type of bill/place of service (OT)	
Ohio							Type of bill/place of service (OT)	
Oklahoma			Eligibility group	LT (high)				
Oregon			CHIP code	LT (low)				
Pennsylvania								
Puerto Rico				IP, OT (low)			Days' supply (RX)	
Rhode Island			Restricted benefits; CHIP code	IP (low)				
South Carolina								

Appendix Table B.1. (continued)

State	Severe data quality issues—states removed from all tables		Less severe data quality issues that affected the validity of the results in this SUD Data Book					
	Claim headers and lines do not link	Data not reported in all months of 2017	Missing or conflicting Medicaid enrollment information	Unexpected claims volumes	Issues with linking enrollment to claims	State-specific codes used in the procedure code field	High levels of missingness for important data elements (diagnosis, procedure, revenue, type of bill, dates, place of service, RX supply days) in OT, IP, LT files	Large percentage of claim families without a final version of the claim
South Dakota			CHIP code				Type of bill (IP); diagnosis code (IP); type of bill (LT); diagnosis code (LT); revenue code (LT)	
Tennessee								X
Texas				LT (high)				
Utah				OT (low)	X		Type of bill (IP); revenue code (IP)	
Vermont							Type of bill/place of service (OT)	
Virginia							Admission/beginning dates (IP)	
Washington								X
West Virginia								
Wisconsin								X
Wyoming								

Source: Mathematica's analysis of the 2017 TAF data version 2; DE, OT, IP, LT, and RX files.

Appendix Table B.1. (continued)

Note: Data quality issues were so severe in Mississippi, Missouri, Montana, and Nebraska that these states were not included in the tables in this SUD Data Book. Less severe data quality issues for these states are not listed in this table. Puerto Rico's Medicaid program does not cover long-term services, so no long-term claims were submitted, but this is not considered a data quality issue.

Unexpected claims volumes included 150 percent or more above the median number of claims per 1,000 member-months or 50 percent or less of the median number of claims per 1,000 member-months. The wide variation in the volume of LT claims may be a result of the differences between benefits packages in some states rather than a data quality issue.

The cut-off for what constituted a large volume of missing claims differed by file and variable because of different standards, requirements, and relative level of missingness across states. For example, although we expect that most, if not all, records in the IP file include information on the type of bill because it is required on institutional claims, we expected a substantially lower proportion of claims in the OT file to have type of bill information because most claims in that file are for professional services. In the IP file, we considered the following thresholds to be high enough for a state to be included in the table: more than 85 percent of claims missing the procedure code, more than 65 percent missing the type of bill, more than 5 percent missing the diagnosis code, and more than 50 percent missing the revenue code. In the LT file, the following thresholds were high enough for a state to be included in the table: more than 50 percent missing the type of bill, more than 50 percent missing the diagnosis code, and more than 75 percent missing the revenue code. In the OT file, the following thresholds were considered high enough for a state to be included in the table: more than 20 percent of claims missing both type of bill and place of service (OT claims should have either type of bill or place of service), more than 40 percent of claims missing place of service, more than 25 percent of claims missing diagnosis code, and more than 40 percent of claims missing procedure code. In the RX file, the following thresholds were high enough for a state to be included in the table: more than 10 percent of prescription claims missing the days' supply. For dates, we noted when 10 percent or more of the claims were missing the following: both admission date and the date the service began, or discharge and the date that the service ended.

For enrollment information in the DE file, the missing or conflicting Medicaid enrollment data included known issues with incorrectly or inconsistently reported CHIP code and eligibility group code. Claims missing the restricted benefits code were considered to be problematic if the missingness was above 15 percent.

Identifying beneficiaries with a SUD

This SUD Data Book includes individuals ages 12 and older who were enrolled in Medicaid for at least one day in 2017;³⁶ the SUD Data Book excludes Medicaid-Expansion CHIP or separate CHIP beneficiaries enrolled only in these programs throughout the year.^{37, 38} To be identified as having a SUD (see methods below), a beneficiary must have received SUD services. Hence, the counts of beneficiaries presented in this SUD Data Book underestimate the true prevalence of SUD because the reported counts exclude those with a SUD who do not seek treatment.

The SUD Data Book focuses on Medicaid beneficiaries eligible for the full range benefits or comprehensive benefits. We excluded Medicaid beneficiaries who were eligible for only partial (also referred to as limited, or restricted) benefits from the analysis because they are often not eligible for SUD treatment services.

Data quality note: Incomplete, inconsistent, or incorrect reporting of Medicaid enrollment, restricted benefits, or age may result in an incorrect estimate of the number of beneficiaries in Medicaid.

To identify beneficiaries who were treated for a SUD, we first identified claims related to SUD treatment³⁹ that had (1) a diagnosis code indicating a SUD and (2) a relevant type of bill, revenue, or procedure code. We then determined whether a beneficiary had enough claims to be identified as having a SUD. In general, a beneficiary was identified as having a SUD if he or she had one qualifying inpatient claim for SUD treatment, two outpatient or long-term care claims for SUD treatment on different days, or one pharmacy claim for MAT.⁴⁰

Data quality note: Missing or invalid diagnosis codes make it difficult to identify Medicaid beneficiaries with a SUD or any specific type of medical condition. Additionally, a low volume of claims in TAF may have resulted in an underestimate of the number of Medicaid beneficiaries with a SUD.

³⁶ This SUD data book includes individuals eligible for Medicaid coverage only, as well as those dually eligible for Medicare and Medicaid.

³⁷ Since the SUD Data Book includes beneficiaries enrolled in Medicaid for one or more months in 2017, some beneficiaries enrolled in both Medicaid and CHIP during 2017 are also included.

³⁸ This age group is consistent with the age range used in the National Survey of Drug Use and Health; please see <https://nsduhweb.rti.org/respweb/homepage.cfm>.

³⁹ The SUD Data Book does not include lab or transportation claims because they can cause beneficiaries to be incorrectly identified as having a SUD.

⁴⁰ This approach uses SUD Tool 1, Identifying Beneficiaries with a SUD (identification tool), developed for CMS's Innovation Accelerator Program.

Defining eligibility categories

We grouped Medicaid beneficiaries who were treated with a SUD into five eligibility categories: (1) adult; (2) children; (3) pregnant; (4) aged, blind, disabled; and (5) VIII Group adults. Because some beneficiaries change eligibility groups during the year (children may age into adulthood or adults into the aged group), each beneficiary's categorization is based on the group that accounted for the most enrolled months during 2017. If two or more groups tied, we used the eligibility group of the beneficiary's final month enrolled in Medicaid in 2017. Beneficiaries for whom information on the eligibility group code was missing are included in the Unknown category.

Data quality note: Missing eligibility information made it impossible to group some beneficiaries into the major enrollment categories used for this data book. Conflicting information between eligibility group and Medicaid enrollment information from other variables also affected the accuracy with which individuals could be placed in each major enrollment category.

Identifying types of settings for SUD treatment

We grouped treatment services into four types of settings: inpatient, residential, outpatient, and home- and community-based. By design, all services in the IP file are delivered in an inpatient setting, all services in the LT file are delivered in a residential setting, and all services in the RX file are delivered in an outpatient setting. Since the OT file includes claims for services delivered in all settings, the logic for grouping those services by setting is more complex. For records from institutional settings in the OT file, we relied either on the type of bill to classify the treatment setting or on revenue codes if the type of bill was missing. For professional claims in the OT file, we relied either on the place of service to classify the treatment setting or on the procedure codes if the place of service code was missing. For community-based services, we relied on procedure codes.

Data quality note: Missing place of service and type of bill makes it impossible to determine the setting in which a service was delivered.

Defining and counting SUD treatment services

The tables in this SUD Data Book include counts of beneficiaries who received certain treatment services (Table C.1), and for a subset of those services, a count of services by service type (Table D.1). The counts were constructed only for beneficiaries who received these services; hence, the counts are for users of each service only. For some services, we counted claims, whereas for others, we counted the number of days. We did this to account for variation in billing practices across both states and service types. To identify the SUD treatment services, we relied on National Drug Codes, procedure codes, and revenue codes, and on diagnosis codes to identify them as for a SUD.

Data quality note: Missing, erroneous, or state-specific procedure codes and revenue center codes make it difficult to count services received by Medicaid beneficiaries with a SUD.

The following is the list of services and how each was counted.

- Consultation (claims)

- Counseling (claims)
- Emergency services (claims)
- Inpatient care (days)
- Medication-assisted treatment (MAT) (days)⁴¹
- Observation care (days)
- Partial hospitalization (days)
- Physician services (claims)
- Screening/assessment (claims)
- Treatment program (days)

Identifying the care delivery system

The SUD Data Book reports on the number and percentage of beneficiaries receiving SUD treatment services by the two major delivery systems state Medicaid programs use, managed care or FFS (Table E.1).⁴² Beneficiaries were counted as receiving SUD treatment services through a managed care entity if they (1) had one or more encounter records for SUD treatment, or (2) had a claim for SUD treatment associated with a managed care plan identification number. Beneficiaries were counted as receiving SUD treatment services through FFS if they had a FFS claim for SUD treatment that was not associated with a managed care plan identification number.

Data quality note: If a high percentage of claims that could not be linked to enrollment information disproportionately represent a particular claim type (for instance, managed care encounters), the estimates of the distribution of services across FFS and managed care could be adversely affected.

⁴¹ For MAT days of service, we counted the number of unique days for which a beneficiary filled a prescription. For example, if a beneficiary filled two naltrexone prescriptions for the same seven-day period, this would count as seven days.

⁴² Beneficiaries could be counted as having services delivered through both managed care and FFS if they had separate claims that met each criteria.

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APPENDIX C:

COMPARISON OF KEY FINDINGS TO OTHER DATA SOURCES

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To provide additional context for the proportion of Medicaid beneficiaries treated for a SUD, we compared this key finding with other payer groups, as shown in Appendix Table C.1. A larger share of Medicaid beneficiaries nationwide received treatment in 2017 for any SUD (7.6 percent) compared with Medicare beneficiaries (1.9 percent) and privately insured individuals (0.9 percent). However, the share of Medicaid beneficiaries treated for an alcohol use disorder (1.6 percent) was similar to the share of Medicare beneficiaries treated for this disorder (1.8 percent). A smaller share of privately insured individuals received treatment for an alcohol use disorder (0.6 percent).

The results presented below are based on (1) the application of the Chronic Conditions Warehouse (CCW) chronic conditions algorithms to Medicare administrative data⁴³ and (2) data from the National Survey on Drug Use and Health (NSDUH).⁴⁴ These two data sources are based on methods that differ from the method used in the SUD Data Book, and as a result, the comparisons shown in Appendix Table C.1 should be interpreted with caution. For instance, the CCW algorithms rely on ICD-10 diagnosis and procedure codes, whereas the SUD Data Book includes these codes as well as a more exhaustive set of codes, including type of bill, revenue, NDC, and procedure codes. The NSDUH is a nationally representative survey in which self-reported data would be used to obtain treatment rates for a SUD, whereas the TAF include all Medicaid beneficiaries, and treatment rates are based on actual services rendered. In addition, the NSDUH rates of illicit drug or alcohol use, and the CCW rates of drug/substance abuse do not include tobacco use disorder, but the SUD Data Book rate for any SUD does.

⁴³ CCW chronic conditions algorithms are available at <https://www.ccwdata.org/web/guest/condition-categories>. Last accessed on June 20, 2019.

⁴⁴ NSDUH Table 5.15B (Received Substance Use Disorder Treatment in Past Year Among Persons Aged 12 or Older, by Geographic and Socioeconomic Characteristics: Percentages, 2016 and 2017). Available at <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHDetailedTabs2017/NSDUHDetailedTabs2017.htm#tab5-15B>. Last accessed on June 20, 2019.

Appendix Table C.1. Comparison of SUD treatment rates in the US in the Medicaid, Medicare, and commercially/privately insured population

	Percent of individuals that received treatment for a SUD ^a	Percent of individuals that received treatment for alcohol use
Medicaid: SUD Data Book	7.6	1.6
Medicare: CCW algorithm	1.9	1.8
Commercial/private: NSDUH	0.9	0.6

Source: SUD Data Book Table A.1.i; Medicare-only beneficiaries of any age. Available at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CCDashboard.html>; NSDUH Table 5.15.B. Available at <https://www.samhsa.gov/data/nsduh/reports-detailed-tables-2017-NSDUH>.

^aSUD is defined differently across the three data sources. The methods section describes how any SUD was measured in the SUD Data Book. The Medicare CCW algorithm measures drug/substance abuse, and NSDUH measures treatment for illicit drugs or alcohol.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

APPENDIX D:
OPIOID USE DISORDER TABLES

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Appendix Table D.1. Number and percentage of Medicaid beneficiaries treated for an OUD and another SUD in 2017, by disorder

- In the states included in this analysis, more than 1 million Medicaid beneficiaries were treated for an OUD in 2017. More than 10 percent (117,969 beneficiaries) were in New York State, followed by Pennsylvania (108,875 beneficiaries) and Ohio (102,734 beneficiaries).
- More than 44 percent of Medicaid beneficiaries treated for OUD had another diagnosed SUD. This share was particularly high in North Dakota (61 percent) and particularly low in Rhode Island (21 percent).
- Tobacco use was the SUD that most frequently co-occurred with OUD (28 percent of beneficiaries with an OUD), followed by stimulants (14 percent of beneficiaries with an OUD) and alcohol (12 percent of beneficiaries with an OUD).

Appendix Table D.2. Distribution of Medicaid beneficiaries treated for an OUD in 2017, by major enrollment category

- Across the states included in the analysis, beneficiaries in the VIII Group—the adult expansion group—accounted for the largest percentage of beneficiaries treated for OUD (46 percent), followed by the adult group (24 percent) and those in the aged, blind, and disabled enrollment categories (27 percent).

Appendix Table D.3. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by major enrollment category

- Across the major enrollment categories, the VIII Group had the highest proportion of beneficiaries treated for an OUD (3 percent), followed by the adult group (2 percent) and the aged, blind, and disabled enrollment category (2 percent).

Appendix Table D.4. SUD treatment service types not billed for Medicaid beneficiaries with an OUD, by state

- As with the table for all beneficiaries with a SUD in 2017 (Table B.2), most states had at least one Medicaid beneficiary with an OUD who received each type of service. The exceptions appear to be peer support and partial hospitalization, which fewer states are providing to Medicaid beneficiaries.

Appendix Table D.5. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by service type

- More than half (58 percent) of the beneficiaries treated for an OUD received MAT services. This share varied substantially across the states, ranging from 86 percent in Rhode Island to 26 percent in Kansas. Across all states, more than one-third of the beneficiaries treated for an OUD received physician services (40 percent).

Appendix Table D.6. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by service setting

- More than 90 percent of the Medicaid beneficiaries treated for an OUD received one or more services in an outpatient setting in 2017, which is higher than the share of Medicaid beneficiaries treated for any SUD who received services in this type of setting (75 percent). Almost one-third (31 percent) of the beneficiaries treated for an OUD received one or more services in an inpatient setting, which is lower than the share of Medicaid beneficiaries treated for any SUD (44 percent). Tennessee had the highest rate of beneficiaries treated for an OUD who received services in an inpatient setting (57 percent), and Maine had the lowest rate (11 percent).
- Very few beneficiaries treated for an OUD received services in a home- or community-based setting in 2017, but there were two exceptions. In Minnesota, 19 percent of Medicaid beneficiaries treated for an OUD received home-based services, and in Alaska 24 percent of Medicaid beneficiaries treated for an OUD received community-based services.

Appendix Table D.7. Average number of OUD services received by Medicaid beneficiaries who received a given service in 2017, by service type

- Beneficiaries treated for an OUD who received MAT services received an average of 154 days of MAT in 2017. The number of days ranged from an average of 67 in Arkansas to 245 days in Vermont.
- Beneficiaries treated for an OUD who received inpatient care averaged 11 days of inpatient care in 2017. This average number of inpatient care days is half a day longer than what all beneficiaries with any SUD receive (9 days). Beneficiaries treated for OUD also averaged slightly more emergency services (two claims per beneficiary in 2017) and physician services (six claims per beneficiary in 2017) than did beneficiaries treated for any SUD, who averaged two and four claims per beneficiary, respectively.

Appendix Table D.8. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by delivery system

- Almost 75 percent of the Medicaid beneficiaries treated for an OUD received at least one service through a managed care organization, and about 50 percent received at least one service through FFS in 2017. This is very similar to the results for all beneficiaries treated for any SUD.

Appendix Table D.9. Progression of care for Medicaid beneficiaries treated for an OUD who received services in an inpatient or a residential setting in 2017

- Among the Medicaid beneficiaries treated for an OUD who received OUD services in an inpatient or a residential setting during 2017, about 50 percent received at least one outpatient or home- or community-based service within 30 days of discharge, and 38 percent of this same group received two or more of these services. These rates of follow-up care after discharge from an inpatient or residential setting are substantially higher than for Medicaid beneficiaries treated for a SUD more generally.

- The proportion of Medicaid beneficiaries treated for an OUD who received services in an inpatient or a residential setting during 2017 and who received OUD services in an outpatient or home or a community-based setting within 30 days ranged from a low of about 8 percent in Arkansas to a high of about 70 percent in Massachusetts. These two states also had the lowest and highest percentage of beneficiaries, respectively, who received two or more outpatient or home or community-based services within 30 days of discharge.

Appendix Table D.1. Number and percentage of Medicaid beneficiaries treated for an OUD and another SUD in 2017, by disorder

State	Total number of Medicaid beneficiaries with OUD	Alcohol		Cannabis		Polysubstance		Stimulants		Tobacco		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	1,164,950	144,074	12.4	100,173	8.6	517,331	44.4	160,512	13.8	323,788	27.8	177,284	15.2
Alabama	10,516	786	7.5	759	7.2	4,836	46.0	1,093	10.4	4,069	38.7	1,827	17.4
Alaska*	4,471	591	13.2	356	8.0	2,088	46.7	829	18.5	1,121	25.1	712	15.9
Arizona*	28,644	2,710	9.5	2,310	8.1	12,341	43.1	5,382	18.8	8,133	28.4	4,208	14.7
Arkansas*	1,289	97	7.5	105	8.1	492	38.2	112	8.7	303	23.5	190	14.7
California*	84,719	6,628	7.8	4,635	5.5	27,791	32.8	9,807	11.6	18,817	22.2	8,557	10.1
Colorado*	15,818	1,488	9.4	732	4.6	5,245	33.2	1,545	9.8	3,611	22.8	1,565	9.9
Connecticut*	34,393	4,617	13.4	2,703	7.9	14,631	42.5	4,825	14.0	8,177	23.8	4,084	11.9
Delaware*	9,956	1,159	11.6	1,092	11.0	4,766	47.9	1,735	17.4	2,758	27.7	1,210	12.2
District of Columbia*	3,569	639	17.9	293	8.2	2,003	56.1	615	17.2	1,554	43.5	601	16.8
Florida	27,281	2,482	9.1	2,062	7.6	12,392	45.4	2,860	10.5	9,505	34.8	5,045	18.5
Georgia	11,099	811	7.3	695	6.3	4,286	38.6	1,057	9.5	3,174	28.6	1,660	15.0
Hawaii*	3,736	255	6.8	188	5.0	1,259	33.7	482	12.9	796	21.3	434	11.6
Idaho	2,393	149	6.2	115	4.8	850	35.5	171	7.1	683	28.5	241	10.1
Illinois*	2,833	362	12.8	339	12.0	1,415	49.9	511	18.0	1,066	37.6	549	19.4
Indiana*	28,386	2,478	8.7	2,819	9.9	12,290	43.3	4,027	14.2	8,184	28.8	4,800	16.9
Iowa*	5,459	691	12.7	872	16.0	2,901	53.1	1,241	22.7	1,682	30.8	804	14.7
Kansas	2,745	213	7.8	227	8.3	1,189	43.3	353	12.9	830	30.2	367	13.4
Kentucky*	47,530	2,937	6.2	3,209	6.8	21,055	44.3	6,167	13.0	13,015	27.4	8,610	18.1
Louisiana*	7,067	690	9.8	723	10.2	3,456	48.9	1,212	17.2	2,206	31.2	1,457	20.6
Maine	9,328	559	6.0	222	2.4	3,007	32.2	331	3.5	1,688	18.1	1,048	11.2
Maryland*	65,868	18,802	28.5	1,145	1.7	21,639	32.9	1,570	2.4	4,158	6.3	2,339	3.6
Massachusetts*	79,511	13,908	17.5	6,936	8.7	39,907	50.2	12,525	15.8	26,221	33.0	16,582	20.9
Michigan*	43,138	4,445	10.3	3,129	7.3	18,817	43.6	4,702	10.9	11,461	26.6	5,117	11.9
Minnesota*	21,377	2,829	13.2	1,928	9.0	9,827	46.0	3,606	16.9	6,054	28.3	3,128	14.6
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	996	9.4	611	5.8	3,971	37.5	1,484	14.0	2,543	24.0	1,476	13.9
New Hampshire*	7,214	502	7.0	258	3.6	2,241	31.1	530	7.3	1,149	15.9	837	11.6

Appendix Table D.1. (continued)

State	Total number of Medicaid beneficiaries with OUD	Alcohol		Cannabis		Polysubstance		Stimulants		Tobacco		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	28,208	4,418	15.7	1,912	6.8	12,645	44.8	2,642	9.4	8,259	29.3	4,827	17.1
New Mexico*	6,269	667	10.6	336	5.4	2,274	36.3	708	11.3	1,271	20.3	855	13.6
New York*	117,969	23,378	19.8	17,691	15.0	65,164	55.2	24,512	20.8	47,348	40.1	24,009	20.4
North Carolina	26,252	1,642	6.3	2,008	7.6	11,450	43.6	2,510	9.6	7,515	28.6	4,197	16.0
North Dakota*	317	43	13.6	42	13.2	194	61.2	78	24.6	92	29.0	59	18.6
Ohio*	102,734	13,458	13.1	15,245	14.8	58,454	56.9	17,288	16.8	39,433	38.4	19,708	19.2
Oklahoma	8,737	426	4.9	467	5.3	3,356	38.4	676	7.7	2,503	28.6	1,006	11.5
Oregon*	22,106	2,278	10.3	1,613	7.3	10,337	46.8	4,601	20.8	5,205	23.5	2,010	9.1
Pennsylvania*	108,875	11,227	10.3	8,717	8.0	46,614	42.8	14,366	13.2	25,838	23.7	17,908	16.4
Puerto Rico*	5,620	116	2.1	324	5.8	1,503	26.7	929	16.5	368	6.5	624	11.1
Rhode Island*	9,826	1,008	10.3	292	3.0	2,037	20.7	551	5.6	534	5.4	501	5.1
South Carolina	6,457	627	9.7	675	10.5	3,007	46.6	978	15.1	1,879	29.1	1,179	18.3
South Dakota	505	67	13.3	62	12.3	208	41.2	38	7.5	138	27.3	52	10.3
Tennessee	18,377	1,976	10.8	2,279	12.4	10,696	58.2	3,212	17.5	7,499	40.8	5,254	28.6
Texas	17,085	1,342	7.9	1,284	7.5	6,526	38.2	1,800	10.5	4,789	28.0	2,412	14.1
Utah	3,910	237	6.1	129	3.3	1,243	31.8	402	10.3	912	23.3	485	12.4
Vermont*	9,906	1,075	10.9	785	7.9	3,865	39.0	951	9.6	2,255	22.8	863	8.7
Virginia	15,142	779	5.1	628	4.1	4,926	32.5	872	5.8	3,961	26.2	1,521	10.0
Washington*	44,119	4,068	9.2	4,405	10.0	21,726	49.2	9,931	22.5	10,913	24.7	6,279	14.2
West Virginia*	20,453	1,097	5.4	1,075	5.3	7,214	35.3	1,744	8.5	4,188	20.5	2,950	14.4
Wisconsin	22,546	2,254	10.0	1,705	7.6	8,960	39.7	2,889	12.8	5,784	25.7	3,085	13.7
Wyoming	616	67	10.9	36	5.8	237	38.5	62	10.1	146	23.7	52	8.4

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with an OUD, we used diagnosis codes, National Drug Codes, and select procedure codes on Medicaid claims. We identified polysubstance use disorder on the basis of a diagnosis of two or more SUD or a polysubstance diagnosis code.

The "Other" category includes treatment for caffeine; hallucinogens; sedatives, hypnotics and anxiolytics; inhalants; and unspecified or unknown SUD.

The percentages in this table may not sum to 100 within a state because beneficiaries could be treated for more than one condition in addition to OUD.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Appendix Table D.2. Distribution of Medicaid beneficiaries treated for an OUD in 2017, by major enrollment category

State	Total number of Medicaid beneficiaries with OUD	Adult		Children		Pregnant		Aged, blind, disabled		VIII Group adult		Unknown	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	1,164,950	274,123	23.5	12,009	1.0	14,525	1.2	313,976	27.0	532,809	45.7	16,178	1.4
Alabama	10,516	4,877	46.4	157	1.5	DS	DS	5,369	51.1	0	0.0	DS	DS
Alaska*	4,471	1,265	28.3	90	2.0	108	2.4	662	14.8	2,346	52.5	0	0.0
Arizona*	28,644	6,715	23.4	480	1.7	465	1.6	5,883	20.5	15,101	52.7	0	0.0
Arkansas*	1,289	415	32.2	35	2.7	43	3.3	761	59.0	24	1.9	11	0.9
California*	84,719	13,384	15.8	487	0.6	86	0.1	28,406	33.5	42,238	49.9	118	0.1
Colorado*	15,818	13,406	84.8	235	1.5	DS	DS	1,956	12.4	0	0.0	DS	DS
Connecticut*	34,393	6,764	19.7	168	0.5	182	0.5	4,168	12.1	23,111	67.2	0	0.0
Delaware*	9,956	2,558	25.7	DS	DS	235	2.4	839	8.4	6,284	63.1	DS	DS
District of Columbia*	3,569	275	7.7	DS	DS	DS	DS	2,120	59.4	1,139	31.9	21	0.6
Florida	27,281	12,907	47.3	439	1.6	1,011	3.7	12,213	44.8	0	0.0	711	2.6
Georgia	11,099	3,552	32.0	193	1.7	379	3.4	6,975	62.8	0	0.0	0	0.0
Hawaii*	3,736	392	10.5	DS	DS	167	4.5	1,180	31.6	1,968	52.7	DS	DS
Idaho	2,393	995	41.6	DS	DS	0	0.0	1,352	56.5	0	0.0	DS	DS
Illinois*	2,833	2,477	87.4	69	2.4	DS	DS	177	6.2	95	3.4	DS	DS
Indiana*	28,386	1,547	5.4	326	1.1	489	1.7	5,024	17.7	20,808	73.3	192	0.7
Iowa*	5,459	3,959	72.5	DS	DS	88	1.6	1,400	25.6	0	0.0	DS	DS
Kansas	2,745	1,099	40.0	66	2.4	84	3.1	989	36.0	0	0.0	507	18.5
Kentucky*	47,530	8,890	18.7	252	0.5	535	1.1	7,468	15.7	30,324	63.8	61	0.1
Louisiana*	7,067	3,536	50.0	132	1.9	130	1.8	3,201	45.3	DS	DS	DS	DS
Maine	9,328	4,466	47.9	113	1.2	726	7.8	3,749	40.2	0	0.0	274	2.9
Maryland*	65,868	15,253	23.2	1,151	1.7	240	0.4	13,069	19.8	36,155	54.9	0	0.0
Massachusetts*	79,511	15,394	19.4	256	0.3	248	0.3	29,494	37.1	33,939	42.7	180	0.2
Michigan*	43,138	10,191	23.6	327	0.8	72	0.2	10,754	24.9	21,794	50.5	0	0.0
Minnesota*	21,377	4,560	21.3	537	2.5	327	1.5	5,859	27.4	10,094	47.2	0	0.0
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	1,480	14.0	78	0.7	178	1.7	1,308	12.4	6,853	64.8	684	6.5
New Hampshire*	7,214	1,489	20.6	49	0.7	181	2.5	1,168	16.2	3,118	43.2	1,209	16.8

Appendix Table D.2. (continued)

State	Total number of Medicaid beneficiaries with OUD	Adult		Children		Pregnant		Aged, blind, disabled		VIII Group adult		Unknown	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	28,208	3,831	13.6	275	1.0	DS	DS	7,890	28.0	16,047	56.9	DS	DS
New Mexico*	6,269	2,726	43.5	199	3.2	DS	DS	3,319	52.9	DS	DS	0	0.0
New York*	117,969	13,311	11.3	476	0.4	DS	DS	30,993	26.3	72,870	61.8	DS	DS
North Carolina	26,252	13,154	50.1	404	1.5	172	0.7	12,302	46.9	0	0.0	220	0.8
North Dakota*	317	156	49.2	DS	DS	DS	DS	113	35.6	DS	DS	20	6.3
Ohio*	102,734	27,073	26.4	1,776	1.7	1,880	1.8	15,114	14.7	56,253	54.8	638	0.6
Oklahoma	8,737	201	2.3	250	2.9	426	4.9	7,860	90.0	0	0.0	0	0.0
Oregon*	22,106	3,257	14.7	202	0.9	257	1.2	1,180	5.3	14,252	64.5	2,958	13.4
Pennsylvania*	108,875	19,282	17.7	692	0.6	666	0.6	19,665	18.1	64,330	59.1	4,240	3.9
Puerto Rico*	5,620	697	12.4	DS	DS	DS	DS	1,716	30.5	3,031	53.9	132	2.3
Rhode Island*	9,826	2,221	22.6	DS	DS	DS	DS	2,579	26.2	4,987	50.8	0	0.0
South Carolina	6,457	3,652	56.6	183	2.8	155	2.4	2,467	38.2	0	0.0	0	0.0
South Dakota	505	201	39.8	DS	DS	DS	DS	244	48.3	0	0.0	0	0.0
Tennessee	18,377	8,503	46.3	400	2.2	1,975	10.7	6,655	36.2	0	0.0	844	4.6
Texas	17,085	1,000	5.9	615	3.6	1,382	8.1	11,676	68.3	0	0.0	2,412	14.1
Utah	3,910	1,572	40.2	63	1.6	260	6.6	1,945	49.7	0	0.0	70	1.8
Vermont*	9,906	3,410	34.4	DS	DS	DS	DS	6,404	64.6	0	0.0	DS	DS
Virginia	15,142	5,808	38.4	192	1.3	472	3.1	8,598	56.8	0	0.0	72	0.5
Washington*	44,119	1,399	3.2	363	0.8	149	0.3	8,956	20.3	33,166	75.2	86	0.2
West Virginia*	20,453	3,897	19.1	127	0.6	320	1.6	3,109	15.2	12,482	61.0	518	2.5
Wisconsin	22,546	16,635	73.8	116	0.5	409	1.8	5,386	23.9	0	0.0	0	0.0
Wyoming	616	291	47.2	36	5.8	28	4.5	261	42.4	0	0.0	0	0.0

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with an OUD, we used diagnosis codes, National Drug Codes, and select procedure codes on Medicaid claims. We identified polysubstance use disorder on the basis of a diagnosis of two or more SUD or a polysubstance diagnosis code.

In New Mexico and North Dakota, the number of beneficiaries in VIII Group adult is very low even though both states expanded Medicaid. New Mexico is reporting virtually all of its VIII Group adult beneficiaries as having restricted benefits, so they are not included in the SUD Data Book. North Dakota is not reporting VIII Group adult beneficiaries in T-MSIS.

Beneficiaries in the "unknown" enrollment category did not have enough information on their enrollment record to be included in any of the other standard categories.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Appendix Table D.3.i. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by major enrollment category

State	Total number of Medicaid beneficiaries	Adult			Children			Pregnant		
		Total number	Number with OUD	Percent	Total number	Number with OUD	Percent	Total number	Number with OUD	Percent
United States	53,462,361	11,142,347	272,922	2.4	10,223,898	12,059	0.1	1,390,129	14,285	1.0
Alabama	512,074	111,099	4,877	4.4	155,840	157	0.1	22,446	DS	DS
Alaska*	158,199	45,426	1,265	2.8	34,271	90	0.3	4,897	108	2.2
Arizona*	1,512,837	357,222	6,715	1.9	347,758	480	0.1	36,825	465	1.3
Arkansas*	460,867	81,549	415	0.5	89,525	35	0.0	86,322	43	0.0
California*	10,050,069	2,237,614	13,384	0.6	1,269,395	487	0.0	80,904	86	0.1
Colorado*	1,052,116	768,043	13,406	1.7	179,697	235	0.1	22,835	DS	DS
Connecticut*	713,934	189,957	6,764	3.6	131,066	168	0.1	12,447	182	1.5
Delaware*	179,030	39,070	2,558	6.5	33,367	DS	DS	4,889	235	4.8
District of Columbia*	200,116	52,877	275	0.5	26,824	DS	DS	555	DS	DS
Florida	2,410,115	668,458	12,907	1.9	799,961	439	0.1	56,559	1,011	1.8
Georgia	1,110,320	382,166	3,552	0.9	307,328	193	0.1	86,703	379	0.4
Hawaii*	307,278	33,289	392	1.2	57,066	DS	DS	21,156	167	0.8
Idaho	161,110	50,730	995	2.0	54,916	DS	DS	0	.	.
Illinois*	311,088	171,020	2,477	1.4	73,783	69	0.1	7,989	DS	DS
Indiana*	1,097,727	76,544	1,547	2.0	198,609	326	0.2	34,352	489	1.4
Iowa*	627,465	327,194	3,959	1.2	7,177	DS	DS	54,775	88	0.2
Kansas	249,801	79,903	1,099	1.4	65,731	66	0.1	16,185	84	0.5
Kentucky*	1,115,633	128,826	8,890	6.9	148,933	252	0.2	17,535	535	3.1
Louisiana*	594,525	100,723	3,536	3.5	214,678	132	0.1	12,700	130	1.0
Maine	169,150	46,620	4,466	9.6	42,301	113	0.3	8,913	726	8.1
Maryland*	980,899	241,452	15,253	6.3	189,801	1,151	0.6	DS	DS	DS
Massachusetts*	1,429,779	397,087	15,394	3.9	128,952	256	0.2	9,196	248	2.7
Michigan*	2,050,490	408,053	10,191	2.5	307,872	327	0.1	15,587	72	0.5
Minnesota*	905,247	203,878	4,560	2.2	218,462	537	0.2	27,840	327	1.2
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	528,501	63,562	1,480	2.3	92,781	78	0.1	13,865	178	1.3
New Hampshire*	165,862	14,543	1,489	10.2	33,950	49	0.1	3,922	181	4.6

Appendix Table D.3.i. (continued)

State	Total number of Medicaid beneficiaries	Adult			Children			Pregnant		
		Total number	Number with OUD	Percent	Total number	Number with OUD	Percent	Total number	Number with OUD	Percent
New Jersey*	1,358,106	118,307	3,831	3.2	243,542	275	0.1	24,687	DS	DS
New Mexico*	255,223	60,534	2,726	4.5	117,306	199	0.2	3,206	DS	DS
New York*	4,814,854	595,968	13,311	2.2	547,722	476	0.1	68,762	DS	DS
North Carolina	1,106,940	238,786	13,154	5.5	374,138	404	0.1	24,704	172	0.7
North Dakota*	35,353	12,260	156	1.3	6,574	DS	DS	2,380	DS	DS
Ohio*	2,459,666	486,964	27,073	5.6	492,037	1,776	0.4	53,955	1,880	3.5
Oklahoma	438,682	DS	DS	DS	157,941	250	0.2	33,799	426	1.3
Oregon*	844,280	90,792	3,257	3.6	130,847	202	0.2	16,528	257	1.6
Pennsylvania*	2,336,316	285,590	19,282	6.8	351,165	692	0.2	29,998	666	2.2
Puerto Rico*	2,548,531	578,829	697	0.1	351,139	DS	DS	6,813	DS	DS
Rhode Island*	267,077	68,737	2,221	3.2	37,158	DS	DS	716	DS	DS
South Carolina	620,945	180,724	3,652	2.0	199,151	183	0.1	16,320	155	0.9
South Dakota	71,413	19,942	201	1.0	23,620	50	0.2	DS	DS	DS
Tennessee	1,066,003	430,165	8,503	2.0	167,212	400	0.2	68,157	1,975	2.9
Texas	2,500,164	DS	DS	DS	1,030,594	615	0.1	283,771	1,382	0.5
Utah	198,617	48,609	1,572	3.2	69,593	63	0.1	17,061	260	1.5
Vermont*	143,771	36,664	3,410	9.3	26,848	DS	DS	32	DS	DS
Virginia	671,301	128,538	5,808	4.5	187,862	192	0.1	31,996	472	1.5
Washington*	1,442,574	62,051	1,399	2.3	286,245	363	0.1	15,275	149	1.0
West Virginia*	459,782	50,100	3,897	7.8	73,428	127	0.2	7,835	320	4.1
Wisconsin	724,820	360,479	16,635	4.6	124,529	116	0.1	21,040	409	1.9
Wyoming	43,711	11,403	291	2.6	15,203	36	0.2	3,697	28	0.8

Appendix Table D.3.ii. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by major enrollment category

State	Total number of Medicaid beneficiaries	Aged, blind, disabled			VIII Group adult			Unknown		
		Total Number	Number with OUD	Percent	Total Number	Number with OUD	Percent	Total Number	Number with OUD	Percent
United States	53,462,361	13,019,040	313,976	2.4	16,138,658	532,809	3.3	1,407,885	16,178	1.1
Alabama	512,074	221,702	5,369	2.4	0	.	.	987	DS	DS
Alaska*	158,199	27,267	662	2.4	46,338	2,346	5.1	0	.	.
Arizona*	1,512,837	242,443	5,883	2.4	473,935	15,101	3.2	54,654	0	0.0
Arkansas*	460,867	187,568	761	0.4	9,688	24	0.2	6,215	11	0.2
California*	10,050,069	2,179,699	28,406	1.3	4,220,473	42,238	1.0	61,984	118	0.2
Colorado*	1,052,116	81,052	1,956	2.4	0	.	.	489	DS	DS
Connecticut*	713,934	95,900	4,168	4.3	284,564	23,111	8.1	0	.	.
Delaware*	179,030	22,298	839	3.8	79,347	6,284	7.9	59	DS	DS
District of Columbia*	200,116	46,741	2,120	4.5	72,827	1,139	1.6	292	21	7.2
Florida	2,410,115	769,256	12,213	1.6	0	.	.	115,881	711	0.6
Georgia	1,110,320	334,024	6,975	2.1	0	.	.	99	0	0.0
Hawaii*	307,278	51,277	1,180	2.3	136,471	1,968	1.4	8,019	DS	DS
Idaho	161,110	54,389	1,352	2.5	0	.	.	1,075	DS	DS
Illinois*	311,088	30,314	177	0.6	27,956	95	0.3	26	DS	DS
Indiana*	1,097,727	250,468	5,024	2.0	518,729	20,808	4.0	19,025	192	1.0
Iowa*	627,465	112,170	1,400	1.2	0	.	.	126,149	DS	DS
Kansas	249,801	54,606	989	1.8	0	.	.	33,376	507	1.5
Kentucky*	1,115,633	223,255	7,468	3.3	589,092	30,324	5.1	7,992	61	0.8
Louisiana*	594,525	213,818	3,201	1.5	28	DS	DS	52,578	DS	DS
Maine	169,150	62,105	3,749	6.0	0	.	.	9,211	274	3.0
Maryland*	980,899	168,061	13,069	7.8	370,116	36,155	9.8	DS	DS	DS
Massachusetts*	1,429,779	462,747	29,494	6.4	419,227	33,939	8.1	12,570	180	1.4
Michigan*	2,050,490	455,433	10,754	2.4	863,481	21,794	2.5	64	0	0.0
Minnesota*	905,247	186,824	5,859	3.1	268,243	10,094	3.8	0	.	.
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	528,501	43,898	1,308	3.0	290,328	6,853	2.4	24,067	684	2.8
New Hampshire*	165,862	21,737	1,168	5.4	75,070	3,118	4.2	16,640	1,209	7.3

Appendix Table D.3.ii. (continued)

State	Total number of Medicaid beneficiaries	Aged, blind, disabled			VIII Group adult			Unknown		
		Total Number	Number with OUD	Percent	Total Number	Number with OUD	Percent	Total Number	Number with OUD	Percent
New Jersey*	1,358,106	299,823	7,890	2.6	666,972	16,047	2.4	4,775	DS	DS
New Mexico*	255,223	74,100	3,319	4.5	77	DS	DS	0	.	.
New York*	4,814,854	1,130,221	30,993	2.7	2,472,052	72,870	2.9	129	DS	DS
North Carolina	1,106,940	425,216	12,302	2.9	0	.	.	44,096	220	0.5
North Dakota*	35,353	7,978	113	1.4	79	DS	DS	6,082	20	0.3
Ohio*	2,459,666	445,689	15,114	3.4	862,399	56,253	6.5	118,622	638	0.5
Oklahoma	438,682	230,897	7,860	3.4	0	.	.	DS	DS	DS
Oregon*	844,280	42,453	1,180	2.8	462,924	14,252	3.1	100,736	2,958	2.9
Pennsylvania*	2,336,316	590,498	19,665	3.3	966,073	64,330	6.7	112,992	4,240	3.8
Puerto Rico*	2,548,531	730,491	1,716	0.2	791,061	3,031	0.4	90,198	132	0.1
Rhode Island*	267,077	66,985	2,579	3.9	93,481	4,987	5.3	0	.	.
South Carolina	620,945	224,750	2,467	1.1	0	.	.	0	.	.
South Dakota	71,413	23,755	244	1.0	0	.	.	DS	DS	DS
Tennessee	1,066,003	294,766	6,655	2.3	0	.	.	105,703	844	0.8
Texas	2,500,164	829,348	11,676	1.4	DS	DS	DS	247,657	2,412	1.0
Utah	198,617	61,869	1,945	3.1	0	.	.	1,485	70	4.7
Vermont*	143,771	79,446	6,404	8.1	0	.	.	781	DS	DS
Virginia	671,301	313,039	8,598	2.7	39	0	0.0	9,827	72	0.7
Washington*	1,442,574	214,527	8,956	4.2	859,940	33,166	3.9	4,536	86	1.9
West Virginia*	459,782	101,957	3,109	3.0	217,648	12,482	5.7	8,814	518	5.9
Wisconsin	724,820	218,772	5,386	2.5	0	.	.	0	.	.
Wyoming	43,711	13,408	261	1.9	0	.	.	0	.	.

Source: Mathematica's analysis of 2017 TAF data version 2 Medicaid beneficiaries 12 years and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with an OUD, we used diagnosis codes, National Drug Codes, and select procedure codes on Medicaid claims.

In New Mexico and North Dakota, the number of beneficiaries in VIII Group adult is very low even though both states expanded Medicaid. New Mexico is reporting virtually all of its VIII Group adult beneficiaries as having restricted benefits, so they are not included in the SUD Data Book. North Dakota is not reporting VIII Group adult beneficiaries in T-MSIS.

Beneficiaries in the "unknown" enrollment category did not have enough information on their enrollment record to be included in any of the other standard categories.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Appendix Table D.4. SUD treatment service types *not* billed for Medicaid beneficiaries with an OUD, by state

Service	Count of states that <i>do not</i> cover the service	States that <i>do not</i> cover the service
Case management	9	Alabama, Arkansas*, Delaware*, Idaho, Louisiana*, Maryland*, North Carolina, Puerto Rico*, South Dakota
Community support	1	Idaho
Consultation	1	North Dakota*
Counseling	0	—
Detoxification	1	Puerto Rico*
Emergency services	0	—
Inpatient care	0	—
Intervention services	1	South Dakota
MAT	0	—
Medication management	5	Colorado*, Kansas, Maryland*, Puerto Rico*, and South Dakota
Observation care	0	—
Partial hospitalization	17	Alaska*, Arizona*, Arkansas*, Colorado*, District of Columbia*, Idaho, Illinois*, Kansas, Louisiana*, Maine, New Hampshire*, Oregon*, South Carolina, South Dakota, Vermont*, Washington*, Wyoming
Peer support	23	Alabama, Arkansas*, California*, Connecticut*, District of Columbia*, Hawaii*, Idaho, Illinois*, Louisiana*, Maine, Maryland*, New Jersey*, New Mexico*, New York*, North Dakota*, Oklahoma, Puerto Rico, South Dakota, Texas, Vermont*, Virginia, West Virginia*, Wisconsin
Physician services	0	—
Pharmacotherapy	0	—
Screening and assessment	0	—
Treatment program	5	Alaska*, District of Columbia*, Idaho, Illinois*, Wyoming
Other services	0	—

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: "Other" services include services without sufficient detail to be categorized and services that did not fit into any of the other categories.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

Appendix Table D.5.i. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by service type

State	Total number of Medicaid beneficiaries with an OUD	Case management		Community support		Consultation		Counseling		Detoxification		Emergency services	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	1,164,950	84,604	7.3	24,979	2.1	97,135	8.3	440,776	37.8	95,394	8.2	435,935	37.4
Alabama	10,516	0	0.0	23	0.2	978	9.3	1,218	11.6	733	7.0	5,133	48.8
Alaska*	4,471	316	7.1	1,076	24.1	129	2.9	754	16.9	242	5.4	1,670	37.4
Arizona*	28,644	15,223	53.1	715	2.5	2,561	8.9	12,502	43.6	2,189	7.6	11,877	41.5
Arkansas*	1,289	0	0.0	DS	DS	99	7.7	114	8.8	38	2.9	513	39.8
California*	84,719	1,589	1.9	400	0.5	8,148	9.6	27,033	31.9	3,923	4.6	33,386	39.4
Colorado*	15,818	444	2.8	85	0.5	13	0.1	2,272	14.4	146	0.9	6,661	42.1
Connecticut*	34,393	DS	DS	DS	DS	7,715	22.4	10,628	30.9	994	2.9	10,599	30.8
Delaware*	9,956	0	0.0	36	0.4	44	0.4	5,382	54.1	901	9.0	3,257	32.7
District of Columbia*	3,569	203	5.7	15	0.4	577	16.2	1,400	39.2	258	7.2	1,858	52.1
Florida	27,281	90	0.3	4,132	15.1	6,628	24.3	1,909	7.0	952	3.5	13,654	50.0
Georgia	11,099	91	0.8	326	2.9	273	2.5	1,512	13.6	462	4.2	4,545	40.9
Hawaii*	3,736	DS	DS	11	0.3	281	7.5	894	23.9	DS	DS	1,428	38.2
Idaho	2,393	0	0.0	0	0.0	288	12.0	20	0.8	18	0.8	527	22.0
Illinois*	2,833	25	0.9	16	0.6	617	21.8	410	14.5	344	12.1	926	32.7
Indiana*	28,386	1,958	6.9	23	0.1	671	2.4	9,362	33.0	3,578	12.6	7,927	27.9
Iowa*	5,459	45	0.8	148	2.7	501	9.2	1,850	33.9	141	2.6	2,273	41.6
Kansas	2,745	43	1.6	22	0.8	DS	DS	624	22.7	33	1.2	753	27.4
Kentucky*	47,530	5,967	12.6	332	0.7	1,503	3.2	23,042	48.5	2,055	4.3	15,504	32.6
Louisiana*	7,067	0	0.0	125	1.8	503	7.1	1,069	15.1	571	8.1	3,043	43.1
Maine	9,328	137	1.5	174	1.9	1,337	14.3	3,933	42.2	84	0.9	2,070	22.2
Maryland*	65,868	0	0.0	22	0.0	2,820	4.3	40,135	60.9	3,103	4.7	21,147	32.1
Massachusetts*	79,511	15	0.0	6,313	7.9	6,870	8.6	29,983	37.7	9,176	11.5	30,756	38.7
Michigan*	43,138	2,460	5.7	2,038	4.7	1,353	3.1	21,048	48.8	6,680	15.5	17,983	41.7
Minnesota*	21,377	432	2.0	216	1.0	1,110	5.2	3,104	14.5	687	3.2	8,521	39.9
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	185	1.7	31	0.3	164	1.5	1,270	12.0	774	7.3	1,937	18.3
New Hampshire*	7,214	353	4.9	190	2.6	1,119	15.5	2,272	31.5	385	5.3	1,881	26.1

Appendix Table D.5.i. (continued)

State	Total number of Medicaid beneficiaries with an OUD	Case management		Community support		Consultation		Counseling		Detoxification		Emergency services	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	28,208	308	1.1	113	0.4	1,426	5.1	7,222	25.6	3,744	13.3	9,977	35.4
New Mexico*	6,269	DS	DS	156	2.5	438	7.0	1,868	29.8	74	1.2	2,008	32.0
New York*	117,969	14	0.0	59	0.1	1,822	1.5	41,429	35.1	12,509	10.6	45,518	38.6
North Carolina	26,252	0	0.0	135	0.5	1,792	6.8	9,694	36.9	353	1.3	10,152	38.7
North Dakota*	317	DS	DS	DS	DS	0	0.0	98	30.9	DS	DS	118	37.2
Ohio*	102,734	39,357	38.3	202	0.2	13,580	13.2	61,860	60.2	10,019	9.8	50,206	48.9
Oklahoma	8,737	606	6.9	618	7.1	334	3.8	1,778	20.4	126	1.4	2,616	29.9
Oregon*	22,106	3,185	14.4	111	0.5	21	0.1	13,256	60.0	2,975	13.5	8,040	36.4
Pennsylvania*	108,875	3,705	3.4	4,112	3.8	21,452	19.7	43,983	40.4	16,818	15.4	37,444	34.4
Puerto Rico*	5,620	0	0.0	63	1.1	236	4.2	2,391	42.5	0	0.0	375	6.7
Rhode Island*	9,826	1,357	13.8	17	0.2	286	2.9	4,566	46.5	377	3.8	2,215	22.5
South Carolina	6,457	211	3.3	161	2.5	286	4.4	1,621	25.1	424	6.6	2,762	42.8
South Dakota	505	0	0.0	DS	DS	DS	DS	38	7.5	DS	DS	225	44.6
Tennessee	18,377	281	1.5	36	0.2	354	1.9	4,041	22.0	1,940	10.6	7,487	40.7
Texas	17,085	203	1.2	489	2.9	575	3.4	3,278	19.2	993	5.8	6,798	39.8
Utah	3,910	45	1.2	159	4.1	50	1.3	329	8.4	153	3.9	1,013	25.9
Vermont*	9,906	985	9.9	367	3.7	243	2.5	3,319	33.5	788	8.0	2,459	24.8
Virginia	15,142	217	1.4	28	0.2	64	0.4	2,448	16.2	432	2.9	4,677	30.9
Washington*	44,119	3,129	7.1	1,262	2.9	4,344	9.8	14,440	32.7	3,737	8.5	17,375	39.4
West Virginia*	20,453	1,210	5.9	28	0.1	1,887	9.2	12,726	62.2	292	1.4	6,036	29.5
Wisconsin	22,546	144	0.6	299	1.3	1,584	7.0	6,546	29.0	1,173	5.2	8,375	37.1
Wyoming	616	71	11.5	95	15.4	59	9.6	105	17.0	DS	DS	230	37.3

Appendix Table D.5.ii. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by service type

State	Total number of Medicaid beneficiaries with an OUD	Inpatient care		Intervention		MAT		Medication management		Observation care		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	1,164,950	331,580	28.5	63,346	5.4	673,806	57.8	20,443	1.8	50,887	4.4	110,576	9.5
Alabama	10,516	3,925	37.3	42	0.4	6,170	58.7	395	3.8	256	2.4	665	6.3
Alaska*	4,471	1,171	26.2	147	3.3	2,659	59.5	328	7.3	171	3.8	1,371	30.7
Arizona*	28,644	11,349	39.6	5,230	18.3	11,708	40.9	6,451	22.5	2,337	8.2	11,377	39.7
Arkansas*	1,289	654	50.7	DS	DS	437	33.9	DS	DS	74	5.7	13	1.0
California*	84,719	24,756	29.2	741	0.9	51,277	60.5	343	0.4	1,700	2.0	812	1.0
Colorado*	15,818	3,978	25.1	1,309	8.3	9,312	58.9	0	0.0	1,136	7.2	139	0.9
Connecticut*	34,393	6,456	18.8	555	1.6	26,362	76.6	19	0.1	1,256	3.7	1,513	4.4
Delaware*	9,956	3,266	32.8	237	2.4	6,706	67.4	15	0.2	343	3.4	614	6.2
District of Columbia*	3,569	1,656	46.4	156	4.4	2,055	57.6	17	0.5	170	4.8	376	10.5
Florida	27,281	13,471	49.4	251	0.9	12,905	47.3	481	1.8	2,679	9.8	3,947	14.5
Georgia	11,099	4,386	39.5	110	1.0	4,079	36.8	36	0.3	721	6.5	780	7.0
Hawaii*	3,736	1,027	27.5	65	1.7	1,901	50.9	DS	DS	233	6.2	DS	DS
Idaho	2,393	864	36.1	DS	DS	1,013	42.3	DS	DS	44	1.8	34	1.4
Illinois*	2,833	1,378	48.6	44	1.6	960	33.9	20	0.7	137	4.8	44	1.6
Indiana*	28,386	10,170	35.8	685	2.4	17,411	61.3	1,012	3.6	1,074	3.8	1,618	5.7
Iowa*	5,459	2,062	37.8	26	0.5	2,270	41.6	DS	DS	332	6.1	95	1.7
Kansas	2,745	880	32.1	68	2.5	726	26.4	0	0.0	99	3.6	49	1.8
Kentucky*	47,530	12,784	26.9	1,904	4.0	30,561	64.3	41	0.1	968	2.0	3,628	7.6
Louisiana*	7,067	2,817	39.9	50	0.7	3,492	49.4	20	0.3	225	3.2	47	0.7
Maine	9,328	1,014	10.9	324	3.5	7,290	78.2	1,557	16.7	162	1.7	46	0.5
Maryland*	65,868	12,257	18.6	541	0.8	46,921	71.2	0	0.0	3,460	5.3	8,451	12.8
Massachusetts*	79,511	20,794	26.2	7,695	9.7	57,475	72.3	297	0.4	4,939	6.2	1,273	1.6
Michigan*	43,138	10,467	24.3	2,834	6.6	19,533	45.3	430	1.0	1,638	3.8	1,504	3.5
Minnesota*	21,377	6,622	31.0	506	2.4	11,785	55.1	22	0.1	1,225	5.7	2,260	10.6
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	2,261	21.4	349	3.3	3,233	30.6	514	4.9	203	1.9	1,200	11.3
New Hampshire*	7,214	977	13.5	318	4.4	5,172	71.7	DS	DS	170	2.4	21	0.3

Appendix Table D.5.ii. (continued)

State	Total number of Medicaid beneficiaries with an OUD	Inpatient care		Intervention		MAT		Medication management		Observation care		Other	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	28,208	8,210	29.1	411	1.5	17,204	61.0	129	0.5	1,398	5.0	503	1.8
New Mexico*	6,269	1,749	27.9	81	1.3	4,023	64.2	31	0.5	252	4.0	537	8.6
New York*	117,969	41,762	35.4	4,634	3.9	52,387	44.4	2,562	2.2	3,604	3.1	1,078	0.9
North Carolina	26,252	8,211	31.3	1,286	4.9	12,029	45.8	DS	DS	1,176	4.5	847	3.2
North Dakota*	317	152	47.9	DS	DS	107	33.8	DS	DS	31	9.8	DS	DS
Ohio*	102,734	29,116	28.3	7,038	6.9	64,498	62.8	55	0.1	7,329	7.1	37,380	36.4
Oklahoma	8,737	2,954	33.8	93	1.1	2,627	30.1	23	0.3	194	2.2	886	10.1
Oregon*	22,106	4,704	21.3	687	3.1	12,929	58.5	84	0.4	696	3.1	4,600	20.8
Pennsylvania*	108,875	25,329	23.3	2,388	2.2	64,691	59.4	4,987	4.6	4,042	3.7	4,961	4.6
Puerto Rico*	5,620	845	15.0	262	4.7	2,994	53.3	0	0.0	111	2.0	DS	DS
Rhode Island*	9,826	1,163	11.8	434	4.4	8,462	86.1	DS	DS	125	1.3	1,319	13.4
South Carolina	6,457	2,327	36.0	197	3.1	2,889	44.7	20	0.3	308	4.8	1,253	19.4
South Dakota	505	217	43.0	0	0.0	159	31.5	0	0.0	29	5.7	DS	DS
Tennessee	18,377	9,150	49.8	649	3.5	5,819	31.7	269	1.5	975	5.3	276	1.5
Texas	17,085	6,758	39.6	155	0.9	8,227	48.2	216	1.3	1,278	7.5	919	5.4
Utah	3,910	760	19.4	DS	DS	1,910	48.8	DS	DS	35	0.9	83	2.1
Vermont*	9,906	1,722	17.4	466	4.7	7,715	77.9	DS	DS	132	1.3	162	1.6
Virginia	15,142	4,015	26.5	21	0.1	7,133	47.1	11	0.1	354	2.3	69	0.5
Washington*	44,119	10,302	23.4	11,770	26.7	25,303	57.4	58	0.1	1,270	2.9	11,405	25.9
West Virginia*	20,453	4,059	19.8	1,083	5.3	14,220	69.5	DS	DS	617	3.0	1,377	6.7
Wisconsin	22,546	6,459	28.6	7,504	33.3	14,874	66.0	DS	DS	1,148	5.1	983	4.4
Wyoming	616	174	28.2	DS	DS	193	31.3	DS	DS	31	5.0	61	9.9

Appendix Table D.5.iii. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by service type

State	Total number of Medicaid beneficiaries with an OUD	Partial hospitalization		Peer support		Physician services		Pharmacotherapy		Screening/assessment		Treatment program	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	1,164,950	4,185	0.4	13,016	1.1	462,280	39.7	57,060	4.9	333,971	28.7	135,439	11.6
Alabama	10,516	DS	DS	0	0.0	3,754	35.7	685	6.5	1,192	11.3	18	0.2
Alaska*	4,471	0	0.0	41	0.9	2,818	63.0	605	13.5	1,357	30.4	0	0.0
Arizona*	28,644	0	0.0	4,410	15.4	10,759	37.6	1,416	4.9	13,681	47.8	2,753	9.6
Arkansas*	1,289	0	0.0	0	0.0	215	16.7	DS	DS	102	7.9	DS	DS
California*	84,719	DS	DS	0	0.0	19,556	23.1	3,711	4.4	4,041	4.8	1,650	1.9
Colorado*	15,818	0	0.0	DS	DS	7,793	49.3	914	5.8	2,010	12.7	12	0.1
Connecticut*	34,393	459	1.3	0	0.0	10,049	29.2	418	1.2	9,163	26.6	4,894	14.2
Delaware*	9,956	491	4.9	611	6.1	5,974	60.0	380	3.8	1,817	18.3	848	8.5
District of Columbia*	3,569	0	0.0	0	0.0	1,438	40.3	92	2.6	1,069	30.0	0	0.0
Florida	27,281	DS	DS	DS	DS	4,706	17.3	853	3.1	4,710	17.3	14	0.1
Georgia	11,099	111	1.0	23	0.2	3,911	35.2	187	1.7	1,703	15.3	133	1.2
Hawaii*	3,736	DS	DS	0	0.0	1,686	45.1	190	5.1	613	16.4	42	1.1
Idaho	2,393	0	0.0	0	0.0	928	38.8	17	0.7	126	5.3	0	0.0
Illinois*	2,833	0	0.0	0	0.0	700	24.7	17	0.6	463	16.3	0	0.0
Indiana*	28,386	225	0.8	48	0.2	11,336	39.9	1,237	4.4	8,445	29.8	664	2.3
Iowa*	5,459	188	3.4	DS	DS	2,467	45.2	446	8.2	2,091	38.3	733	13.4
Kansas	2,745	0	0.0	95	3.5	762	27.8	55	2.0	601	21.9	272	9.9
Kentucky*	47,530	19	0.0	2,820	5.9	27,621	58.1	3,386	7.1	14,065	29.6	5,389	11.3
Louisiana*	7,067	0	0.0	0	0.0	1,805	25.5	403	5.7	1,248	17.7	1,171	16.6
Maine	9,328	0	0.0	0	0.0	4,635	49.7	316	3.4	3,587	38.5	954	10.2
Maryland*	65,868	DS	DS	0	0.0	28,833	43.8	580	0.9	32,712	49.7	13,078	19.9
Massachusetts*	79,511	625	0.8	23	0.0	42,542	53.5	4,166	5.2	17,891	22.5	13,362	16.8
Michigan*	43,138	DS	DS	2,605	6.0	22,170	51.4	3,664	8.5	18,767	43.5	8,771	20.3
Minnesota*	21,377	17	0.1	21	0.1	9,574	44.8	1,359	6.4	8,257	38.6	6,166	28.8
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	DS	DS	57	0.5	1,920	18.1	339	3.2	1,469	13.9	170	1.6
New Hampshire*	7,214	0	0.0	44	0.6	3,168	43.9	288	4.0	1,672	23.2	1,059	14.7

Appendix Table D.5.iii. (continued)

State	Total number of Medicaid beneficiaries with an OUD	Partial hospitalization		Peer support		Physician services		Pharmacotherapy		Screening/assessment		Treatment program	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	28,208	528	1.9	0	0.0	10,512	37.3	1,063	3.8	9,831	34.9	2,684	9.5
New Mexico*	6,269	26	0.4	0	0.0	2,910	46.4	488	7.8	1,923	30.7	224	3.6
New York*	117,969	242	0.2	0	0.0	37,616	31.9	1,234	1.0	13,601	11.5	3,643	3.1
North Carolina	26,252	DS	DS	302	1.2	13,746	52.4	1,579	6.0	6,069	23.1	2,224	8.5
North Dakota*	317	26	8.2	0	0.0	115	36.3	11	3.5	87	27.4	44	13.9
Ohio*	102,734	188	0.2	DS	DS	39,681	38.6	15,317	14.9	61,199	59.6	17,746	17.3
Oklahoma	8,737	DS	DS	0	0.0	3,367	38.5	456	5.2	928	10.6	DS	DS
Oregon*	22,106	0	0.0	1,174	5.3	9,262	41.9	2,413	10.9	8,613	39.0	2,208	10.0
Pennsylvania*	108,875	71	0.1	66	0.1	42,081	38.7	1,499	1.4	32,931	30.2	33,638	30.9
Puerto Rico*	5,620	11	0.2	0	0.0	2,846	50.6	12	0.2	1,091	19.4	DS	DS
Rhode Island*	9,826	156	1.6	275	2.8	3,691	37.6	91	0.9	2,120	21.6	541	5.5
South Carolina	6,457	0	0.0	47	0.7	2,256	34.9	71	1.1	1,763	27.3	603	9.3
South Dakota	505	0	0.0	0	0.0	130	25.7	23	4.6	52	10.3	15	3.0
Tennessee	18,377	633	3.4	DS	DS	8,342	45.4	941	5.1	4,113	22.4	2,863	15.6
Texas	17,085	142	0.8	0	0.0	4,379	25.6	835	4.9	1,979	11.6	549	3.2
Utah	3,910	DS	DS	16	0.4	433	11.1	110	2.8	278	7.1	50	1.3
Vermont*	9,906	0	0.0	0	0.0	3,234	32.6	57	0.6	2,002	20.2	1,182	11.9
Virginia	15,142	13	0.1	0	0.0	4,059	26.8	378	2.5	1,277	8.4	140	0.9
Washington*	44,119	0	0.0	338	0.8	18,841	42.7	2,623	5.9	13,410	30.4	3,880	8.8
West Virginia*	20,453	14	0.1	0	0.0	13,735	67.2	1,216	5.9	7,457	36.5	416	2.0
Wisconsin	22,546	DS	DS	0	0.0	9,634	42.7	884	3.9	10,286	45.6	636	2.8
Wyoming	616	0	0.0	DS	DS	290	47.1	35	5.7	109	17.7	0	0.0

Source: Mathematica's analysis of the 2017 TAF data version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with an OUD, we used diagnosis codes, National Drug Codes, and select procedure codes on Medicaid claims.

We determined service types on the basis of National Drug Codes, procedure codes, and revenue codes.

The sum of the percentages within each state will not be 100 because many Medicaid beneficiaries treated for an OUD received more than one service.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B

Appendix Table D.6. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by service setting

State	Total number of Medicaid beneficiaries with an OUD	Treated in an inpatient setting		Treated in an outpatient setting		Treated in a residential setting		Treated in a home-based setting		Treated in a community-based setting		Treated in an unknown setting	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States	1,164,950	361,423	31.0	1,068,439	91.7	50,294	4.3	25,412	2.2	16,911	1.5	187,883	16.1
Alabama	10,516	4,036	38.4	9,671	92.0	210	2.0	80	0.8	20	0.2	12	0.1
Alaska*	4,471	1,180	26.4	4,140	92.6	442	9.9	28	0.6	1,061	23.7	40	0.9
Arizona*	28,644	11,793	41.2	25,709	89.8	1,025	3.6	1,821	6.4	255	0.9	10,000	34.9
Arkansas*	1,289	613	47.6	727	56.4	64	5.0	DS	DS	DS	DS	615	47.7
California*	84,719	25,223	29.8	76,306	90.1	4,436	5.2	453	0.5	278	0.3	21,412	25.3
Colorado*	15,818	4,039	25.5	13,408	84.8	26	0.2	45	0.3	51	0.3	10,346	65.4
Connecticut*	34,393	7,458	21.7	33,744	98.1	498	1.4	443	1.3	DS	DS	1,576	4.6
Delaware*	9,956	2,619	26.3	9,482	95.2	1,805	18.1	30	0.3	20	0.2	64	0.6
District of Columbia*	3,569	1,562	43.8	3,239	90.8	409	11.5	26	0.7	DS	DS	23	0.6
Florida	27,281	14,183	52.0	21,246	77.9	332	1.2	313	1.1	4,006	14.7	70	0.3
Georgia	11,099	4,527	40.8	9,643	86.9	68	0.6	153	1.4	278	2.5	202	1.8
Hawaii*	3,736	1,048	28.1	3,459	92.6	49	1.3	DS	DS	11	0.3	DS	DS
Idaho	2,393	945	39.5	1,993	83.3	77	3.2	DS	DS	0	0.0	73	3.1
Illinois*	2,833	1,477	52.1	1,995	70.4	73	2.6	11	0.4	14	0.5	901	31.8
Indiana*	28,386	10,598	37.3	26,006	91.6	437	1.5	268	0.9	23	0.1	605	2.1
Iowa*	5,459	2,091	38.3	4,987	91.4	394	7.2	31	0.6	88	1.6	105	1.9
Kansas	2,745	1,092	39.8	2,359	85.9	249	9.1	65	2.4	17	0.6	55	2.0
Kentucky*	47,530	13,680	28.8	44,995	94.7	4,084	8.6	207	0.4	327	0.7	559	1.2
Louisiana*	7,067	2,665	37.7	6,237	88.3	1,742	24.6	49	0.7	DS	DS	370	5.2
Maine	9,328	1,066	11.4	9,242	99.1	35	0.4	71	0.8	135	1.4	296	3.2
Maryland*	65,868	12,622	19.2	64,594	98.1	4,353	6.6	313	0.5	22	0.0	6,679	10.1
Massachusetts*	79,511	30,966	38.9	76,347	96.0	4,910	6.2	1,717	2.2	5,939	7.5	10,397	13.1
Michigan*	43,138	10,353	24.0	26,204	60.7	500	1.2	92	0.2	62	0.1	36,478	84.6
Minnesota*	21,377	6,714	31.4	20,069	93.9	383	1.8	3,949	18.5	96	0.4	1,332	6.2
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	3,770	35.6	9,599	90.7	239	2.3	149	1.4	21	0.2	292	2.8
New Hampshire*	7,214	1,049	14.5	6,913	95.8	819	11.4	245	3.4	96	1.3	650	9.0

Appendix Table D.6. (continued)

State	Total number of Medicaid beneficiaries with an OUD	Treated in an inpatient setting		Treated in an outpatient setting		Treated in a residential setting		Treated in a home-based setting		Treated in a community-based setting		Treated in an unknown setting	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey*	28,208	9,529	33.8	26,028	92.3	332	1.2	878	3.1	108	0.4	198	0.7
New Mexico*	6,269	1,774	28.3	5,843	93.2	117	1.9	57	0.9	142	2.3	27	0.4
New York*	117,969	47,231	40.0	112,270	95.2	1,399	1.2	496	0.4	48	0.0	4,082	3.5
North Carolina	26,252	8,394	32.0	24,117	91.9	700	2.7	728	2.8	89	0.3	993	3.8
North Dakota*	317	147	46.4	251	79.2	32	10.1	DS	DS	DS	DS	87	27.4
Ohio*	102,734	30,206	29.4	98,961	96.3	6,337	6.2	2,939	2.9	194	0.2	24,326	23.7
Oklahoma	8,737	3,002	34.4	7,699	88.1	138	1.6	154	1.8	583	6.7	129	1.5
Oregon*	22,106	4,810	21.8	20,706	93.7	3,600	16.3	207	0.9	104	0.5	634	2.9
Pennsylvania*	108,875	27,455	25.2	99,329	91.2	746	0.7	7,199	6.6	397	0.4	47,453	43.6
Puerto Rico*	5,620	914	16.3	5,395	96.0	DS	DS	DS	DS	63	1.1	DS	DS
Rhode Island*	9,826	1,223	12.4	9,635	98.1	116	1.2	50	0.5	17	0.2	386	3.9
South Carolina	6,457	2,426	37.6	5,621	87.1	426	6.6	23	0.4	159	2.5	456	7.1
South Dakota	505	222	44.0	434	85.9	DS	DS	DS	DS	DS	DS	12	2.4
Tennessee	18,377	10,518	57.2	15,737	85.6	181	1.0	304	1.7	29	0.2	236	1.3
Texas	17,085	6,875	40.2	14,694	86.0	710	4.2	261	1.5	461	2.7	153	0.9
Utah	3,910	1,529	39.1	2,949	75.4	746	19.1	11	0.3	87	2.2	247	6.3
Vermont*	9,906	1,758	17.7	9,660	97.5	25	0.3	72	0.7	32	0.3	2,304	23.3
Virginia	15,142	4,321	28.5	13,917	91.9	95	0.6	30	0.2	21	0.1	99	0.7
Washington*	44,119	10,462	23.7	41,341	93.7	6,351	14.4	586	1.3	1,187	2.7	2,089	4.7
West Virginia*	20,453	4,399	21.5	19,536	95.5	469	2.3	723	3.5	DS	DS	265	1.3
Wisconsin	22,546	6,681	29.6	21,480	95.3	94	0.4	135	0.6	280	1.2	476	2.1
Wyoming	616	178	28.9	522	84.7	21	3.4	DS	DS	90	14.6	79	12.8

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with an OUD, we used diagnosis codes, National Drug Codes, and select procedure codes on Medicaid claims.

We defined service setting on the basis of the TAF file containing the claim; in the case of claims from the Other Services file, we used the claim's type of bill, place of service, procedure codes, or revenue codes. We defined a setting as "unknown" when there was not enough information on the claim to categorize the service by setting.

The sum of the percentages within each state will not be 100 because many Medicaid beneficiaries treated for an OUD were treated in more than one setting.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Appendix Table D.7.i. Average number of OUD services received by Medicaid beneficiaries who received a given service in 2017, by service type

State	Total Number of Medicaid beneficiaries with OUD	Consultation			Counseling			Emergency services		
		Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary
United States	1,164,950	97,135	785,158	8.1	440,776	5,239,029	11.9	435,935	1,032,346	2.4
Alabama	10,516	978	1,601	1.6	1,218	9,964	8.2	5,133	15,676	3.1
Alaska*	4,471	129	139	1.1	754	4,248	5.6	1,670	3,817	2.3
Arizona*	28,644	2,561	4,233	1.7	12,502	104,008	8.3	11,877	26,926	2.3
Arkansas*	1,289	99	227	2.3	114	233	2.0	513	989	1.9
California*	84,719	8,148	19,038	2.3	27,033	445,149	16.5	33,386	86,799	2.6
Colorado*	15,818	13	27	2.1	2,272	5,184	2.3	6,661	16,721	2.5
Connecticut*	34,393	7,715	76,107	9.9	10,628	108,340	10.2	10,599	24,927	2.4
Delaware*	9,956	44	64	1.5	5,382	68,632	12.8	3,257	6,879	2.1
District of Columbia*	3,569	577	2,862	5.0	1,400	19,343	13.8	1,858	5,389	2.9
Florida	27,281	6,628	43,357	6.5	1,909	3,723	2.0	13,654	33,999	2.5
Georgia	11,099	273	374	1.4	1,512	8,480	5.6	4,545	10,401	2.3
Hawaii*	3,736	281	6,858	24.4	894	5,808	6.5	1,428	4,062	2.8
Idaho	2,393	288	1,129	3.9	20	29	1.5	527	897	1.7
Illinois*	2,833	617	2,041	3.3	410	2,481	6.1	926	1,730	1.9
Indiana*	28,386	671	813	1.2	9,362	68,489	7.3	7,927	13,966	1.8
Iowa*	5,459	501	1,452	2.9	1,850	16,138	8.7	2,273	5,473	2.4
Kansas	2,745	DS	DS	DS	624	5,327	8.5	753	1,355	1.8
Kentucky*	47,530	1,503	1,807	1.2	23,042	230,232	10.0	15,504	30,259	2.0
Louisiana*	7,067	503	2,404	4.8	1,069	6,372	6.0	3,043	6,409	2.1
Maine	9,328	1,337	10,746	8.0	3,933	49,704	12.6	2,070	4,094	2.0
Maryland*	65,868	2,820	12,901	4.6	40,135	487,973	12.2	21,147	47,239	2.2
Massachusetts*	79,511	6,870	35,011	5.1	29,983	287,212	9.6	30,756	87,378	2.8
Michigan*	43,138	1,353	2,299	1.7	21,048	168,730	8.0	17,983	42,529	2.4
Minnesota*	21,377	1,110	2,280	2.1	3,104	10,122	3.3	8,521	21,826	2.6
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	164	332	2.0	1,270	13,678	10.8	1,937	3,897	2.0
New Hampshire*	7,214	1,119	5,360	4.8	2,272	14,410	6.3	1,881	3,753	2.0

Appendix Table D.7.i. (continued)

State	Total Number of Medicaid beneficiaries with OUD	Consultation			Counseling			Emergency services		
		Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary
New Jersey*	28,208	1,426	4,017	2.8	7,222	54,242	7.5	9,977	22,442	2.2
New Mexico*	6,269	438	1,908	4.4	1,868	16,606	8.9	2,008	4,287	2.1
New York*	117,969	1,822	2,277	1.2	41,429	513,876	12.4	45,518	125,525	2.8
North Carolina	26,252	1,792	3,848	2.1	9,694	72,995	7.5	10,152	20,638	2.0
North Dakota*	317	0	0	.	98	489	5.0	118	218	1.8
Ohio*	102,734	13,580	38,402	2.8	61,860	1,091,832	17.7	50,206	126,400	2.5
Oklahoma	8,737	334	1,219	3.6	1,778	27,745	15.6	2,616	4,635	1.8
Oregon*	22,106	21	47	2.2	13,256	313,652	23.7	8,040	17,870	2.2
Pennsylvania*	108,875	21,452	426,706	19.9	43,983	536,105	12.2	37,444	74,754	2.0
Puerto Rico*	5,620	236	273	1.2	2,391	14,975	6.3	375	481	1.3
Rhode Island*	9,826	286	741	2.6	4,566	41,363	9.1	2,215	5,652	2.6
South Carolina	6,457	286	486	1.7	1,621	11,764	7.3	2,762	6,005	2.2
South Dakota	505	DS	DS	DS	38	136	3.6	225	462	2.1
Tennessee	18,377	354	496	1.4	4,041	16,770	4.1	7,487	15,391	2.1
Texas	17,085	575	1,009	1.8	3,278	23,486	7.2	6,798	15,283	2.2
Utah	3,910	50	146	2.9	329	6,528	19.8	1,013	1,661	1.6
Vermont*	9,906	243	635	2.6	3,319	36,989	11.1	2,459	4,775	1.9
Virginia	15,142	64	66	1.0	2,448	15,360	6.3	4,677	9,450	2.0
Washington*	44,119	4,344	49,972	11.5	14,440	76,337	5.3	17,375	39,415	2.3
West Virginia*	20,453	1,887	17,141	9.1	12,726	177,570	14.0	6,036	10,801	1.8
Wisconsin	22,546	1,584	2,086	1.3	6,546	45,043	6.9	8,375	18,305	2.2
Wyoming	616	59	221	3.7	105	1,157	11.0	230	506	2.2

Appendix Table D.7.ii. Average number of OUD services received by Medicaid beneficiaries who received a given service by service type in 2017

State	Total number of Medicaid beneficiaries with OUD	Inpatient care			MAT			Observation care			Partial hospitalization		
		Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary
United States	1,164,950	331,580	3,517,627	10.6	673,806	10,356,039	153.7	50,887	175,246	3.4	4,185	61,092	14.6
Alabama	10,516	3,925	54,060	13.8	6,170	1,193,242	193.4	256	1,059	4.1	DS	DS	DS
Alaska*	4,471	1,171	13,294	11.4	2,659	354,783	133.4	171	748	4.4	0	.	.
Arizona*	28,644	11,349	125,484	11.1	11,708	1,205,595	103.0	2,337	11,472	4.9	0	.	.
Arkansas*	1,289	654	4,464	6.8	437	29,270	67.0	74	197	2.7	0	.	.
California*	84,719	24,756	259,265	10.5	51,277	9,688,535	188.9	1,700	6,274	3.7	DS	DS	DS
Colorado*	15,818	3,978	37,102	9.3	9,312	925,562	99.4	1,136	5,376	4.7	0	.	.
Connecticut*	34,393	6,456	82,639	12.8	26,362	2,472,114	93.8	1,256	2,487	2.0	459	4,112	9.0
Delaware*	9,956	3,266	38,857	11.9	6,706	1,071,736	159.8	343	1,153	3.4	491	7,069	14.4
District of Columbia*	3,569	1,656	21,026	12.7	2,055	435,909	212.1	170	724	4.3	0	.	.
Florida	27,281	13,471	152,639	11.3	12,905	1,091,176	84.6	2,679	13,904	5.2	DS	DS	DS
Georgia	11,099	4,386	49,021	11.2	4,079	532,533	130.6	721	2,850	4.0	111	1,077	9.7
Hawaii*	3,736	1,027	12,025	11.7	1,901	368,391	193.8	233	1,148	4.9	DS	DS	DS
Idaho	2,393	864	3,199	3.7	1,013	156,287	154.3	44	62	1.4	0	.	.
Illinois*	2,833	1,378	11,190	8.1	960	70,384	73.3	137	319	2.3	0	.	.
Indiana*	28,386	10,170	83,117	8.2	17,411	2,184,383	125.5	1,074	3,408	3.2	225	3,426	15.2
Iowa*	5,459	2,062	20,227	9.8	2,270	302,987	133.5	332	936	2.8	188	4,127	22.0
Kansas	2,745	880	8,005	9.1	726	98,417	135.6	99	283	2.9	0	.	.
Kentucky*	47,530	12,784	108,828	8.5	30,561	5,378,001	176.0	968	2,331	2.4	19	328	17.3
Louisiana*	7,067	2,817	32,140	11.4	3,492	596,493	170.8	225	1,078	4.8	0	.	.
Maine	9,328	1,014	4,342	4.3	7,290	1,747,231	239.7	162	298	1.8	0	.	.
Maryland*	65,868	12,257	114,428	9.3	46,921	4,597,717	98.0	3,460	14,725	4.3	DS	DS	DS
Massachusetts*	79,511	20,794	212,933	10.2	57,475	11,744,890	204.3	4,939	11,989	2.4	625	4,786	7.7
Michigan*	43,138	10,467	84,089	8.0	19,533	3,637,696	186.2	1,638	5,567	3.4	DS	DS	DS
Minnesota*	21,377	6,622	83,667	12.6	11,785	2,159,436	183.2	1,225	4,958	4.0	17	147	8.6
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	2,261	25,694	11.4	3,233	359,920	111.3	203	784	3.9	DS	DS	DS
New Hampshire*	7,214	977	5,707	5.8	5,172	777,899	150.4	170	403	2.4	0	.	.

Appendix Table D.7.ii. (continued)

State	Total number of Medicaid beneficiaries with OUD	Inpatient care			MAT			Observation care			Partial hospitalization		
		Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary	Count of beneficiaries with service	Total count of days	Average # per beneficiary
New Jersey*	28,208	8,210	86,087	10.5	17,204	1,898,351	110.3	1,398	5,576	4.0	528	13,915	26.4
New Mexico*	6,269	1,749	7,231	4.1	4,023	880,116	218.8	252	327	1.3	26	134	5.2
New York*	117,969	41,762	667,486	16.0	52,387	8,295,558	158.4	3,604	13,804	3.8	242	5,217	21.6
North Carolina	26,252	8,211	82,758	10.1	12,029	1,210,916	100.7	1,176	5,274	4.5	DS	DS	DS
North Dakota*	317	152	1,307	8.6	107	11,761	109.9	31	59	1.9	26	351	13.5
Ohio*	102,734	29,116	195,028	6.7	64,498	9,921,009	153.8	7,329	15,210	2.1	188	4,420	23.5
Oklahoma	8,737	2,954	32,646	11.1	2,627	398,150	151.6	194	610	3.1	DS	DS	DS
Oregon*	22,106	4,704	49,180	10.5	12,929	2,345,037	181.4	696	3,014	4.3	0	.	.
Pennsylvania*	108,875	25,329	267,387	10.6	64,691	10,038,511	155.2	4,042	11,601	2.9	71	761	10.7
Puerto Rico*	5,620	845	8,954	10.6	2,994	425,852	142.2	111	222	2.0	11	42	3.8
Rhode Island*	9,826	1,163	8,888	7.6	8,462	1,328,537	157.0	125	295	2.4	156	1,234	7.9
South Carolina	6,457	2,327	24,664	10.6	2,889	475,638	164.6	308	1,435	4.7	0	.	.
South Dakota	505	217	2,692	12.4	159	23,124	145.4	29	112	3.9	0	.	.
Tennessee	18,377	9,150	90,320	9.9	5,819	589,773	101.4	975	3,232	3.3	633	8,648	13.7
Texas	17,085	6,758	72,737	10.8	8,227	1,119,694	136.1	1,278	6,147	4.8	142	1,063	7.5
Utah	3,910	760	6,007	7.9	1,910	307,861	161.2	35	65	1.9	DS	DS	DS
Vermont*	9,906	1,722	17,453	10.1	7,715	1,886,398	244.5	132	582	4.4	0	.	.
Virginia	15,142	4,015	36,116	9.0	7,133	1,062,029	148.9	354	1,349	3.8	13	178	13.7
Washington*	44,119	10,302	126,525	12.3	25,303	3,679,756	145.4	1,270	6,234	4.9	0	.	.
West Virginia*	20,453	4,059	30,792	7.6	14,220	2,197,354	154.5	617	1,759	2.9	14	57	4.1
Wisconsin	22,546	6,459	54,514	8.4	14,874	2,262,708	152.1	1,148	3,764	3.3	DS	DS	DS
Wyoming	616	174	1,413	8.1	193	21,670	112.3	31	42	1.4	0	.	.

Appendix Table D.7.iii. Average number of OUD services received by Medicaid beneficiaries who received a given service, by service type in 2017

State	Total Number of Medicaid beneficiaries with OUD	Physician services			Screening/assessment			Treatment program		
		Count of beneficiary with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of Beneficiaries with service	Total count of days	Average # per beneficiary
United States	1,164,950	462,280	2,860,891	6.2	333,971	1,398,008	4.2	135,439	3,716,328	27.4
Alabama	10,516	3,754	15,785	4.2	1,192	1,576	1.3	18	933	51.8
Alaska*	4,471	2,818	18,181	6.5	1,357	2,167	1.6	0	.	.
Arizona*	28,644	10,759	42,347	3.9	13,681	31,454	2.3	2,753	87,842	31.9
Arkansas*	1,289	215	593	2.8	102	142	1.4	DS	DS	DS
California*	84,719	19,556	63,736	3.3	4,041	6,786	1.7	1,650	51,694	31.3
Colorado*	15,818	7,793	37,957	4.9	2,010	2,936	1.5	12	68	5.7
Connecticut*	34,393	10,049	61,542	6.1	9,163	14,148	1.5	4,894	69,997	14.3
Delaware*	9,956	5,974	36,275	6.1	1,817	2,246	1.2	848	15,893	18.7
District of Columbia*	3,569	1,438	8,174	5.7	1,069	2,859	2.7	0	.	.
Florida	27,281	4,706	14,562	3.1	4,710	7,286	1.5	14	111	7.9
Georgia	11,099	3,911	16,180	4.1	1,703	5,527	3.2	133	1,160	8.7
Hawaii*	3,736	1,686	7,613	4.5	613	957	1.6	42	1,381	32.9
Idaho	2,393	928	4,531	4.9	126	178	1.4	0	.	.
Illinois*	2,833	700	2,180	3.1	463	673	1.5	0	.	.
Indiana*	28,386	11,336	61,185	5.4	8,445	13,681	1.6	664	7,390	11.1
Iowa*	5,459	2,467	11,225	4.6	2,091	5,247	2.5	733	16,789	22.9
Kansas	2,745	762	2,370	3.1	601	824	1.4	272	7,962	29.3
Kentucky*	47,530	27,621	276,741	10.0	14,065	19,858	1.4	5,389	101,028	18.7
Louisiana*	7,067	1,805	5,416	3.0	1,248	1,787	1.4	1,171	26,470	22.6
Maine	9,328	4,635	30,855	6.7	3,587	15,479	4.3	954	24,164	25.3
Maryland*	65,868	28,833	139,362	4.8	32,712	49,604	1.5	13,078	361,548	27.6
Massachusetts*	79,511	42,542	448,559	10.5	17,891	32,913	1.8	13,362	195,037	14.6
Michigan*	43,138	22,170	92,697	4.2	18,767	61,672	3.3	8,771	252,570	28.8
Minnesota*	21,377	9,574	35,556	3.7	8,257	16,814	2.0	6,166	291,558	47.3
Mississippi	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	1,920	5,189	2.7	1,469	4,082	2.8	170	4,170	24.5
New Hampshire*	7,214	3,168	20,110	6.3	1,672	3,141	1.9	1,059	19,491	18.4

Appendix Table D.7.iii. (continued)

State	Total Number of Medicaid beneficiaries with OUD	Physician services			Screening/assessment			Treatment program		
		Count of beneficiary with service	Total count of claims	Average # per beneficiary	Count of beneficiaries with service	Total count of claims	Average # per beneficiary	Count of Beneficiaries with service	Total count of days	Average # per beneficiary
New Jersey*	28,208	10,512	48,977	4.7	9,831	66,818	6.8	2,684	83,041	30.9
New Mexico*	6,269	2,910	15,508	5.3	1,923	4,304	2.2	224	4,566	20.4
New York*	117,969	37,616	169,062	4.5	13,601	43,185	3.2	3,643	90,928	25.0
North Carolina	26,252	13,746	94,966	6.9	6,069	9,942	1.6	2,224	48,014	21.6
North Dakota*	317	115	369	3.2	87	115	1.3	44	785	17.8
Ohio*	102,734	39,681	236,473	6.0	61,199	687,859	11.2	17,746	391,117	22.0
Oklahoma	8,737	3,367	14,906	4.4	928	1,062	1.1	DS	DS	DS
Oregon*	22,106	9,262	38,541	4.2	8,613	13,114	1.5	2,208	101,167	45.8
Pennsylvania*	108,875	42,081	263,393	6.3	32,931	73,017	2.2	33,638	1,201,744	35.7
Puerto Rico*	5,620	2,846	20,608	7.2	1,091	1,427	1.3	DS	DS	DS
Rhode Island*	9,826	3,691	24,213	6.6	2,120	3,664	1.7	541	7,500	13.9
South Carolina	6,457	2,256	14,248	6.3	1,763	3,006	1.7	603	17,185	28.5
South Dakota	505	130	310	2.4	52	87	1.7	15	801	53.4
Tennessee	18,377	8,342	40,737	4.9	4,113	5,809	1.4	2,863	67,565	23.6
Texas	17,085	4,379	14,295	3.3	1,979	3,157	1.6	549	9,311	17.0
Utah	3,910	433	1,636	3.8	278	521	1.9	50	1,995	39.9
Vermont*	9,906	3,234	21,993	6.8	2,002	2,850	1.4	1,182	20,035	17.0
Virginia	15,142	4,059	22,989	5.7	1,277	2,451	1.9	140	1,748	12.5
Washington*	44,119	18,841	119,272	6.3	13,410	26,259	2.0	3,880	114,289	29.5
West Virginia*	20,453	13,735	188,423	13.7	7,457	10,358	1.4	416	9,095	21.9
Wisconsin	22,546	9,634	49,573	5.1	10,286	134,793	13.1	636	8,186	12.9
Wyoming	616	290	1,478	5.1	109	173	1.6	0	.	.

Source: Mathematica's analysis of the 2017 TAF data version 2, Medicaid beneficiaries 12 years and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with an OUD, we used diagnosis codes, National Drug Codes, and select procedure codes on Medicaid claims.

We counted certain service types by days (inpatient care, observation care, partial hospitalization, and treatment program), whereas we counted other service types by claims (consultation, counseling, emergency services, MAT, physician services, screening/assessment). A claim roughly represents a single service, such as a physician service or screening/assessment.

We did not count claims with missing dates of service, procedure codes, or other information. The services presented in the table are for a SUD; if the claim did not have a SUD diagnosis code, we did not count the service.

Variation across states in the number of services beneficiaries received may be a result of billing practices, policies or programs (for instance, if a state covers specific services), or data quality issues.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe data quality issues. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Appendix Table D.8. Number and percentage of Medicaid beneficiaries treated for an OUD in 2017, by delivery system

State	Total number of Medicaid beneficiaries with OUD	Total with a managed care SUD claim		Total with a FFS SUD claim	
		Number	Percent	Number	Percent
United States	1,164,950	864,772	74.2	591,621	50.8
Alabama	10,516	DS	DS	10,516	100.0
Alaska*	4,471	0	0.0	4,471	100.0
Arizona*	28,644	27,857	97.3	1,257	4.4
Arkansas*	1,289	392	30.4	1,208	93.7
California*	84,719	50,673	59.8	66,321	78.3
Colorado*	15,818	3,884	24.6	14,822	93.7
Connecticut*	34,393	0	0.0	34,393	100.0
Delaware*	9,956	9,473	95.1	1,712	17.2
District of Columbia*	3,569	1,224	34.3	2,507	70.2
Florida	27,281	24,851	91.1	4,300	15.8
Georgia	11,099	4,131	37.2	7,287	65.7
Hawaii*	3,736	3,735	100.0	21	0.6
Idaho	2,393	0	0.0	2,393	100.0
Illinois*	2,833	970	34.2	2,451	86.5
Indiana*	28,386	25,538	90.0	5,822	20.5
Iowa*	5,459	5,142	94.2	823	15.1
Kansas	2,745	2,733	99.6	45	1.6
Kentucky*	47,530	47,059	99.0	1,236	2.6
Louisiana*	7,067	6,316	89.4	909	12.9
Maine	9,328	0	0.0	9,328	100.0
Maryland*	65,868	29,660	45.0	63,498	96.4
Massachusetts*	79,511	62,178	78.2	39,240	49.4
Michigan*	43,138	40,259	93.3	13,594	31.5
Minnesota*	21,377	17,705	82.8	10,300	48.2
Mississippi	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ
Nevada*	10,581	7,385	69.8	3,907	36.9
New Hampshire*	7,214	4,907	68.0	3,972	55.1
New Jersey*	28,208	20,044	71.1	19,365	68.7
New Mexico*	6,269	6,076	96.9	230	3.7
New York*	117,969	100,812	85.5	65,105	55.2
North Carolina	26,252	14,292	54.4	22,472	85.6
North Dakota*	317	0	0.0	317	100.0
Ohio*	102,734	85,358	83.1	72,508	70.6
Oklahoma	8,737	0	0.0	8,737	100.0
Oregon*	22,106	20,200	91.4	7,694	34.8
Pennsylvania*	108,875	105,595	97.0	14,310	13.1
Puerto Rico*	5,620	5,620	100.0	0	0.0
Rhode Island*	9,826	9,349	95.1	1,823	18.6
South Carolina	6,457	5,119	79.3	2,306	35.7
South Dakota	505	0	0.0	505	100.0
Tennessee	18,377	15,948	86.8	3,117	17.0
Texas	17,085	14,415	84.4	4,475	26.2
Utah	3,910	1,725	44.1	3,063	78.3
Vermont*	9,906	0	0.0	9,906	100.0

Appendix Table D.8. (continued)

State	Total number of Medicaid beneficiaries with OUD	Total with a managed care SUD claim		Total with a FFS SUD claim	
		Number	Percent	Number	Percent
Virginia	15,142	12,318	81.3	3,943	26.0
Washington*	44,119	39,027	88.5	10,069	22.8
West Virginia*	20,453	17,995	88.0	14,386	70.3
Wisconsin	22,546	14,807	65.7	20,341	90.2
Wyoming	616	0	0.0	616	100.0

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table.

To identify beneficiaries with an OUD, we used diagnosis codes, National Drug Codes, and select procedure codes on Medicaid claims.

We categorized SUD claims as covered under managed care if they were managed care encounter records or if they had a managed care plan ID.

We categorized claims as paid for by FFS if they were FFS claims without a managed care plan ID. Beneficiaries could have one or both types of claims during the year.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe issues with the state's data quality. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

Appendix Table D.9. Progression of care for Medicaid beneficiaries treated for an OUD who received services in 2017 in an inpatient or a residential setting

State	Number of beneficiaries with an OUD who received services in an inpatient or a residential setting	Received at least one outpatient or home- or community-based SUD service within 30 days of discharge		Received more than one outpatient or home- or community-based service within 30 days of discharge	
		Number	Percent	Number	Percent
United States	367,012	183,875	50.1	142,719	38.9
Alabama	3,885	1,687	43.4	1,063	27.4
Alaska*	1,399	687	49.1	479	34.2
Arizona*	11,523	5,543	48.1	4,426	38.4
Arkansas*	597	45	7.5	16	2.7
California*	25,557	9,314	36.4	6,986	27.3
Colorado*	3,803	784	20.6	320	8.4
Connecticut*	7,153	4,781	66.8	4,058	56.7
Delaware*	3,574	2,180	61.0	1,750	49.0
District of Columbia*	1,638	811	49.5	580	35.4
Florida	13,618	4,053	29.8	2,530	18.6
Georgia	4,351	1,247	28.7	708	16.3
Hawaii*	1,015	422	41.6	254	25.0
Idaho	952	281	29.5	154	16.2
Illinois*	1,346	421	31.3	209	15.5
Indiana*	10,067	4,244	42.2	2,973	29.5
Iowa*	2,150	1,021	47.5	742	34.5
Kansas	1,150	391	34.0	219	19.0
Kentucky*	14,775	6,721	45.5	4,643	31.4
Louisiana*	3,140	1,045	33.3	765	24.4
Maine	1,019	699	68.6	579	56.8
Maryland*	14,348	9,087	63.3	7,775	54.2
Massachusetts*	30,373	21,323	70.2	18,578	61.2
Michigan*	9,996	1,658	16.6	603	6.0
Minnesota*	6,469	3,532	54.6	2,811	43.5
Mississippi	DQ	DQ	DQ	DQ	DQ
Missouri	DQ	DQ	DQ	DQ	DQ
Montana*	DQ	DQ	DQ	DQ	DQ
Nebraska	DQ	DQ	DQ	DQ	DQ
Nevada*	3,713	1,579	42.5	1,030	27.7
New Hampshire*	1,591	833	52.4	598	37.6
New Jersey*	9,127	4,238	46.4	3,516	38.5
New Mexico*	1,723	802	46.5	579	33.6
New York*	45,585	30,279	66.4	25,821	56.6
North Carolina	8,373	3,310	39.5	2,203	26.3
North Dakota*	148	46	31.1	24	16.2
Ohio*	32,086	19,657	61.3	15,750	49.1
Oklahoma	2,877	782	27.2	412	14.3
Oregon*	7,247	4,025	55.5	3,293	45.4
Pennsylvania*	26,372	12,449	47.2	9,173	34.8
Puerto Rico*	842	345	41.0	224	26.6

Appendix Table D.9. (continued)

State	Number of beneficiaries with an OUD who received services in an inpatient or a residential setting	Received at least one outpatient or home- or community-based SUD service within 30 days of discharge		Received more than one outpatient or home- or community-based service within 30 days of discharge	
		Number	Percent	Number	Percent
Rhode Island*	1,206	782	64.8	689	57.1
South Carolina	2,560	962	37.6	667	26.1
South Dakota	210	54	25.7	35	16.7
Tennessee	10,051	4,350	43.3	2,651	26.4
Texas	6,857	2,207	32.2	1,431	20.9
Utah	1,800	477	26.5	261	14.5
Vermont*	1,660	969	58.4	663	39.9
Virginia	4,162	1,070	25.7	682	16.4
Washington*	14,258	7,462	52.3	5,904	41.4
West Virginia*	4,172	1,803	43.2	1,316	31.5
Wisconsin	6,317	3,354	53.1	2,541	40.2
Wyoming	177	63	35.6	35	19.8

Source: Mathematica's analysis of the 2017 TAF version 2, Medicaid beneficiaries ages 12 and older who have full or comprehensive benefits.

Notes: The U.S. average is an overall average across the population in the states included in the table. To identify beneficiaries with an OUD, we used diagnosis codes, National Drug Codes, and select procedure codes on Medicaid claims.

*The state expanded Medicaid for adults by January 1, 2017. No states implemented a Medicaid expansion for adults during 2017.

DS = Data suppressed for confidentiality reasons because the group included fewer than 11 beneficiaries. If the size of a group that a state did not report because of confidentiality can be identified by using other numbers from that state, we did not report a second group within that state. Slightly different totals across the tables are a function of differences in the need to suppress data from one table to the next.

DQ = Not reported because of severe issues with the state's data quality. Four states (Mississippi, Missouri, Montana, and Nebraska) had such severe data quality issues in 2017 that they were not included in the table. For additional information on data quality issues, please see Appendix B.

APPENDIX E:
COMPOSITION OF ENROLLMENT CATEGORIES

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Appendix Table E.1. Composition of enrollment categories

Enrollment category	Eligibility group
Adult	Parents and other caretaker relatives
	Transitional medical assistance
	Extended Medicaid due to earnings
	Extended Medicaid due to spousal support
	Former foster care children
	Optional coverage of parents and other caretaker relatives
	Individuals electing COBRA continuation coverage
	Individuals above 133% of FPL under Age 65
	Certain individuals needing treatment for breast or cervical cancer
	Individuals eligible for family planning services
	Individuals with tuberculosis
	Medically needy parents and other caretakers
	Family planning services (expansion group)
	Other expansion group
Children	Deemed newborns
	Infants and children under 19
	Children with Title IV-E adoption assistance, foster care, or guardianship care
	Reasonable classifications of individuals under age 21
	Children with non-IV-E adoption assistance
	Independent foster care adolescents
	Optional targeted low-income children
	Medically needy children under age 18
	Medically needy children age 18 through 20
Pregnant	Pregnant women
	Medically needy pregnant women
Aged, Blind, Disabled	Individual receiving SSI
	ABD individuals in 209(b) states
	Individuals receiving mandatory state supplements
	Individuals who are essential spouses
	Institutionalized individuals continuously eligible since 1973
	Individuals who lost eligibility for SSI/SSP but for OASDI benefits in 1972
	Individuals who would be eligible for SSI/SSP

Appendix Table E.1. (continued)

Enrollment category	Eligibility group
Aged, Blind, Disabled	Blind or disabled individuals eligible in 1973
	Disabled widows and widowers ineligible for SSI due to increase in OASDI
	Disabled widows and widowers ineligible for SSI due to early receipt of social security
	Working disabled under 1619 (b)
	Disabled adult children
	Qualified Medicare beneficiaries
	Qualified disabled and working individuals
	Specific low-income Medicare beneficiaries
	Qualifying individuals
	ABD eligible but not receiving cash assistance
	Individuals eligible for cash assistance except for institutionalization
	Individuals receiving HCBS under institutional rules
	Optional state supplemental recipients- 1634 states, and SSI criteria states with 1616 agreements
	Optional state supplement recipients- 209(b) states, and SSI criteria states without 1616 agreements
	Institutionalized individuals eligible under a special income level
	Individuals participating in a PACE program under institutional rules
	Individuals receiving hospice care
	Qualified disabled children under age 19
	Poverty level aged or disabled
	Work incentives eligibility group
	Ticket to work basic group
	Ticket to work medical improvements group
	Family Opportunity Act children with disabilities
	Individuals eligible for HCBS
	Individuals eligible for HCBS- special income level
	Medically needy ABD
	Medically needy blind or disabled individuals eligible in 1973
	Individuals with mental health conditions (expansion group)
VIII Group Adults	Adult group—individuals at or below 133% FPL, 19-64, newly eligible for all states
	Adult group—individuals at or below 133% FPL, 19-64, not newly eligible for non 1905z(3) states
	Adult group—individuals at or below 133% FPL, not newly eligible parent/caretaker relative(s) in 1905z(3) states
	Individuals at or below 133% FPL, not newly eligible non-parent/caretaker relative(s) in 1905z(3) states

APPENDIX F:

**MEDICAID AND CHIP PAYMENT AND ACCESS COMMISSION (MACPAC)
PUBLIC LETTER ON ENROLLMENT CATEGORIES FOR THE SUPPORT
FOR PATIENTS AND COMMUNITY ACT T-MSIS SUD DATA BOOK**

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Advising Congress on
Medicaid and CHIP Policy

Commissioners

March 21, 2019

Penny Thompson, MPA, *Chair*
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 Melanie Bella, MBA
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 Sheldon Retchin, MD, MSPH
 William Scanlon, PhD
 Peter Szilagyi, MD, MPH
 Alan Weil, JD, MPP
 Katherine Weno, DDS, JD

Anne L. Schwartz, PhD,
Executive Director

The Honorable Alex M. Azar II
 Secretary
 U.S. Department of Health and Human Services
 200 Independence Avenue, SW
 Washington, DC 20201

Dear Secretary Azar:

Section 1015 of the SUPPORT for Patients and Communities Act (the SUPPORT Act, P.L. 115-271) requires the Secretary of the U.S. Department of Health and Human Services (HHS) to publish a report with comprehensive data on the prevalence of substance use disorders in the Medicaid population and the services provided under Medicaid for the treatment of such disorders. Among other data, the report must include the number and percentage of individuals in each of the major Medicaid enrollment categories who have been diagnosed with a substance use disorder and whether those individuals are enrolled under the Medicaid state plan or a waiver.

Section 1015(a)(2)(A) of the SUPPORT Act charges the Medicaid and CHIP Payment and Access Commission (MACPAC) with defining in a public letter the major Medicaid enrollment categories for purposes of this report. Accordingly, we recommend that HHS use the following eligibility groups in the report:

- children age 0–18, excluding those eligible on the basis of a disability;
- adults eligible under Section 1902(a)(10)(A)(i)(VIII) of the Social Security Act as added in the Patient Protection and Affordable Care Act (P.L. 111-148, as amended);
- other adults age 19–64, such as parents and other caretaker relatives, excluding those eligible on the basis of a disability;
- individuals over age 65;
- adults age 19–64 who are eligible on the basis of a disability;
- children age 0–18 who are eligible on the basis of a disability;
- pregnant women; and,
- individuals dually eligible for Medicaid and Medicare who receive full Medicaid benefits.



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If data are available, MACPAC also suggests including a number of special populations that may be particularly affected by the opioid epidemic. For example, children who qualify for Medicaid on the basis of child welfare assistance generally have a high prevalence of behavioral health conditions (MACPAC 2015). Similarly, full-benefit dually eligible beneficiaries under age 65 experience higher rates of behavioral health conditions than such beneficiaries over age 65 (MACPAC and MedPAC 2018). Older adolescents represent an additional category for consideration, as buprenorphine may be prescribed to patients age 16 and older with opioid use disorders. Finally, federal guidance issued in 2018 noted the critical role played by Medicaid in the care of infants with neonatal abstinence syndrome. Although not characterized as a substance use disorder, neonatal abstinence syndrome results from exposure to opioids and affects thousands of infants whose care is paid for by Medicaid (CMS 2018).

We recognize that T-MSIS data are still being validated and there may be gaps in the data available at this time, making it challenging to report on all of the eligibility categories we recommend. Even so, we encourage HHS to report on these eligibility categories in its inaugural data book, note instances where data are incomplete, and build the content of subsequent editions as data improvements are made.

If you have any questions or would like to discuss our recommendations, please feel free to contact me or have your staff contact Anne Schwartz, executive director, at 202-350-2000.

Sincerely,



Penny Thompson
Chair

cc: The Honorable Seema Verma, Administrator, Centers for Medicare & Medicaid Services

References

Centers for Medicare & Medicaid Services (CMS), U.S. Department of Health and Human Services. 2018. CMCS informational bulletin regarding "Neonatal abstinence syndrome: A critical role for Medicaid in the care of infants." June 11, 2018. <https://www.medicaid.gov/federal-policy-guidance/downloads/cib060818.pdf>

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APPENDIX G:
STATUTE TO TABLES CROSSWALK

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Appendix Table G.1. Crosswalk between statutory language in the SUPPORT for Patients and Communities Act and the SUD Data Book contents⁴⁵

Statute section	Corresponding SUD Data Book table
A. The number and percentage of individuals enrolled in the State Medicaid plan or waiver of such plan in each of the major enrollment categories (as defined in a public letter from the Medicaid and CHIP Payment and Access Commission to the Secretary) who have been diagnosed with a substance use disorder and whether such individuals are enrolled under the State Medicaid plan or a waiver of such plan, including the specific waiver authority under which they are enrolled, to the extent available.	<p>Table A.1 Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by disorder</p> <p>Table A.2. Distribution of Medicaid beneficiaries treated for a SUD in 2017, by disorder</p> <p>Table A.3. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by major enrollment category</p> <p>Table A.4. Distribution of Medicaid beneficiaries treated for a SUD in 2017, by major enrollment category</p> <p>Table A.5. Number and percentage of Medicaid beneficiaries treated for a SUD who were in the ABD enrollment category in 2017, by age group</p> <p>Table A.6. Distribution of Medicaid beneficiaries treated for a SUD who were in the ABD enrollment category in 2017, by age group</p> <p>Table A.7. Number and percentage of full-benefit, dually eligible Medicaid beneficiaries who were treated for a SUD in 2017</p> <p>Table A.8. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017 who were full-benefit and dually eligible</p>
B. A list of the substance use disorder treatment services by each major type of service, such as counseling, medication-assisted treatment, peer support, residential treatment, and inpatient care, for which beneficiaries in each State received at least 1 service under the State Medicaid plan or a waiver of such plan.	<p>Table B.1. SUD treatment services used by Medicaid beneficiaries</p> <p>Table B.2. SUD treatment service types not billed, by state</p>
C. The number and percentage of individuals with a substance use disorder diagnosis enrolled in the State Medicaid plan or waiver of such plan who received substance use disorder treatment services under such plan or waiver by each major type of service under subparagraph (B) within each major setting type, such as outpatient, inpatient, residential, and other home-based and community-based settings.	<p>Table C.1. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by service type</p> <p>Table C.2. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by service setting</p>
D. The number of services provided under the State Medicaid plan or waiver of such plan per individual with a substance use disorder diagnosis enrolled in such plan or waiver for each major type of service under subparagraph (B).	Table D.1. Average number of SUD services received by Medicaid beneficiaries who received a given service in 2017, by service type

⁴⁵ Tables that are split between multiple pages are given lower-case Roman numerals at the end of the table number to indicate whether the “component table” is the first component (i), second component (ii), and so on.

Statute section	Corresponding SUD Data Book table
<p>E. The number and percentage of individuals enrolled in the State Medicaid plan or waiver, by major enrollment category, who received substance use disorder treatment through—</p> <ul style="list-style-type: none"> (i) a Medicaid managed care entity (as defined in section 1932(a)(1)(B) of the Social Security Act (42 U.S.C. 1396u–2(a)(1)(B))), including the number of such individuals who received such assistance through a prepaid inpatient health plan or a prepaid ambulatory health plan; (ii) a fee-for-service payment model; or (iii) an alternative payment model, to the extent available. 	<p>Table E.1. Number and percentage of Medicaid beneficiaries treated for a SUD in 2017, by delivery system</p>
<p>F. The number and percentage of individuals with a substance use disorder who receive substance use disorder treatment services in an outpatient or home-based and community-based setting after receiving treatment in an inpatient or residential setting, and the number of services received by such individuals in the outpatient or home-based and community-based setting</p>	<p>Table F.1. Progression of care for Medicaid beneficiaries treated for a SUD who received services in an inpatient or a residential setting in 2017</p>