

Medicaid Beneficiaries Who Use Long-Term Services and Supports: 2019

Min-Young Kim, Edward Weizenegger, and Andrea Wysocki
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Key findings

The definition of long-term services and supports (LTSS) can differ across different entities and studies. We examined Medicaid LTSS users using two set of definitions of LTSS: (1) the long-standing categories of LTSS that the Centers for Medicare & Medicaid Services (CMS) track through the Medicaid LTSS Annual Expenditures Reports and (2) the categories defined in section 9817 of the American Rescue Plan Act of 2021 (ARP). Using the long-standing categories of LTSS tracked by CMS, we found that 11.0 million Medicaid beneficiaries across 51 states received LTSS through fee-for-service (FFS) or managed care (MC) delivery systems in 2019. However, three states had clear reporting errors with the Health Homes program. Excluding these states, 8.8 million beneficiaries across 48 states received LTSS in 2019. Of these, 1.6 million beneficiaries (18.4 percent) received institutional services, 7.5 million (85.0 percent) received home and community-based services (HCBS), and 0.3 million (3.5 percent) received both. Using the ARP service categories, we found that 8.8 million Medicaid beneficiaries across 51 states received LTSS through FFS or MC delivery systems in 2019. Of these, 1.7 million beneficiaries (19.0 percent) received institutional services, 7.4 million (84.3 percent) received HCBS, and 0.3 million (3.3 percent) received both.

A. Background

Long-term services and supports (LTSS) encompass a wide range of medical and nonmedical services and supports for people with physical, cognitive, mental, or other disabilities or conditions. Medicaid is the primary payer of LTSS in the United States, accounting for about 52 percent of national LTSS spending (O'Malley Watts et al. 2020). Medicaid covers various institutional and home and community-based LTSS, but the types of services, populations covered, and delivery models differ substantially across states.

Over the last several decades, states have sought to rebalance their LTSS systems by increasing access to home and community-based services (HCBS) and reducing reliance on institutional care. Changes in available Medicaid policy options and state delivery models, along with strong consumer preferences to live and receive LTSS in the community, have led to shifts in Medicaid LTSS use and expenditure patterns in recent years toward more HCBS (Murray et al. 2021).

In this report, we present the number of Medicaid beneficiaries using LTSS in 2019 based on data from the Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF), the most

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comprehensive national dataset on beneficiary enrollment and service use for Medicaid and the Children’s Health Insurance Program (CHIP).

We defined LTSS categories in two ways and calculated user counts separately for each definition. The first definition, used in our main analysis, drew on the service categories in the Medicaid LTSS Annual Expenditures Reports published by the Centers for Medicare & Medicaid Services (CMS). The LTSS expenditures reports use data from various sources, including the CMS-64 Medicaid program expenditure forms.² These reports do not include information on the number of Medicaid LTSS users because the underlying sources do not include beneficiary-level data. Therefore, this report augments the LTSS expenditures reports and provides counts of Medicaid users for 15 LTSS categories included in the expenditures reports.

The second definition of LTSS drew on 10 HCBS categories listed in section 9817 of the American Rescue Plan Act of 2021 (ARP). In response to the COVID-19 public health emergency, section 9817 of the ARP temporarily increased the federal medical assistance percentage (FMAP) for certain Medicaid HCBS expenditures by 10 percentage points from April 1, 2021 through March 31, 2022 (CMS 2021[a]). Unlike the list of HCBS tracked in the LTSS expenditures reports, the ARP does not include the Health Homes programs and the Money Follows the Person (MFP) demonstration in the list of HCBS eligible for increased FMAP. The ARP also has slightly different definitions of rehabilitative and private duty nursing services covered through state plan benefits. Although the ARP addresses only HCBS and does not include institutional services, we included institutional services in the ARP definition of LTSS to examine the balance of institutional versus HCBS users.

Table 1 summarizes the LTSS categories included in the two definitions. For each set of counts, we also calculated the overall percentage of Medicaid LTSS beneficiaries receiving HCBS to examine the balance in utilization between institutional care and HCBS.

Table 1. LTSS categories included in the analysis

LTSS category		Included in LTSS user counts based on service categories from:	
		LTSS Expenditures Reports ^a	Section 9817 of the ARP ^b
Institutional service	Nursing facilities	Yes	Yes ^d
	Intermediate Care Facilities for Individuals with Intellectual Disabilities	Yes	Yes ^d
	Mental health facilities ^c	Yes	Yes ^d

² See Murray et al. (2021) for more information on data sources used for the most recent Medicaid LTSS Annual Expenditures Report.

LTSS category		Included in LTSS user counts based on service categories from:	
		LTSS Expenditures Reports ^a	Section 9817 of the ARP ^b
HCBS	Section 1915(c) waiver programs	Yes	Yes
	Section 1915(i) HCBS state plan option	Yes	Yes
	Section 1915(j) self-directed personal assistance services	Yes	Yes
	Section 1915(k) Community First Choice	Yes	Yes
	Program of All-Inclusive Care for the Elderly	Yes	Yes
	Health Homes programs	Yes	No
	Money Follows the Person demonstration	Yes	No
	Personal care services ^e	Yes	Yes
	Home health services ^f	Yes	Yes
	Rehabilitative services ^f	Yes—only services rendered in non-school-based settings	Yes—only services rendered in non-institutional settings ^g
	Case management services ^f	Yes	Yes
	Private duty nursing services ^f	Yes—services rendered in any setting	Yes—only services rendered in non-institutional settings ^g

Source: Murray et al. (2021); CMS (2021[a]).

Note: Rehabilitative and private duty nursing services are included in both the LTSS expenditures reports and the ARP with slightly different definitions. In the expenditures reports, rehabilitative services are defined as those rendered in a non-school-based settings, and private duty nursing services are those rendered in any setting. In the ARP, rehabilitative services are those rendered in any setting and private duty nursing services are those rendered in beneficiaries' own home. Appendix A presents for more detail on the methods used to identify these categories.

^a These categories align with those included in the Medicaid LTSS Annual Expenditures Reports.

^b These categories align with HCBS categories eligible for increased FMAP under section 9817 of the ARP.

^c Mental health facilities include institutions for mental diseases for people ages 65 and older and inpatient psychiatric facilities for people younger than age 21. The TAF contains separate codes for these two settings.

^d Although the ARP is only for HCBS and does not include institutional services, we included institutional services in the ARP definition of LTSS to examine the balance of institutional and HCBS users.

^e This category includes state plan personal care services and excludes personal care services covered through section 1915(j) state plan option.

^f This category includes state plan benefit services and excludes all relevant services provided through other HCBS authorities, such as section 1915(c) waiver programs and section 1915(i), 1915(j), and 1915(k) state plan options.

^g We excluded the following settings: prisons/correctional facilities, inpatient hospitals, skilled nursing facilities, nursing facilities, custodial care facilities, inpatient psychiatric facilities, Intermediate Care Facilities for Individuals with Intellectual Disabilities, residential substance abuse treatment facilities, psychiatric residential treatment centers, and comprehensive inpatient rehabilitation facilities.

ARP = The American Rescue Plan Act of 2021; CMS = Centers for Medicare & Medicaid Services; FMAP = federal medical assistance percentage; HCBS = home- and community-based services; LTSS = long-term services and supports; T-MSIS = Transformed Medicaid Statistical Information System; TAF = T-MSIS Analytic Files.

B. Methods

Data sources. We used three 2019 TAFs (Version 5.0) to identify Medicaid LTSS users for each service category listed in Table 1.³

1. The Annual Demographic and Eligibility (DE) file – this file includes demographic, eligibility, and enrollment information for all individuals ever enrolled in Medicaid or CHIP during the calendar year (CMS 2021[b]).
2. The Long-Term Care (LT) claims file – this file includes claims for services rendered in long-term care institutions, including nursing facilities, Intermediate Care Facilities for Individuals with Intellectual Disabilities (ICF/IIDs), mental health facilities, and independent (free-standing) psychiatric wings of acute care hospitals (CMS 2021[c]). The file includes fee-for-service (FFS) claims, managed care (MC) encounter claims, service tracking claims, and supplemental payment claims for Medicaid and CHIP.
3. The Other Services (OT) claims file – this file includes claims for services rendered outside of inpatient hospitals, any of the institutional care settings included in the LT file, or pharmacies, such as outpatient services, physician services, laboratory and imaging services, home health services, HCBS, and dental services (CMS 2021[c]). The file includes FFS claims, MC encounter claims, service tracking claims, and supplemental payment claims for Medicaid and CHIP.

User identification methodology. We included beneficiaries who had at least one month of Medicaid enrollment with any scope of benefits—full, comprehensive, or limited benefits—during calendar year 2019 in 50 states and the District of Columbia (CMS 2020[b]). We included FFS claims and MC encounter records and excluded denied line claims. We further excluded claims that were at least partially covered by Medicare (“crossover claims”) to restrict the analysis to Medicaid-only services.

To count Medicaid beneficiaries who used institutional LTSS, we used the LT file to identify claims originating from nursing facilities, ICF/IIDs, institutions for mental diseases for people ages 65 and older, or inpatient psychiatric facilities for people younger than age 21 (this research brief categorizes the latter two settings as mental health facilities).⁴ We defined institutional LTSS users as beneficiaries who had at least one claim originating from any one of these four institutional settings (see Appendix A for detailed user identification methodology).

To count Medicaid beneficiaries who received services covered under the section 1915(c) waiver programs, section 1915(i) HCBS state plan option, section 1915(j) self-directed personal assistance service (PAS) option, section 1915(k) Community First Choice option, Health Homes programs, MFP demonstration, or Program of All-Inclusive Care for the Elderly (PACE)—which this brief collectively refers to as program-based HCBS—we identified potential service users in two ways:

³ The 2019 TAFs were the most recently available TAFs at the time of the analysis. We used the TAF data that were used to create the 2019 TAF Research Identifiable Files Release 1, with at least 12 months of claims runout for all months in the year and for all states.

⁴ Although some states cover services for adults ages 21 to 64 in institutions for mental diseases through the section 1115 demonstration authority, we did not separately identify this group as institutional service users because when writing this research brief, there was no recommended (tested) method of reliably identifying this population in the TAF. Appendix A includes more information.

1. Using the DE file to identify beneficiaries with at least one month of enrollment in these programs using program-specific data elements.
2. Using the OT file to identify beneficiaries with at least one claim covered under these programs.

For most programs, we found that the second approach of using the OT file (reflecting service utilization) provided more realistic user counts based on data missingness and available benchmarking sources, such as the fiscal year (FY) 2019 Medicaid LTSS Annual Expenditures Report and the 2017–2018 Medicaid Section 1915(c) Waiver Programs Annual Expenditures and Beneficiaries Report, compared with the first approach of using the DE file (reflecting program enrollment) (Murray et al. 2021; Ross et al. 2021). However, for the Health Homes programs and PACE, we only identified users in the DE file and not in the OT file. Therefore, in this brief, we present user counts from the OT file for section 1915(c) waiver programs, section 1915(i) HCBS state plan option, section 1915(j) self-directed PAS option, section 1915(k) Community First Choice option, and MFP demonstration. For Health Homes programs and PACE, we present user counts from the DE file. See Appendix B for more information on the differences in the user counts between the DE and OT files.

To count Medicaid beneficiaries who used HCBS covered under state plan benefits, including personal care services (not covered under section 1915(j)), home health services, rehabilitative services, case management services, and private duty nursing services, we used the OT file to identify beneficiaries with at least one claim reported for these services.^{5,6} For the user counts based on the LTSS expenditure categories, we restricted the rehabilitative service claims to those rendered in a non-school-based setting (place of service code not “school”).⁷ For the ARP user counts, we restricted the rehabilitative service and private duty nursing claims to those rendered in a non-institutional setting.⁸

To analyze the balance between institutional care and HCBS users, we separately calculated the percentage of the total unduplicated count of LTSS users who used institutional services, HCBS, and both.

Sensitivity analyses. The main analysis applies the most inclusive definition of LTSS users by counting any Medicaid beneficiary, regardless of the scope of their Medicaid benefits (full, comprehensive, or

⁵ For home health services, the Medicaid LTSS Annual Expenditures Reports analyze CMS-64 line item 12, Home Health Services, which includes all home health expenditures. For consistency, we included beneficiaries with any state plan home health use.

⁶ The Medicaid LTSS Annual Expenditures Reports define case management as either targeted case management services or statewide case management services (CMS-64 line items 24A, Targeted Case Management Services – Community Case-Management, or 24B, Case Management – State Wide). To align with this definition, we included beneficiaries with either state plan targeted case management or statewide case management claims.

⁷ For rehabilitative services, the Medicaid LTSS Annual Expenditures Reports analyze CMS-64 line item 40, Rehabilitative Services (non-school-based), which explicitly excludes all school-based rehabilitative service expenditures. For consistency, we excluded rehabilitative claims with a place of service code of 3 = school. The expenditures for school-based rehabilitative services are reported under CMS-64 line item 39, School Based Services, which is a broad category of services furnished in schools or educational programs. The Medicaid LTSS Annual Expenditures Reports do not analyze these expenditures.

⁸ We excluded the following place-of-service codes: 9 = prison/correctional facility, 21 = inpatient hospital, 31 = skilled nursing facility, 32 = nursing facility, 33 = custodial care facility, 51 = inpatient psychiatric facility, 54 = ICF/IID, 55 = residential substance abuse treatment facility, 56 = psychiatric residential treatment center, and 61 = comprehensive inpatient rehabilitation facility.

limited), with at least one LTSS claim or one month of enrollment in the Health Homes program or PACE. However, this approach could result in overcounting the true LTSS population if many beneficiaries, especially those with limited Medicaid benefits, were one-time service users. To understand whether the user counts were sensitive to different approaches, we compared the main user counts to (1) user counts after restricting to beneficiaries who had full or comprehensive scope of Medicaid benefits (excluding beneficiaries with limited or restricted benefits) and (2) user counts after restricting to beneficiaries with at least two claims in a category (excluding beneficiaries with only one claim for a service category).

C. Results

1. Institutional service users

User counts. In 2019, 1,678,646 Medicaid beneficiaries received institutional LTSS across 51 states (Table 2). Of the total institutional service users, 1,052,707 beneficiaries (62.7 percent) received services via FFS delivery, and 748,521 beneficiaries (44.6 percent) received services via MC delivery.⁹ By institutional service category:

- 1,466,115 beneficiaries (87.3 percent) received nursing facility services;¹⁰
- 81,020 beneficiaries (4.8 percent) received ICF/IID services; and
- 163,088 beneficiaries (9.7 percent) received mental health facility services.

A small percentage of beneficiaries received multiple types of institutional services. Of the 1.7 million institutional service users, 31,606 (1.9 percent) received more than one type of institutional service. The most common combination of services was nursing facility and mental health facility services, comprising 82.0 percent of beneficiaries with multiple institutional services.

Nationally, 1.9 percent of Medicaid beneficiaries used any institutional service in 2019. This ranged from 0.7 percent of Medicaid beneficiaries in Oregon to 4.3 percent of Medicaid beneficiaries in North Dakota. Across the types of institutional services, 1.7 percent of Medicaid beneficiaries used nursing facility services, 0.1 percent used ICF/IID services, and 0.2 percent used mental health facility services.

Some states had unexpected user counts:

- We identified more ICF/IID or mental health facility service users than nursing facility services users in Delaware, Hawaii, Maine, and New Hampshire. This finding is unexpected because nursing facility service is a mandatory Medicaid benefit for all states, so we expected to see the highest user counts for nursing facilities (CMS n.d.).
- We did not identify any ICF/IID users in Arkansas, but the state reported ICF/IID expenditures in CMS-64 for FY 2019 (Murray et al. 2021).
- Similarly, we did not identify any mental health facility service users in Arkansas, Colorado, Maryland, Missouri, Oregon, Tennessee, Utah, and Vermont, but these states reported mental health

⁹ The FFS and MC percentages do not sum to 100 because some beneficiaries had both FFS and MC claims.

¹⁰ The total number of institutional service users (1,678,646 beneficiaries) represents unduplicated count of beneficiaries who received at least one institutional service in 2019. The number of users across institutional settings does not sum to 100 percent because some users received more than one type of institutional service.

facility expenditures in FY 2019. In contrast, Hawaii did not report any mental health facility expenditures in FY 2019, but we identified users in the TAF.

Beneficiary characteristics. The average age of institutional service users was 67.5 years, and 64.1 percent of users were ages 65 and older (not displayed). Most institutional service users (84.5 percent) were eligible for Medicaid on the basis of being 65 years old or older, or having blindness or disabilities (“ABD”). Institutional service users were eligible for Medicaid for an average of 10.4 months in 2019.¹¹ About three-quarters (73.7 percent) of the users were dually eligible for Medicare.¹²

Sensitivity analyses. Nearly all institutional service users (1,660,224, 98.9 percent) had full or comprehensive Medicaid benefits, suggesting that our main user count is not sensitive to the scope of Medicaid benefits. Most institutional service users (84.8 percent) had more than one claim for a given service category, indicating that most required more than one-time service. However, we found differences by service category. Most nursing facility and ICF/IID service users (88.4 percent and 97.0 percent, respectively) had more than one nursing facility or ICF/IID claim in the year, which was expected because these facilities typically provide custodial care. In contrast, only 37.1 percent of mental health facility service users had more than one claim in the calendar year, suggesting that many of these beneficiaries are one-time service users during the year.

2. HCBS users

User counts based on service categories from LTSS expenditures reports (main counts). Nationally, 9,716,159 Medicaid beneficiaries received either program-based HCBS or state plan benefit HCBS in 2019 (Tables 3a and 4a). Of all HCBS users, excluding enrollees in the Health Homes program, 3,465,295 beneficiaries (35.7 percent) received services via FFS delivery, and 4,489,139 beneficiaries (46.2 percent) received services via MC delivery.¹³ Of the total HCBS users:¹⁴

- 1,648,504 beneficiaries (17.0 percent) received section 1915(c) waiver program services;¹⁵
- 25,486 beneficiaries (0.3 percent) received section 1915(i) HCBS state plan option services;

¹¹ CMS’s assessment of the 2019 TAF data quality found that the eligibility group code is of high concern in the District of Columbia, Iowa, New Jersey, North Dakota, Oregon, and Vermont (CMS 2021[d]). This could have impacted the classification of beneficiaries by Medicaid eligibility categories in these states.

¹² CMS’s assessment of the 2019 TAF data quality found that the dual eligibility code is unusable in Alabama and Utah (CMS 2021[d]). This could have impacted the classification of beneficiaries by dual eligibility status in these states.

¹³ This FFS and MC breakdown does not include enrollees in the Health Homes program because we identified Health Homes program enrollees in the DE file (based on at least one month of enrollment) instead of in the OT file (based on at least one claim). Therefore, it was not feasible to identify Health Homes program enrollees by FFS and MC delivery systems using the same methodology we used for other categories. PACE is a capitated program and PACE enrollees are considered as beneficiaries receiving services via the MC delivery system.

¹⁴ All figures include enrollees from Alabama, Kentucky, and Vermont. See below for further detail on reporting errors in these states.

¹⁵ The total number of HCBS users based on the service categories from the LTSS expenditures reports (9,716,159 beneficiaries) represents the unduplicated count of beneficiaries who received at least one HCBS (either a program-based or state plan benefit service). The number of users across HCBS categories does not sum to 100 percent because some beneficiaries received more than one type of HCBS.

- 218,175 beneficiaries (2.2 percent) received section 1915(j) PAS option services;
- 62,207 (0.6 percent) received section 1915(k) Community Choice First option services;
- 2,780,861 beneficiaries (28.6 percent) were in the Health Homes program;
- 5,354 beneficiaries (0.1 percent) were in the MFP demonstration;
- 62,802 beneficiaries (0.6 percent) were in the PACE program;
- 1,103,788 beneficiaries (11.4 percent) received state plan personal care services;
- 2,495,355 beneficiaries (25.7 percent) received state plan home health services;
- 2,017,792 beneficiaries (20.8 percent) received state plan non-school-based rehabilitative services;
- 1,874,501 beneficiaries (19.3 percent) received state plan case management services; and
- 84,086 beneficiaries (0.9 percent) received state plan private duty nursing services.

Of the total HCBS users, 2,166,837 (22.3 percent) received two or more types of HCBS. Among beneficiaries who received multiple types of HCBS, the three most common combinations of services were (1) section 1915(c) waiver program and state plan case management services (16.3 percent), (2) state plan non-school-based rehabilitative and case management services (10.2 percent), and (3) Health Homes program and state plan home health services (10.1 percent).

Nationally, 11.0 percent of Medicaid beneficiaries used any HCBS in 2019; however, this includes three states with reporting errors. Kentucky reported all of its Medicaid beneficiaries as Health Homes program enrollees, even though Kentucky did not operate a Health Homes program in 2019. Vermont and Alabama reported nearly half of their Medicaid beneficiaries as Health Homes program enrollees. These data reporting errors resulted in Kentucky, Vermont, and Alabama having 100 percent, 63.4 percent, and 47.7 percent of their Medicaid beneficiaries identified as HCBS users, respectively. After excluding these three states, 7,475,171 of 85,120,403 Medicaid beneficiaries (8.8 percent) received HCBS across 48 states. The percentage of Medicaid beneficiaries who received HCBS ranged from 2.1 percent in California to 32.1 percent in Wyoming.

The remainder of this section will focus on 48 states after excluding Kentucky, Vermont, and Alabama. For completeness in reporting, however, Tables 3a, 4a, and 5a present all identified HCBS users, including the user counts for the Home Health program in Kentucky, Vermont, and Alabama.

Across the types of HCBS, 1.9 percent of Medicaid beneficiaries used section 1915(c) waiver program services, 0.03 percent used section 1915(i) HCBS state plan option services, 0.3 percent used section 1915(j) self-directed PAS option services, 0.1 percent used section 1915(k) Community First Choice option services, 0.7 percent used Health Homes program services, 0.01 percent used MFP services, 0.1 percent used PACE services, 1.3 percent used state plan personal care services, 2.9 percent used state plan home health services, 2.4 percent used state plan non-school-based rehabilitative services, 2.2 percent used state plan case management services, and 0.1 percent used state plan private duty nursing services.

Some states had unexpected user counts:

- Program-based HCBS users are complicated to assess because users can be identified in either the DE file (through enrollment flags) or the OT file (through claims). Although some states appeared to have accurate reporting across both files, most states had inconsistent reporting. We primarily relied on counts from the OT file for this analysis. See Appendix B for more information.

- For many states, the user counts did not align with expenditures they reported in FY 2019. For example, for state plan private duty nursing services, we identified users in Alaska, Florida, Georgia, Idaho, Nebraska, New Mexico, New York, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, and Wyoming, but these states did not report any expenditures for this service category in CMS-64 data. Conversely, Iowa, Nevada, and North Carolina reported expenditures in CMS-64, but we did not identify any users.

Beneficiary characteristics based on the main counts. The average age of HCBS users (excluding Alabama, Kentucky, and Vermont) was 38.5 and most (81.0 percent) were younger than age 65 (not displayed). Slightly more than half of the users (54.6 percent) were eligible for Medicaid on the basis of being ABD, and 42.9 percent were non-ABD adults and families eligible for Medicaid (generally, low-income adults and parents/caretaker relatives). On average, HCBS users had Medicaid eligibility for 10.9 months in 2019. As expected of a younger population, only 33.0 percent of HCBS users were dually eligible for Medicare.

Sensitivity analyses for the main counts. Nearly 98.8 percent (7,384,729) of total HCBS users (excluding Alabama, Kentucky, and Vermont) had full or comprehensive Medicaid benefits, suggesting that the main HCBS user count is not sensitive to the scope of Medicaid benefits. For categories identified from the OT file (based on claims), 81.4 percent of HCBS users had more than one claim in the year, indicating that most beneficiaries required more than one-time service. However, we found differences by service category. Ninety percent or more of program-based HCBS users had at least two claims: 96.8 percent of users of section 1915(c) waiver services, 89.5 percent of users of section 1915(i) HCBS state plan option services, 94.5 percent of users of section 1915(j) self-directed PAS option services, 89.7 percent of users of section 1915(k) Community First Choice option services, and 95.1 percent of MFP service users. In comparison, a lower percentage of beneficiaries who received some state plan benefit HCBS had at least two claims: 95.6 percent of users of state plan personal care services, 66.8 percent of users of state plan home health services, 80.5 percent of users of state plan non-school-based rehabilitative services, 80.6 percent of users of state plan case management services, and 57.1 percent of users of state plan private duty nursing services. The difference between program-based and state plan benefit HCBS is expected—more beneficiaries receiving state plan benefit HCBS, especially home health and private duty nursing services, were one-time service users than those receiving program-based HCBS.

User counts based on ARP service categories. Across 51 states, 7,444,832 Medicaid beneficiaries received either program-based HCBS or state plan benefit HCBS in 2019 based on the ARP service categories (Tables 3b and 4b).¹⁶ Of all ARP HCBS users, 3,490,646 beneficiaries (46.9 percent) received services via FFS delivery and 4,484,793 (60.2 percent) received services via MC delivery.¹⁷ Of the total HCBS users:

¹⁶ Although Alabama, Kentucky, and Vermont were excluded from the main user counts due to reporting errors in the Health Homes program, they were included in the counts based on the ARP categories because Health Homes program is not included in section 9817 of the ARP as a category of HCBS. As a result, the three states did not have major reporting issues identified for the ARP-based user counts. Excluding Alabama, Kentucky, and Vermont from the ARP-based user counts would result in 7,314,677 Medicaid beneficiaries receiving HCBS.

¹⁷ The FFS and MC percentages do not sum to 100 because some beneficiaries had both FFS and MC claims.

- 1,648,504 beneficiaries (22.1 percent) received section 1915(c) waiver program services;¹⁸
- 25,486 beneficiaries (0.3 percent) received section 1915(i) HCBS state plan option services;
- 218,175 beneficiaries (2.9 percent) received section 1915(j) PAS option services;
- 62,207 (0.8 percent) received section 1915(k) Community Choice First option services;
- 62,802 beneficiaries (0.8 percent) were in the PACE program;
- 1,103,788 beneficiaries (14.8 percent) received state plan personal care services;
- 2,495,355 beneficiaries (33.5 percent) received state plan home health services;
- 2,058,981 beneficiaries (27.7 percent) received state plan rehabilitative services rendered in non-institutional settings;
- 1,874,501 beneficiaries (25.2 percent) received state plan case management services; and
- 56,120 beneficiaries (0.8 percent) received state plan private duty nursing services rendered in non-institutional settings.

Of the total HCBS users, 1,784,225 (24.0 percent) received two or more types of HCBS. The three most common combinations of services were (1) section 1915(c) waiver program and state plan case management services (20.2 percent of beneficiaries with multiple types of HCBS), (2) state plan non-institutional rehabilitative and case management services (12.4 percent), and (3) state plan personal care and home health services (11.6 percent).

Sensitivity analyses for the ARP counts. Similar to the main user counts, nearly 98.8 percent (7,354,864) of total HCBS users (including Alabama, Kentucky, and Vermont) based on ARP categories had full or comprehensive Medicaid benefits, suggesting that the ARP counts are not sensitive to the scope of Medicaid benefits. Compared with the main user counts, a similar percentage of beneficiaries using state plan rehabilitative and private duty nursing services rendered in non-institutional settings had at least two claims: 80.9 percent of users of state plan rehabilitative services and 62.2 percent of users of home-based private duty nursing services.¹⁹

3. LTSS user count balance

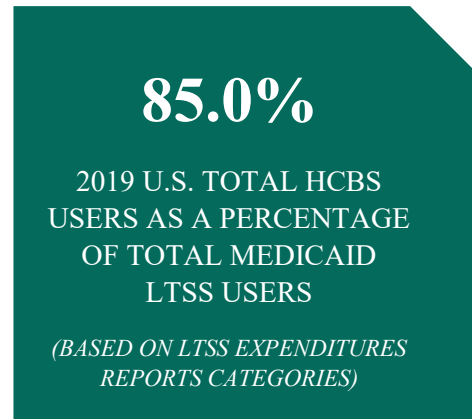
Service categories from LTSS expenditures reports (main analysis). Based on the service categories in the LTSS expenditures reports, we identified 11,034,421 unique Medicaid beneficiaries who used LTSS in 2019 (Table 5a). However, Alabama, Kentucky, and Vermont had reporting issues for the Health Homes program, inflating the total number of LTSS users.²⁰ After excluding these three states, 8,789,541

¹⁸ The total number of HCBS users based on the ARP service categories (7,444,832 beneficiaries) represents the unduplicated count of beneficiaries who received at least one HCBS (either a program-based or state plan benefit service). The number of users across HCBS categories does not sum to 100 percent because some beneficiaries received more than one type of HCBS.

¹⁹ The other service categories did not change from the definitions in the LTSS expenditures reports.

²⁰ As discussed in the “HCBS users” section, Kentucky, Vermont, and Alabama had 100 percent, 64.5 percent, and 47.8 percent of Medicaid beneficiaries identified as LTSS users, respectively, but these likely reflect errors in state reporting. Kentucky reported all of its Medicaid beneficiaries as Health Homes program enrollees, even though Kentucky did not operate a Health Homes program in 2019. Vermont and Alabama reported nearly half of their Medicaid beneficiaries as Health Homes program enrollees.

Medicaid beneficiaries across 48 states received LTSS in 2019. Of these, 4,235,162 beneficiaries (48.2 percent) received services via FFS delivery, and 5,056,289 beneficiaries (57.5 percent) received services via MC delivery.²¹ By type of LTSS among 48 states, 1,618,717 beneficiaries (18.4 percent) received institutional services; 7,475,171 beneficiaries (85.0 percent) received HCBS; and 304,347 beneficiaries (3.5 percent) received both. Nationally, 10.3 percent of Medicaid beneficiaries used LTSS, and this ranged from 3.3 percent in California to 34.6 percent in Wyoming. Generally, states had about 1 to 5 percent of LTSS beneficiaries receiving both institutional care and HCBS. Some states, however, had a higher percentage of beneficiaries using both types of LTSS: Delaware (8.3 percent of LTSS users), Connecticut (7.8 percent), and Washington (6.1 percent).

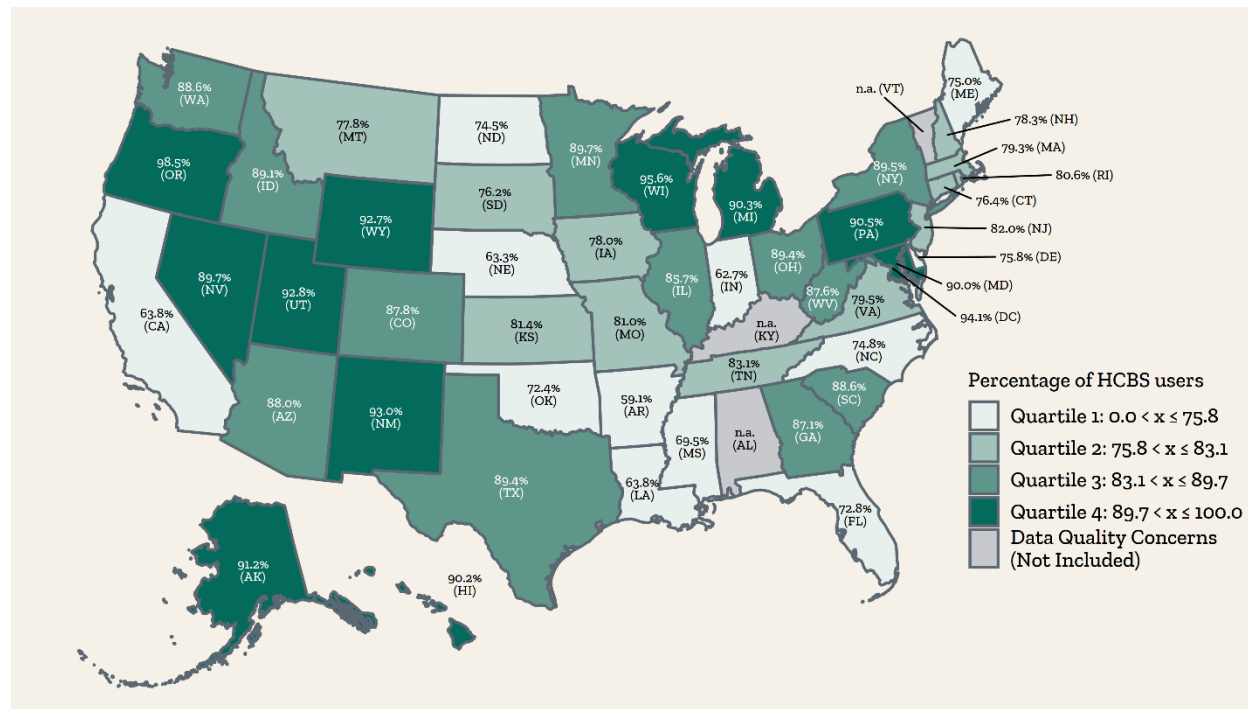


The percentage of total LTSS users who used HCBS is one measure to assess states’ balance between institutional care and HCBS. This measure can complement the measure of the share of total Medicaid LTSS spending devoted to HCBS reported in the annual Medicaid LTSS expenditures reports (for example, see Murray et al. 2021). Nationally, HCBS users as a percentage of total Medicaid LTSS users was 85.0 percent in 2019 (excluding Kentucky, Vermont, and Alabama). The five states with the highest percentage of HCBS use among LTSS users in 2019 included Oregon (98.5 percent), Wisconsin (95.6 percent), the District of Columbia (94.1 percent), New Mexico (93.0 percent), and Utah (92.8 percent) (Figure 1). In contrast, the five states with the lowest percentage of HCBS users among total LTSS users in 2019 included Arkansas (59.1 percent), Indiana (62.7 percent), Nebraska (63.3 percent), California (63.8 percent), and Louisiana (63.8 percent).

Sensitivity analysis of the main counts. Our total LTSS user counts were not sensitive to the scope of Medicaid benefits. Of the total users identified based on the LTSS expenditures categories, 8,683,235 (98.8 percent) had full or comprehensive Medicaid benefits. See section 2, “HCBS users,” for the sensitivity analysis of our user counts after requiring at least two claims in each service category.

²¹ The FFS and MC percentages do not sum to 100 because some beneficiaries had both FFS and MC claims. This FFS and MC breakdown does not include enrollees in the Health Homes program because we identified Health Homes program enrollees in the DE file (based on at least one month of enrollment) instead of in the OT file (based on at least one claim). Therefore, it was not feasible to identify Health Homes program enrollees by FFS and MC delivery systems using the same methodology we used for other categories. PACE is a capitated program and PACE enrollees are considered beneficiaries receiving services via MC delivery.

Figure 1. Percentage of Medicaid LTSS users who received HCBS based on service categories in the LTSS expenditures reports in 2019, by state



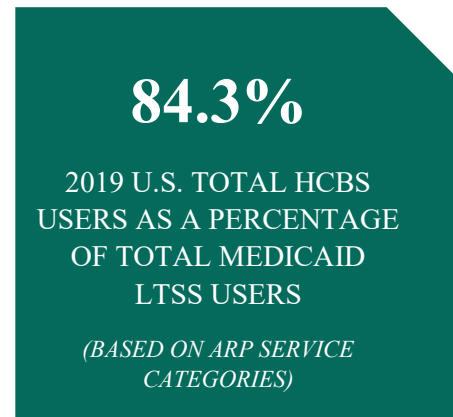
Source: Mathematica’s analysis of the 2019 LT, OT, and DE TAFs.

Note: This figure presents the percentage of Medicaid LTSS users who received HCBS in each state, categorized into quartiles. The HCBS categories were defined based on the LTSS expenditures reports categories (Table 1). We calculated the percentages by dividing the number of unduplicated Medicaid beneficiaries who received any HCBS by the number of unduplicated Medicaid beneficiaries who received any LTSS (either institutional service or HCBS). The data for this figure are in the column labeled HCBS in Table 5a. Kentucky, Vermont, and Alabama’s percentages are not reported in this figure because they likely reflect data errors. Kentucky reported all of its Medicaid beneficiaries as Health Homes program enrollees. Vermont and Alabama reported nearly half of their Medicaid beneficiaries as Health Homes program enrollees.

DE = Demographic and Enrollment; HCBS = home and community-based services; LT = Long-term Care; LTSS = long-term services and supports; OT = Other Services; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

ARP service categories. Using the ARP categories, we identified 8,828,632 Medicaid beneficiaries who used LTSS across 51 states in 2019 (Table 5b).²² Of these, 4,429,900 beneficiaries (50.2 percent) received services via FFS delivery, and 5,075,992 beneficiaries (57.5 percent) received services via MC delivery. By type of LTSS, 1,678,646 beneficiaries (19.0 percent) received institutional services; 7,444,832 beneficiaries (84.3 percent) received HCBS; and 294,846 beneficiaries (3.3 percent) received both. Nationally, 10.0 percent of Medicaid beneficiaries used LTSS, ranging from 3.3 percent in California to 23.2 percent in Pennsylvania. Generally, states had about 1 to 5 percent of LTSS beneficiaries receiving both institutional care and HCBS. But some states had a higher percentage of beneficiaries using both types of LTSS: Delaware (8.1 percent of LTSS users), Connecticut (7.5 percent), and Massachusetts (5.8 percent).

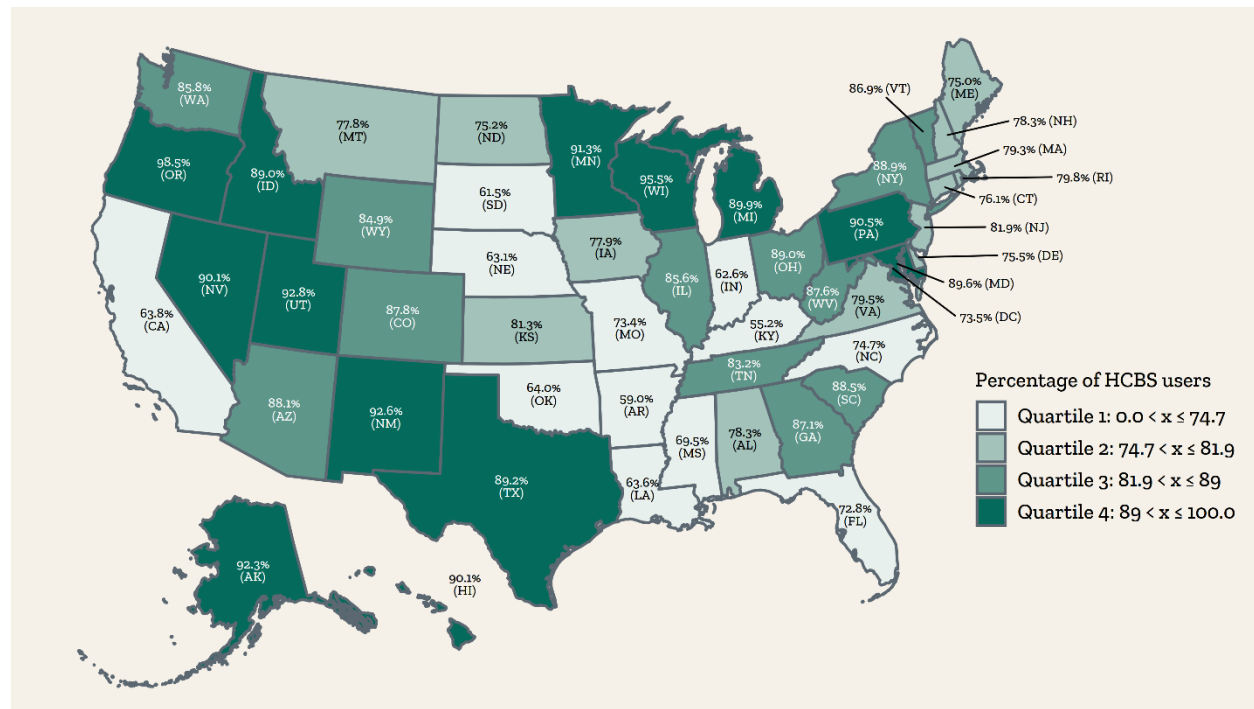
Compared with the main user counts, the ARP counts resulted in small changes in the state rankings for the percentage of LTSS users who used HCBS. Nationally, HCBS users as a percentage of total Medicaid LTSS users was 84.3 percent in 2019 (including Alabama, Kentucky, and Vermont). The five states with the highest percentage of HCBS use among LTSS users in 2019 were Oregon (98.5 percent), Wisconsin (95.5 percent), Utah (92.8 percent), New Mexico (92.6 percent), and Alaska (92.3 percent) (Figure 2). The five states with the lowest percentage of HCBS users among total LTSS users in 2019 were Kentucky (55.2 percent), Arkansas (59.0 percent), South Dakota (61.5 percent), Indiana (62.6 percent), and Nebraska (63.1 percent). In general, the state rankings for the percentage of HCBS users based on the LTSS expenditures categories and ARP categories were similar except for a handful of states (Figure 3). The District of Columbia, Wyoming, Missouri, and South Dakota saw the largest drop in the rankings (by more than 10 places) between the LTSS expenditures categories and ARP categories, suggesting that their HCBS population is sensitive to the definition of state plan rehabilitative services and state plan private duty nursing services, and the inclusion of the Health Homes program and MFP demonstration. In contrast, Minnesota and North Dakota had the largest increase in the rankings (by more than 5 places).



Sensitivity analysis of the ARP counts. The total LTSS user counts based on the ARP categories were not sensitive to the scope of Medicaid benefits. Of the total users identified based on the ARP categories, 8,722,410 (98.8 percent) had full or comprehensive Medicaid benefits. See section 2, “HCBS users,” for the sensitivity analysis of our user counts after requiring at least two claims in each service category.

²² Although Alabama, Kentucky, and Vermont were excluded from the main user counts, they were included in the calculations based on the ARP categories because the Health Homes program is not included in section 9817 of the ARP. Excluding Alabama, Kentucky, and Vermont from the ARP definition would result in 8,643,537 Medicaid beneficiaries receiving LTSS.

Figure 2. Percentage of Medicaid LTSS users who received HCBS based on ARP categories in 2019, by state

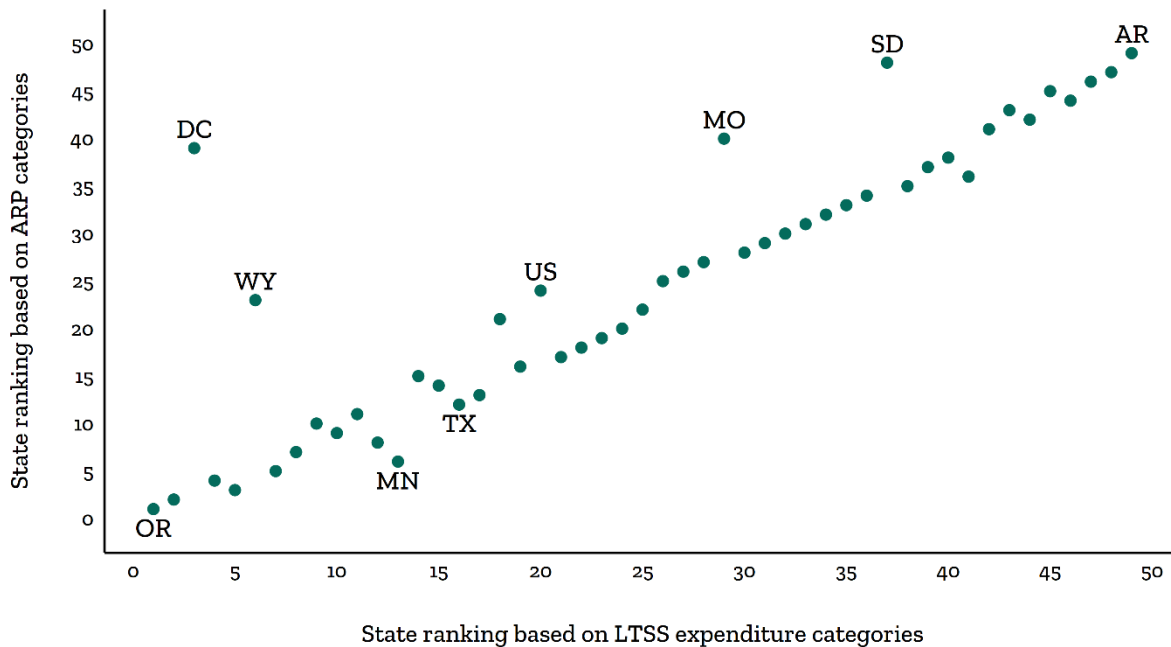


Source: Mathematica’s analysis of the 2019 LT, OT, and DE TAFs.

Note: This figure presents the percentage of Medicaid LTSS users who received HCBS in each state, categorized into quartiles. The HCBS categories were defined based on the ARP categories (Table 1). We calculated the percentages by dividing the number of unduplicated Medicaid beneficiaries who received any HCBS by the number of unduplicated Medicaid beneficiaries who received any LTSS (either institutional service or HCBS). The data for this figure are in Table 5b under the column labeled HCBS.

DE = Demographic and Enrollment; HCBS = home and community-based services; LT = Long-term Care; LTSS = long-term services and supports; OT = Other Services; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

Figure 3. State rankings for the percentage of HCBS users by LTSS expenditures reports and ARP categories



Source: Mathematica’s analysis of the 2019 LT, OT, and DE TAFs.

Note: This figure presents state rankings for the percentage of HCBS users based on the LTSS expenditures reports and ARP HCBS categories (Table 1). We calculated the percentages by dividing the number of unduplicated Medicaid beneficiaries who received any HCBS by the number of unduplicated Medicaid beneficiaries who received any LTSS (either institutional services or HCBS). Higher rankings (with a lower ranking number) indicate a higher percentage of HCBS users. For example, Oregon (Rank 1) has the highest percentage of HCBS users in the U.S., and Arkansas (Rank 48) has the lowest percentage. We excluded Alabama, Kentucky, and Vermont because these states have data quality issues for the Health Homes program, which is included in the HCBS definition for the LTSS expenditures reports categories. The data for this figure can be found in Tables 5a and 5b under the column labeled HCBS.

ARP = American Rescue Plan Act of 2021; DE = Demographic and Enrollment; HCBS = home and community-based services; LT = Long-Term Care; LTSS = long-term services and supports; OT = Other Services; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

D. Discussion

Based on two definitions of LTSS categories—the Medicaid LTSS Annual Expenditures Reports and section 9817 of the ARP—we identified 11.0 and 8.8 million Medicaid beneficiaries, respectively, across 51 states who received LTSS through either FFS or MC delivery systems in 2019. However, Alabama, Kentucky, and Vermont had reporting errors for the Health Homes program. Excluding these states from the analysis of LTSS users based on the service categories from the LTSS expenditures reports resulted in 8.8 million LTSS users across 48 states. Of these 8.8 million LTSS beneficiaries identified based on the LTSS expenditures reports, 1.6 million beneficiaries (18.4 percent) received institutional services, 7.5 million beneficiaries (85.0 percent) received HCBS, and 0.4 million beneficiaries (3.3 percent) received both institutional and HCBS. Of the 8.8 million LTSS beneficiaries identified based on the ARP definitions, 1.7 million beneficiaries (19.0 percent) received institutional services, 7.4 million

beneficiaries (84.3 percent) received HCBS, and 0.3 million beneficiaries (3.3 percent) received both institutional and HCBS. For most states, the difference in HCBS definitions between the LTSS expenditures reports and the ARP did not affect the state rankings for the share of LTSS users who received any HCBS. However, a handful of states' rankings changed notably, suggesting that the definition of their HCBS populations is sensitive to the types of services included.

We made several important observations when comparing the 2019 LTSS user counts with the FY 2019 Medicaid LTSS expenditures (see Murray et al. 2021 for LTSS expenditures data). Although the proportion of national LTSS spending dedicated to HCBS has been increasing, the user count analysis highlighted that institutional service users spend a disproportionate share of Medicaid expenditures. In 2019, institutional service users comprised only 2.0 percent of Medicaid beneficiaries (18.9 percent of LTSS users), but institutional service expenditures comprised \$64.7 billion or 14.1 percent of total Medicaid spending.²³ In comparison, 8.8 percent of Medicaid beneficiaries used HCBS (85.0 percent of LTSS users) and HCBS expenditures were \$92.9 billion or 20.3 percent of total Medicaid spending.²³ These expenditures equate to about \$40,000 per institutional service user and \$12,000 per HCBS user.

At the state level, we found that some states' rankings for the HCBS user balance measure were generally consistent with their rankings for the HCBS expenditure balance measure (the percentage of Medicaid LTSS expenditures for HCBS). However, not all states that performed well on the HCBS user measure performed well on the HCBS expenditure measure, and vice versa. For example, in 2019, Oregon ranked at the top for both the HCBS user and HCBS expenditure balance measures, but Minnesota and Arizona were not among the top quartile of states for the HCBS user balance measure even though they ranked second and third, respectively, for the HCBS expenditure balance measure. Some of these differences could be due to data quality issues or data anomalies for either measure. Moving forward, CMS and state Medicaid programs can use both LTSS expenditures and user count information to better understand their LTSS balancing efforts.

Through sensitivity analyses, we found that our user counts did not change when we restricted the analysis to just those with full or comprehensive Medicaid benefits. The stability of the user counts, regardless of the scope of a beneficiary's benefit package, was expected because states typically provide LTSS to beneficiaries eligible for full or comprehensive benefits. We found that the user counts changed for certain categories when we required more than one LTSS claim to be counted as an LTSS user. The sensitivity of the user counts for some categories based on the number of required claims indicates that some categories have a larger portion of beneficiaries receiving one-time services, and these are more likely to be state plan HCBS, such as home health and case management services. Future research should focus on developing methods to better distinguish long-term (likely LTSS) users from short-term (likely non-LTSS) users.

Limitations

Our analysis had several limitations. First, some states had data quality issues in the 2019 TAF that might have affected the accuracy of their user counts. CMS's assessment of the 2019 TAF data quality showed that some states had overarching issues with data elements necessary to identify Medicaid beneficiaries or with the overall volume of claims reported to the TAF (CMS 2021[d]). We also encountered potential issues specific to certain states or service categories, such as implausible counts of beneficiaries enrolled

²³ We excluded Alabama, Kentucky, and Vermont from all figures.

in the Health Homes program or discrepancies between the user counts and the expenditures that states reported in CMS-64 (such as non-zero user count when a state reported \$0 in CMS-64, and vice versa).

Second, we could not include all authorities through which states can deliver LTSS, owing to the limitations of the beneficiary identification methodology. For example, we could not include adults ages 21 to 64 in institutions for mental diseases who are covered through the section 1115 demonstration authority; at the time of this analysis, there was no reliable method of identifying such beneficiaries in the TAF. Future research should focus on developing and testing methods to reliably identify beneficiaries who use LTSS categories or authorities that are not readily identifiable through specific data elements or codes.

Finally, although our analysis included managed care encounter claims, managed care LTSS users cannot be interpreted as managed LTSS (MLTSS) enrollees. There is wide variation in how states report MLTSS enrollees and managed care encounters in the TAF, and more research is needed to understand the quality of MLTSS and managed care data reported in the TAF.

Despite these issues, we were able to show unaltered user counts as they were identifiable in the TAF to provide a snapshot of LTSS users in the United States, with the goal of informing efforts to improve state reporting and TAF data quality.

Table 2. Medicaid beneficiaries who used institutional LTSS by delivery system, 2019

State	Total Medicaid beneficiaries ^a	Delivery system ^b	Any institutional LTSS ^c		Nursing facility services		ICF/IID services		Mental health facility services ^d	
			Users	% of Medicaid beneficiaries	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users
United States	88,031,869	Total	1,678,646	1.9	1,466,115	87.3	81,020	4.8	163,088	9.7
		FFS	1,052,707	1.2	930,045	88.3	67,543	6.4	74,201	7.0
		MC	748,521	0.9	653,028	87.2	13,705	1.8	93,692	12.5
Alabama	1,146,498	Total	24,099	2.1	22,203	92.1	26	0.1	1,904	7.9
		FFS	24,099	2.1	22,203	92.1	26	0.1	1,904	7.9
		MC	0	0.0	0	0.0	0	0.0	0	0.0
Alaska	246,408	Total	1,851	0.8	1,034	55.9	14	0.8	803	43.4
		FFS	1,851	0.8	1,034	55.9	14	0.8	803	43.4
		MC	0	0.0	0	0.0	0	0.0	0	0.0
Arizona	2,197,249	Total	23,912	1.1	18,288	76.5	0	0.0	5,646	23.6
		FFS	2,392	0.1	1,819	76.0	0	0.0	573	24.0
		MC	21,636	1.0	16,562	76.5	0	0.0	5,096	23.6
Arkansas	1,034,807	Total	24,423	2.4	24,423	100.0	0	0.0	0	0.0
		FFS	22,374	2.2	22,374	100.0	0	0.0	0	0.0
		MC	3,789	0.4	3,789	100.0	0	0.0	0	0.0
California	15,201,402	Total	195,702	1.3	173,312	88.6	7,361	3.8	39,597	20.2
		FFS	86,091	0.6	66,148	76.8	5,411	6.3	30,848	35.8
		MC	120,453	0.8	117,583	97.6	2,012	1.7	9,232	7.7
Colorado	1,480,172	Total	15,429	1.0	15,232	98.7	197	1.3	0	0.0
		FFS	15,400	1.0	15,203	98.7	197	1.3	0	0.0
		MC	32	0.0	32	100.0	0	0.0	0	0.0
Connecticut	1,098,768	Total	27,598	2.5	25,994	94.2	722	2.6	902	3.3
		FFS	27,598	2.5	25,994	94.2	722	2.6	902	3.3
		MC	0	0.0	0	0.0	0	0.0	0	0.0
Delaware	284,811	Total	7,877	2.8	3,787	48.1	115	1.5	3,980	50.5
		FFS	1,069	0.4	< 11	< 1.0	> 107	> 10.0	951	89.0
		MC	6,820	2.4	3,784	55.5	0	0.0	3,041	44.6
District of Columbia	275,321	Total	5,103	1.9	3,739	73.3	315	6.2	1,061	20.8
		FFS	3,979	1.4	3,606	90.6	309	7.8	68	1.7
		MC	1,175	0.4	> 175	> 14.9	< 11	< 0.9	996	84.8

Table 2 (continued)

State	Total Medicaid beneficiaries ^a	Delivery system ^b	Any institutional LTSS ^c		Nursing facility services		ICF/IID services		Mental health facility services ^d	
			Users	% of Medicaid beneficiaries	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users
Florida	4,891,445	Total	76,330	1.6	73,627	96.5	2,647	3.5	81	0.1
		FFS	24,757	0.5	22,049	89.1	2,647	10.7	81	0.3
		MC	68,158	1.4	68,158	100.0	0	0.0	0	0.0
Georgia	2,378,278	Total	38,660	1.6	37,632	97.3	218	0.6	810	2.1
		FFS	35,913	1.5	35,569	99.0	218	0.6	126	0.4
		MC	2,754	0.1	2,065	75.0	0	0.0	689	25.0
Hawaii	378,257	Total	3,925	1.0	1,689	43.0	2,929	74.6	119	3.0
		FFS	82	0.0	< 11	< 13.4	> 71	> 86.6	0	0.0
		MC	3,844	1.0	1,687	43.9	2,849	74.1	119	3.1
Idaho	324,367	Total	5,126	1.6	4,575	89.3	441	8.6	128	2.5
		FFS	4,551	1.4	4,020	88.3	441	9.7	92	2.0
		MC	2,110	0.7	2,089	99.0	0	0.0	36	1.7
Illinois	3,247,194	Total	72,062	2.2	57,731	80.1	6,432	8.9	8,130	11.3
		FFS	43,519	1.3	34,273	78.8	6,432	14.8	2,977	6.8
		MC	43,201	1.3	37,859	87.6	0	0.0	5,357	12.4
Indiana	1,718,639	Total	45,095	2.6	39,616	87.9	3,466	7.7	2,177	4.8
		FFS	43,775	2.5	39,159	89.5	3,466	7.9	1,310	3.0
		MC	1,619	0.1	719	44.4	0	0.0	900	55.6
Iowa	756,364	Total	20,660	2.7	17,352	84.0	1,815	8.8	1,559	7.5
		FFS	2,622	0.3	2,461	93.9	55	2.1	109	4.2
		MC	19,917	2.6	16,694	83.8	1,769	8.9	1,513	7.6
Kansas	447,133	Total	14,429	3.2	13,860	96.1	427	3.0	167	1.2
		FFS	2,378	0.5	2,056	86.5	> 313	> 13.2	< 11	< 0.5
		MC	13,478	3.0	13,218	98.1	114	0.8	167	1.2
Kentucky	1,574,036	Total	33,034	2.1	27,860	84.3	422	1.3	4,784	14.5
		FFS	25,297	1.6	24,827	98.1	422	1.7	65	0.3
		MC	7,805	0.5	3,091	39.6	0	0.0	4,726	60.6
Louisiana	1,801,560	Total	39,285	2.2	29,646	75.5	4,515	11.5	5,211	13.3
		FFS	33,351	1.9	28,902	86.7	> 4,508	> 13.5	< 11	< 0.0
		MC	6,127	0.3	918	15.0	0	0.0	5,209	85.0
Maine	345,750	Total	6,770	2.0	2,225	32.9	203	3.0	5,092	75.2
		FFS	6,770	2.0	2,225	32.9	203	3.0	5,092	75.2
		MC	0	0.0	0	0.0	0	0.0	0	0.0

Table 2 (continued)

State	Total Medicaid beneficiaries ^a	Delivery system ^b	Any institutional LTSS ^c		Nursing facility services		ICF/IID services		Mental health facility services ^d	
			Users	% of Medicaid beneficiaries	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users
Maryland	1,475,291	Total	26,474	1.8	26,396	99.7	80	0.3	0	0.0
		FFS	23,479	1.6	23,401	99.7	80	0.3	0	0.0
		MC	3,431	0.2	3,431	100.0	0	0.0	0	0.0
Massachusetts	2,012,568	Total	52,492	2.6	49,771	94.8	1,074	2.0	2,258	4.3
		FFS	40,255	2.0	37,769	93.8	358	0.9	2,258	5.6
		MC	13,604	0.7	13,352	98.1	716	5.3	0	0.0
Michigan	2,884,712	Total	46,259	1.6	40,226	87.0	0	0.0	6,132	13.3
		FFS	36,651	1.3	36,651	100.0	0	0.0	0	0.0
		MC	10,965	0.4	4,838	44.1	0	0.0	6,132	55.9
Minnesota	1,321,086	Total	25,453	1.9	22,951	90.2	1,339	5.3	1,201	4.7
		FFS	23,315	1.8	21,605	92.7	1,338	5.7	408	1.7
		MC	3,599	0.3	2,795	77.7	< 11	< 0.3	> 794	> 22.1
Mississippi	785,272	Total	23,663	3.0	17,823	75.3	2,258	9.5	3,616	15.3
		FFS	20,912	2.7	17,823	85.2	2,258	10.8	857	4.1
		MC	3,033	0.4	0	0.0	0	0.0	3,033	100.0
Missouri	1,158,719	Total	36,663	3.2	36,580	99.8	86	0.2	0	0.0
		FFS	36,663	3.2	36,580	99.8	86	0.2	0	0.0
		MC	0	0.0	0	0.0	0	0.0	0	0.0
Montana	303,294	Total	4,972	1.6	4,402	88.5	< 11	< 0.2	> 564	> 11.3
		FFS	4,972	1.6	4,402	88.5	< 11	< 0.2	> 564	> 11.3
		MC	0	0.0	0	0.0	0	0.0	0	0.0
Nebraska	279,341	Total	10,282	3.7	9,911	96.4	378	3.7	0	0.0
		FFS	9,728	3.5	9,355	96.2	378	3.9	0	0.0
		MC	1,527	0.5	1,527	100.0	0	0.0	0	0.0
Nevada	828,167	Total	7,285	0.9	7,193	98.7	> 81	> 1.1	< 11	< 0.2
		FFS	5,556	0.7	5,464	98.3	> 81	> 1.5	< 11	< 0.2
		MC	2,009	0.2	2,009	100.0	0	0.0	0	0.0
New Hampshire	234,097	Total	6,516	2.8	> 87	> 1.3	6,134	94.1	< 342	< 5.2
		FFS	6,213	2.7	46	0.7	6,134	98.7	46	0.7
		MC	444	0.2	52	11.7	119	26.8	287	64.6
New Jersey	1,887,428	Total	49,516	2.6	46,549	94.0	1,352	2.7	1,638	3.3
		FFS	18,271	1.0	15,297	83.7	1,352	7.4	1,638	9.0
		MC	36,648	1.9	36,648	100.0	0	0.0	0	0.0

Table 2 (continued)

State	Total Medicaid beneficiaries ^a	Delivery system ^b	Any institutional LTSS ^c		Nursing facility services		ICF/IID services		Mental health facility services ^d	
			Users	% of Medicaid beneficiaries	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users
New Mexico	925,216	Total	9,197	1.0	6,864	74.6	282	3.1	2,083	22.6
		FFS	489	0.1	48	9.8	282	57.7	162	33.1
		MC	8,715	0.9	6,823	78.3	0	0.0	1,921	22.0
New York	7,107,910	Total	153,276	2.2	136,277	88.9	5,112	3.3	12,654	8.3
		FFS	97,058	1.4	81,646	84.1	4,494	4.6	11,294	11.6
		MC	68,201	1.0	63,324	92.8	618	0.9	4,481	6.6
North Carolina	2,385,363	Total	45,434	1.9	36,795	81.0	3,957	8.7	4,810	10.6
		FFS	36,827	1.5	36,795	99.9	21	0.1	11	0.0
		MC	8,714	0.4	0	0.0	3,942	45.2	4,799	55.1
North Dakota	118,051	Total	5,086	4.3	4,529	89.0	548	10.8	27	0.5
		FFS	5,040	4.3	4,483	88.9	548	10.9	27	0.5
		MC	47	0.0	47	100.0	0	0.0	0	0.0
Ohio	3,084,854	Total	93,393	3.0	85,278	91.3	5,779	6.2	2,874	3.1
		FFS	51,549	1.7	45,844	88.9	5,779	11.2	104	0.2
		MC	49,773	1.6	47,340	95.1	0	0.0	2,778	5.6
Oklahoma	891,717	Total	24,593	2.8	18,457	75.0	1,569	6.4	4,769	19.4
		FFS	24,593	2.8	18,457	75.0	1,569	6.4	4,769	19.4
		MC	0	0.0	0	0.0	0	0.0	0	0.0
Oregon	1,187,178	Total	8,375	0.7	8,375	100.0	0	0.0	0	0.0
		FFS	6,398	0.5	6,398	100.0	0	0.0	0	0.0
		MC	2,584	0.2	2,584	100.0	0	0.0	0	0.0
Pennsylvania	3,262,105	Total	94,994	2.9	82,352	86.7	2,701	2.8	9,986	10.5
		FFS	55,484	1.7	52,113	93.9	2,642	4.8	765	1.4
		MC	49,077	1.5	39,644	80.8	59	0.1	9,379	19.1
Rhode Island*	270,342	Total	8,028	3.0	7,983	99.4	37	0.5	17	0.2
		FFS	6,677	2.5	6,632	99.3	37	0.6	17	0.3
		MC	1,600	0.6	1,600	100.0	0	0.0	0	0.0
South Carolina	1,371,869	Total	17,884	1.3	14,997	83.9	1,197	6.7	1,702	9.5
		FFS	17,884	1.3	14,997	83.9	1,197	6.7	1,702	9.5
		MC	0	0.0	0	0.0	0	0.0	0	0.0
South Dakota	134,352	Total	4,933	3.7	3,477	70.5	1,443	29.3	264	5.4
		FFS	4,933	3.7	3,477	70.5	1,443	29.3	264	5.4
		MC	0	0.0	0	0.0	0	0.0	0	0.0

Table 2 (continued)

State	Total Medicaid beneficiaries ^a	Delivery system ^b	Any institutional LTSS ^c		Nursing facility services		ICF/IID services		Mental health facility services ^d	
			Users	% of Medicaid beneficiaries	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users	Users	% of total institutional LTSS users
Tennessee	1,706,141	Total	22,879	1.3	21,940	95.9	2,119	9.3	0	0.0
		FFS	913	0.1	14	1.5	913	100.0	0	0.0
		MC	21,971	1.3	21,926	99.8	1,207	5.5	0	0.0
Texas	5,269,586	Total	116,789	2.2	91,511	78.4	8,251	7.1	17,286	14.8
		FFS	42,645	0.8	33,591	78.8	8,251	19.3	896	2.1
		MC	95,679	1.8	79,149	82.7	0	0.0	16,636	17.4
Utah	401,797	Total	6,293	1.6	5,489	87.2	815	13.0	0	0.0
		FFS	6,293	1.6	5,489	87.2	815	13.0	0	0.0
		MC	0	0.0	0	0.0	0	0.0	0	0.0
Vermont	190,932	Total	2,796	1.5	> 2,785	> 99.6	< 11	< 0.4	0	0.0
		FFS	2,796	1.5	> 2,785	> 99.6	< 11	< 0.4	0	0.0
		MC	0	0.0	0	0.0	0	0.0	0	0.0
Virginia	1,632,968	Total	31,256	1.9	28,738	91.9	1,019	3.3	1,795	5.7
		FFS	11,324	0.7	10,213	90.2	753	6.6	417	3.7
		MC	27,322	1.7	25,823	94.5	289	1.1	1,383	5.1
Washington	2,083,782	Total	24,784	1.2	19,574	79.0	16	0.1	5,218	21.1
		FFS	19,805	1.0	18,892	95.4	13	0.1	902	4.6
		MC	5,979	0.3	> 1,549	> 25.9	< 11	< 0.2	4,429	74.1
West Virginia	620,370	Total	13,571	2.2	11,561	85.2	562	4.1	1,468	10.8
		FFS	13,057	2.1	11,561	88.5	562	4.3	954	7.3
		MC	542	0.1	0	0.0	0	0.0	542	100.0
Wisconsin	1,311,923	Total	21,636	1.6	21,189	97.9	> 481	> 2.2	< 11	< 0.1
		FFS	12,555	1.0	12,071	96.1	485	3.9	0	0.0
		MC	10,139	0.8	> 10,128	> 99.9	0	0.0	< 11	< 0.1
Wyoming	76,979	Total	2,504	3.3	2,214	88.4	56	2.2	234	9.3
		FFS	2,504	3.3	2,214	88.4	56	2.2	234	9.3
		MC	0	0.0	0	0.0	0	0.0	0	0.0

Source: Mathematica’s analysis of the 2019 LT and DE TAFs.

Notes: This table shows the number of Medicaid beneficiaries who received any institutional services in 2019. The number of users across institutional settings does not sum to 100 percent because some beneficiaries received more than one type of institutional service during the year. Certain cells have been replaced with ranges of plausible values or suppressed based on small cell sizes (1 to 10) (CMS 2020[a]). Data has also been replaced with ranges of plausible values or suppressed in cases where it would have been possible to derive the small cell values.

Table 2 (continued)

Gray shading and an asterisk identify states with potential data quality issues. CMS's assessment of the 2019 TAF data quality found some states with TAF data elements that are unusable or of high concern (CMS 2021[d]). A key state-specific data quality issue that might have impacted the accuracy of the user counts in this table: Rhode Island's LT TAF is of high concern because it has an unusually low number of line records per header claim.

^a Medicaid beneficiaries include individuals with at least one month of Medicaid enrollment with any scope of benefits (full, comprehensive, or limited) in 2019 (CMS 2020[b]).

^b Delivery system is defined as either FFS or MC. The "total" row includes beneficiaries who had at least one FFS or MC claim. The "FFS" row represents beneficiaries who had at least one FFS claim. The "MC" row represents beneficiaries who had at least one MC claim. The FFS and MC rows do not sum to the total because some beneficiaries had both FFS and MC claims during the year.

^c This is an unduplicated count of Medicaid beneficiaries who received any institutional service in 2019.

^d Mental health facilities include institutions for mental diseases for people ages 65 and older and inpatient psychiatric facilities for people younger than age 21.

CHIP = Children's Health Insurance Program; DE = Demographic and Enrollment; FFS = fee-for-service; ICF/IID = Intermediate Care Facility for Individuals with Intellectual Disabilities; LT = Long-term Care; LTSS = long-term services and supports; MC = managed care; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

Table 3a. Medicaid beneficiaries who used program-based HCBS by delivery system for LTSS expenditures reports categories, 2019

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		Health Homes programs ^d		MFP		PACE ^e	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
United States ^f	Total	7,475,171	8.8	1,583,610	21.2	25,468	0.3	218,175	2.9	62,207	0.8	569,473	7.6	5,251	0.1	62,602	0.8
	FFS	3,347,445	3.9	1,231,938	36.8	16,506	0.5	171,477	5.1	40,442	1.2	–	–	4,425	0.1	–	–
	MC	4,476,231	5.3	401,747	9.0	8,964	0.2	47,436	1.1	21,835	0.5	–	–	1,143	0.0	62,602	1.4
Alabama ^g	Total	545,992	47.6	29,083	5.3	0	0.0	0	0.0	0	0.0	524,924	96.1	103	0.0	200	0.0
	FFS	77,672	6.8	29,083	37.4	0	0.0	0	0.0	0	0.0	–	–	103	0.1	–	–
	MC	200	0.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	200	100.0
Alaska	Total	15,890	6.4	4,718	29.7	0	0.0	0	0.0	3,223	20.3	0	0.0	0	0.0	0	0.0
	FFS	15,890	6.4	4,718	29.7	0	0.0	0	0.0	3,223	20.3	–	–	0	0.0	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0
Arizona	Total	134,166	6.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	13,630	0.6	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	–	–
	MC	126,377	5.8	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0
Arkansas	Total	33,330	3.2	14,813	44.4	0	0.0	4,009	12.0	0	0.0	0	0.0	84	0.3	379	1.1
	FFS	31,773	3.1	14,449	45.5	0	0.0	4,009	12.6	0	0.0	–	–	84	0.3	–	–
	MC	6,332	0.6	3,416	53.9	0	0.0	0	0.0	0	0.0	–	–	0	0.0	379	6.0
California	Total	323,442	2.1	198,332	61.3	0	0.0	0	0.0	0	0.0	0	0.0	377	0.1	11,309	3.5
	FFS	284,584	1.9	189,810	66.7	0	0.0	0	0.0	0	0.0	–	–	219	0.1	–	–
	MC	49,155	0.3	8,861	18.0	0	0.0	0	0.0	0	0.0	–	–	274	0.6	11,309	23.0
Colorado	Total	91,890	6.2	49,716	54.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	5,431	5.9
	FFS	85,529	5.8	49,549	57.9	0	0.0	0	0.0	0	0.0	–	–	0	0.0	–	–
	MC	9,624	0.7	3,040	31.6	0	0.0	0	0.0	0	0.0	–	–	0	0.0	5,431	56.4
Connecticut	Total	67,116	6.1	28,945	43.1	510	0.8	0	0.0	5,875	8.8	0	0.0	910	1.4	0	0.0
	FFS	67,116	6.1	28,945	43.1	510	0.8	0	0.0	5,875	8.8	–	–	910	1.4	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0
Delaware	Total	18,349	6.4	8,710	47.5	> 385	> 2.1	< 11	< 0.1	0	0.0	0	0.0	0	0.0	307	1.7
	FFS	7,933	2.8	3,158	39.8	> 385	> 4.9	< 11	< 0.1	0	0.0	–	–	0	0.0	–	–
	MC	11,383	4.0	5,805	51.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	307	2.7
District of Columbia	Total	57,203	20.8	5,923	10.4	0	0.0	0	0.0	0	0.0	49,663	86.8	27	0.0	0	0.0
	FFS	11,607	4.2	5,764	49.7	0	0.0	0	0.0	0	0.0	–	–	27	0.2	–	–
	MC	1,242	0.5	159	12.8	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0

Table 3a (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		Health Homes programs ^d		MFP		PACE ^e	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Florida	Total	182,832	3.7	60,842	33.3	3,817	2.1	27,204	14.9	22,667	12.4	0	0.0	0	0.0	2,657	1.5
	FFS	65,211	1.3	35,295	54.1	0	0.0	155	0.2	902	1.4	-	-	0	0.0	-	-
	MC	122,434	2.5	25,558	20.9	3,817	3.1	27,050	22.1	21,835	17.8	-	-	0	0.0	2,657	2.2
Georgia	Total	242,335	10.2	54,981	22.7	0	0.0	0	0.0	0	0.0	0	0.0	390	0.2	0	0.0
	FFS	95,898	4.0	46,861	48.9	0	0.0	0	0.0	0	0.0	-	-	390	0.4	-	-
	MC	150,435	6.3	8,126	5.4	0	0.0	0	0.0	0	0.0	-	-	0	0.0	0	0.0
Hawaii	Total	27,098	7.2	360	1.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	5,078	1.3	> 121	> 2.4	0	0.0	0	0.0	0	0.0	-	-	0	0.0	-	-
	MC	22,977	6.1	245	1.1	0	0.0	0	0.0	0	0.0	-	-	0	0.0	0	0.0
Idaho ^{*h}	Total	32,126	9.9	0	0.0	9,226	28.7	13,116	40.8	0	0.0	0	0.0	112	0.3	0	0.0
	FFS	22,253	6.9	0	0.0	9,226	41.5	13,116	58.9	0	0.0	-	-	112	0.5	-	-
	MC	15,316	4.7	0	0.0	0	0.0	0	0.0	0	0.0	-	-	0	0.0	0	0.0
Illinois	Total	317,429	9.8	115,258	36.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	156,774	4.8	88,547	56.5	0	0.0	0	0.0	0	0.0	-	-	0	0.0	-	-
	MC	190,253	5.9	42,998	22.6	0	0.0	0	0.0	0	0.0	-	-	0	0.0	0	0.0
Indiana	Total	66,746	3.9	57,257	85.8	3,816	5.7	5,120	7.7	0	0.0	0	0.0	287	0.4	552	0.8
	FFS	62,632	3.6	57,256	91.4	3,816	6.1	5,120	8.2	0	0.0	-	-	282	0.5	-	-
	MC	4,627	0.3	< 11	< 0.2	0	0.0	0	0.0	0	0.0	-	-	> 68	> 1.5	552	11.9
Iowa	Total	63,447	8.4	26,280	41.4	0	0.0	0	0.0	0	0.0	652	1.0	0	0.0	685	1.1
	FFS	4,654	0.6	1,493	32.1	0	0.0	0	0.0	0	0.0	-	-	0	0.0	-	-
	MC	60,130	7.9	24,966	41.5	0	0.0	0	0.0	0	0.0	-	-	0	0.0	685	1.1
Kansas	Total	57,267	12.8	26,152	45.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	789	1.4
	FFS	6,073	1.4	< 11	< 0.2	0	0.0	0	0.0	0	0.0	-	-	0	0.0	-	-
	MC	51,881	11.6	26,152	50.4	0	0.0	0	0.0	0	0.0	-	-	0	0.0	789	1.5
Kentucky ^{*i}	Total	1,574,036	100.0	27,647	1.8	0	0.0	0	0.0	0	0.0	1,574,036	100.0	0	0.0	0	0.0
	FFS	26,358	1.7	25,962	98.5	0	0.0	0	0.0	0	0.0	-	-	0	0.0	-	-
	MC	12,708	0.8	1,710	13.5	0	0.0	0	0.0	0	0.0	-	-	0	0.0	0	0.0
Louisiana	Total	65,244	3.6	19,053	29.2	0	0.0	0	0.0	0	0.0	0	0.0	371	0.6	602	0.9
	FFS	44,043	2.4	19,053	43.3	0	0.0	0	0.0	0	0.0	-	-	371	0.8	-	-
	MC	22,866	1.3	0	0.0	0	0.0	0	0.0	0	0.0	-	-	0	0.0	602	2.6

Table 3a (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		Health Homes programs ^d		MFP		PACE ^e			
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Maine	Total	17,358	5.0	8,502	49.0	0	0.0	0	0.0	0	0.0	0	0.0	25	0.1	0	0.0		
	FFS	17,358	5.0	8,502	49.0	0	0.0	0	0.0	0	0.0	–	–	25	0.1	–	–		
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0		
Maryland	Total	186,074	12.6	35,557	19.1	< 11	< 0.0	0	0.0	18,551	10.0	11,173	6.0	> 469	> 0.3	184	0.1		
	FFS	98,902	6.7	26,390	26.7	< 11	< 0.0	0	0.0	18,551	18.8	–	–	> 469	> 0.5	–	–		
	MC	90,589	6.1	9,207	10.2	0	0.0	0	0.0	0	0.0	–	–	0	0.0	184	0.2		
Massachusetts*	Total	156,804	7.8	31,787	20.3	0	0.0	10,973	7.0	0	0.0	0	0.0	0	0.0	5,772	3.7		
	FFS	98,830	4.9	30,736	31.1	0	0.0	282	0.3	0	0.0	–	–	0	0.0	–	–		
	MC	68,530	3.4	1,154	1.7	0	0.0	10,692	15.6	0	0.0	–	–	0	0.0	5,772	8.4		
Michigan	Total	317,933	11.0	8,184	2.6	0	0.0	0	0.0	0	0.0	3,834	1.2	0	0.0	4,026	1.3		
	FFS	27,695	1.0	555	2.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	–	–		
	MC	295,508	10.2	7,736	2.6	0	0.0	0	0.0	0	0.0	–	–	0	0.0	4,026	1.4		
Minnesota*	Total	157,502	11.9	62,890	39.9	0	0.0	0	0.0	0	0.0	0	0.0	167	0.1	0	0.0		
	FFS	104,074	7.9	62,890	60.4	0	0.0	0	0.0	0	0.0	–	–	146	0.1	–	–		
	MC	71,949	5.4	0	0.0	0	0.0	0	0.0	0	0.0	–	–	27	0.0	0	0.0		
Mississippi	Total	48,153	6.1	26,784	55.6	0	0.0	> 527	> 1.1	0	0.0	0	0.0	57	0.1	0	0.0		
	FFS	34,668	4.4	26,784	77.3	0	0.0	548	1.6	0	0.0	–	–	57	0.2	–	–		
	MC	14,918	1.9	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0		
Missouri	Total	140,660	12.1	22,483	16.0	0	0.0	0	0.0	0	0.0	67,894	48.3	0	0.0	0	0.0		
	FFS	92,332	8.0	22,483	24.4	0	0.0	0	0.0	0	0.0	–	–	0	0.0	–	–		
	MC	151	0.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0		
Montana	Total	14,780	4.9	5,391	36.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
	FFS	14,780	4.9	5,391	36.5	0	0.0	0	0.0	0	0.0	–	–	0	0.0	–	–		
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0		
Nebraska	Total	15,693	5.6	11,428	72.8	0	0.0	0	0.0	0	0.0	0	0.0	34	0.2	250	1.6		
	FFS	9,328	3.3	9,055	97.1	0	0.0	0	0.0	0	0.0	–	–	16	0.2	–	–		
	MC	15,052	5.4	10,865	72.2	0	0.0	0	0.0	0	0.0	–	–	34	0.2	250	1.7		
Nevada	Total	53,391	6.4	6,363	11.9	> 137	> 0.3	11,679	21.9	0	0.0	0	0.0	< 11	< 0.0	0	0.0		
	FFS	49,737	6.0	6,361	12.8	> 76	> 0.2	11,074	22.3	0	0.0	–	–	< 11	< 0.0	–	–		
	MC	5,659	0.7	1,666	29.4	55	1.0	689	12.2	0	0.0	–	–	0	0.0	0	0.0		

Table 3a (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		Health Homes programs ^d		MFP		PACE ^e	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
New Hampshire	Total	20,302	8.7	10,092	49.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	10,757	4.6	10,092	93.8	0	0.0	0	0.0	0	0.0	-	-	0	0.0	-	-
	MC	12,291	5.3	0	0.0	0	0.0	0	0.0	0	0.0	-	-	0	0.0	0	0.0
New Jersey	Total	181,820	9.6	12,979	7.1	0	0.0	0	0.0	0	0.0	0	0.0	72	0.0	1,443	0.8
	FFS	119,970	6.4	12,979	10.8	0	0.0	0	0.0	0	0.0	-	-	72	0.1	-	-
	MC	66,298	3.5	0	0.0	0	0.0	0	0.0	0	0.0	-	-	0	0.0	1,443	2.2
New Mexico	Total	88,917	9.6	5,078	5.7	0	0.0	1,778	2.0	0	0.0	4,778	5.4	0	0.0	0	0.0
	FFS	7,494	0.8	5,078	67.8	0	0.0	1,778	23.7	0	0.0	-	-	0	0.0	-	-
	MC	79,708	8.6	0	0.0	0	0.0	0	0.0	0	0.0	-	-	0	0.0	0	0.0
New York	Total	933,461	13.1	100,459	10.8	0	0.0	17,028	1.8	0	0.0	382,827	41.0	867	0.1	6,927	0.7
	FFS	338,362	4.8	100,459	29.7	0	0.0	17,028	5.0	0	0.0	-	-	363	0.1	-	-
	MC	637,134	9.0	0	0.0	0	0.0	0	0.0	0	0.0	-	-	569	0.1	6,927	1.1
North Carolina	Total	121,656	5.1	12,903	10.6	0	0.0	0	0.0	0	0.0	0	0.0	218	0.2	2,847	2.3
	FFS	109,211	4.6	0	0.0	0	0.0	0	0.0	0	0.0	-	-	125	0.1	-	-
	MC	17,180	0.7	12,903	75.1	0	0.0	0	0.0	0	0.0	-	-	93	0.5	2,847	16.6
North Dakota	Total	13,020	11.0	6,186	47.5	0	0.0	0	0.0	0	0.0	0	0.0	26	0.2	226	1.7
	FFS	11,976	10.1	6,186	51.7	0	0.0	0	0.0	0	0.0	-	-	26	0.2	-	-
	MC	1,084	0.9	0	0.0	0	0.0	0	0.0	0	0.0	-	-	0	0.0	226	20.8
Ohio	Total	543,229	17.6	109,857	20.2	5,092	0.9	45,638	8.4	0	0.0	0	0.0	0	0.0	670	0.1
	FFS	137,225	4.4	75,914	55.3	0	0.0	45,638	33.3	0	0.0	-	-	0	0.0	-	-
	MC	436,060	14.1	37,059	8.5	5,092	1.2	0	0.0	0	0.0	-	-	0	0.0	670	0.2
Oklahoma	Total	56,074	6.3	25,384	45.3	0	0.0	16,681	29.7	0	0.0	17,241	30.7	0	0.0	707	1.3
	FFS	38,794	4.4	25,384	65.4	0	0.0	16,681	43.0	0	0.0	-	-	0	0.0	-	-
	MC	707	0.1	0	0.0	0	0.0	0	0.0	0	0.0	-	-	0	0.0	707	100.0
Oregon	Total	270,425	22.8	34,360	12.7	1,978	0.7	0	0.0	6,507	2.4	0	0.0	0	0.0	1,906	0.7
	FFS	84,438	7.1	34,359	40.7	1,978	2.3	0	0.0	6,507	7.7	-	-	0	0.0	-	-
	MC	229,356	19.3	< 11	< 0.0	0	0.0	0	0.0	0	0.0	-	-	0	0.0	1,906	0.8
Pennsylvania	Total	685,498	21.0	130,191	19.0	0	0.0	4,879	0.7	0	0.0	0	0.0	285	0.0	8,608	1.3
	FFS	130,232	4.0	62,575	48.0	0	0.0	272	0.2	0	0.0	-	-	285	0.2	-	-
	MC	588,374	18.0	67,830	11.5	0	0.0	4,607	0.8	0	0.0	-	-	0	0.0	8,608	1.5

Table 3a (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		Health Homes programs ^d		MFP		PACE ^e	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Rhode Island*	Total	28,956	10.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	81	0.3	324	1.1
	FFS	8,754	3.2	0	0.0	0	0.0	0	0.0	0	0.0	–	–	54	0.6	–	–
	MC	21,045	7.8	0	0.0	0	0.0	0	0.0	0	0.0	–	–	65	0.3	324	1.5
South Carolina	Total	116,899	8.5	40,104	34.3	0	0.0	0	0.0	0	0.0	0	0.0	55	0.0	536	0.5
	FFS	65,300	4.8	40,104	61.4	0	0.0	0	0.0	0	0.0	–	–	55	0.1	–	–
	MC	56,895	4.1	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	536	0.9
South Dakota	Total	13,847	10.3	6,643	48.0	281	2.0	0	0.0	0	0.0	7,634	55.1	31	0.2	0	0.0
	FFS	7,343	5.5	6,643	90.5	281	3.8	0	0.0	0	0.0	–	–	31	0.4	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0
Tennessee	Total	101,038	5.9	5,215	5.2	0	0.0	877	0.9	0	0.0	0	0.0	17	0.0	420	0.4
	FFS	48,316	2.8	5,215	10.8	0	0.0	877	1.8	0	0.0	–	–	17	0.0	–	–
	MC	55,406	3.2	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	420	0.8
Texas	Total	777,987	14.8	40,706	5.2	0	0.0	5,451	0.7	5,384	0.7	0	0.0	189	0.0	1,372	0.2
	FFS	382,055	7.3	40,706	10.7	0	0.0	5,451	1.4	5,384	1.4	–	–	189	0.0	–	–
	MC	532,161	10.1	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	1,372	0.3
Utah	Total	66,440	16.5	10,721	16.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	10,743	2.7	8,844	82.3	0	0.0	0	0.0	0	0.0	–	–	0	0.0	–	–
	MC	58,540	14.6	2,923	5.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0
Vermont* ^j	Total	120,960	63.4	8,164	6.7	0	0.0	0	0.0	0	0.0	112,428	92.9	0	0.0	0	0.0
	FFS	13,820	7.2	8,164	59.1	0	0.0	0	0.0	0	0.0	–	–	0	0.0	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	0	0.0
Virginia	Total	102,017	6.2	55,457	54.4	0	0.0	0	0.0	0	0.0	0	0.0	< 11	< 0.0	1,829	1.8
	FFS	31,961	2.0	29,882	93.5	0	0.0	0	0.0	0	0.0	–	–	< 11	< 0.0	–	–
	MC	83,800	5.1	37,642	44.9	0	0.0	0	0.0	0	0.0	–	–	0	0.0	1,829	2.2
Washington	Total	125,323	6.0	14	0.0	0	0.0	0	0.0	0	0.0	22,717	18.1	0	0.0	1,039	0.8
	FFS	90,596	4.3	< 11	< 0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	–	–
	MC	29,921	1.4	13	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	1,039	3.5
West Virginia	Total	81,029	13.1	11,072	13.7	0	0.0	6,074	7.5	0	0.0	1,060	1.3	86	0.1	0	0.0
	FFS	40,684	6.6	11,071	27.2	0	0.0	6,074	14.9	0	0.0	–	–	86	0.2	–	–
	MC	46,797	7.5	< 11	< 0.0	0	0.0	0	0.0	0	0.0	–	–	< 11	< 0.0	0	0.0

Table 3a (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		Health Homes programs ^d		MFP		PACE ^e	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Wisconsin	Total	218,276	16.6	73,941	33.9	209	0.1	44,608	20.4	0	0.0	0	0.0	0	0.0	646	0.3
	FFS	120,302	9.2	10,724	8.9	209	0.2	40,862	34.0	0	0.0	–	–	0	0.0	–	–
	MC	115,927	8.8	63,420	54.7	0	0.0	4,398	3.8	0	0.0	–	–	0	0.0	646	0.6
Wyoming	Total	24,699	32.1	1,539	6.2	0	0.0	2,505	10.1	0	0.0	0	0.0	0	0.0	159	0.6
	FFS	24,550	31.9	1,539	6.3	0	0.0	2,505	10.2	0	0.0	–	–	0	0.0	–	–
	MC	159	0.2	0	0.0	0	0.0	0	0.0	0	0.0	–	–	0	0.0	159	100.0

Source: Mathematica’s analysis of the 2019 OT and DE TAFs.

Note: This table shows the number of Medicaid beneficiaries who received any program-based or state plan HCBS and the number who received program-based HCBS (by category) in 2019. The HCBS categories were defined based on service categories in the LTSS expenditures reports (Table 1). For all programs except Health Homes and PACE, we present the number of users identified in the OT claims file. For Health Homes programs and PACE, we present the number of enrollees identified in the DE file because we did not identify any beneficiaries with claims for these two programs in the OT file. The number of users across all HCBS categories in Tables 3a and 4a does not sum to 100 percent because some beneficiaries received more than one type of HCBS during the year. Certain cells have been replaced with ranges of plausible values or suppressed based on small cell sizes (1 to 10) (CMS 2020[a]). Data has also been replaced with ranges of plausible values or suppressed in cases where it would have been possible to derive the small cell values.

Gray shading and an asterisk identify states with potential data quality issues. CMS’s assessment of the 2019 TAF data quality found some states with TAF data elements that are unusable or of high concern (CMS 2021[d]). Key state-specific data quality issues that might have impacted the accuracy of the user counts presented in this table: (1) Massachusetts, New Jersey, and Rhode Island’s OT files are of high concern because they have unusually high volumes of header claims compared with other states; and (2) Minnesota’s OT file is of high concern because it has an unusually high volume of non-denied line claims compared with other states. Additional potential issues specific to service categories are listed in the footnotes below.

^a This is an unduplicated count of Medicaid beneficiaries who received any HCBS (either program-based or state plan benefits, presented in Tables 3a and 4a) in 2019.

^b Delivery system is defined as either FFS or MC. The “total” row includes beneficiaries who had at least one FFS or MC claim. The “FFS” row represents beneficiaries who had at least one FFS claim. The “MC” row represents beneficiaries who had at least one MC claim. The FFS and MC rows do not sum to the total because some beneficiaries had both FFS and MC claims during the year.

^c The number of total Medicaid beneficiaries is shown in Table 2.

^d We did not break out Health Home program by FFS and MC because we identified Health Homes program users in the DE file (based on at least one month of enrollment) instead of in the OT file (based on at least one claim). Thus, it was not feasible to identify service users by FFS and MC delivery systems with the approach we used for stratifying other categories. The FFS and MC rows for this program are indicated by a dash (–).

^e Because PACE is a capitated program, PACE enrollees are considered as managed care users. The FFS rows for this program are indicated by a dash (–).

^f The U.S. counts exclude Alabama, Kentucky, and Vermont because these states had reporting errors for the Health Homes program. We calculated the percentage of Medicaid beneficiaries who received any HCBS using 85,120,402 Medicaid beneficiaries, instead of 88,031,869 beneficiaries shown in Table 2. Including the 3 states

Table 3a (*continued*)

results in 9,716,159 total HCBS users (3,465,295 beneficiaries who received HCBS via FFS delivery and 4,489,139 beneficiaries who received HCBS via MC delivery); 1,648,504 users of section 1915(c) waiver program services; 2,780,861 enrollees in the Health Homes program; 5,354 enrollees in the MFP demonstration; and 62,802 enrollees in the PACE program. The number of beneficiaries in section 1915(i) HCBS state plan option, section 1915(j) self-directed PAS option, and section 1915(k) Community First Choice option do not change.

^g Alabama reported nearly half of its Medicaid beneficiaries (45.8 percent) as Health Homes program enrollees in the DE file.

^h Idaho reported section 1915(c) waiver program participants more accurately in the DE file. Although, Idaho operated a section 1915(c) waiver program in 2019, we did not identify any beneficiaries with claims covered by the waiver program in the OT file. In the DE file, we identified 23,397 waiver program participants.

ⁱ Kentucky reported all of its Medicaid beneficiaries as Health Homes program enrollees in the DE file.

^j Vermont reported section 1915(c) waiver program participants more accurately in the DE file. Although Vermont did not operation a section 1915(c) waiver program in 2019, we identified 8,164 beneficiaries with claims covered by a section 1915(c) waiver program and did not identify any waiver program participants in the DE file. Vermont also reported more than half of its Medicaid beneficiaries (58.9 percent) as Health Homes program enrollees in the DE file.

CHIP = Children's Health Insurance Program; DE = Demographic and Enrollment; FFS = fee-for-service; HCBS = home and community-based services; MACBIS = Medicaid and CHIP Business Information Solution; MC = managed care; MFP = Money Follows the Person; OT = Other Services; PACE = Program of All-Inclusive Care for the Elderly; PAS = personal assistant services; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

Table 3b. Medicaid beneficiaries who used program-based HCBS by delivery system for ARP categories, 2019

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		PACE ^d	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
United States ^e	Total	7,444,832	8.5	1,648,504	22.1	25,468	0.3	218,175	2.9	62,207	0.8	62,802	0.8
	FFS	3,490,646	4.0	1,295,147	37.1	16,506	0.5	171,477	4.9	40,442	1.2	–	–
	MC	4,484,793	5.1	403,457	9.0	8,964	0.2	47,436	1.1	21,835	0.5	62,802	1.4
Alabama	Total	77,778	6.8	29,083	37.4	0	0.0	0	0.0	0	0.0	200	0.3
	FFS	77,584	6.8	29,083	37.5	0	0.0	0	0.0	0	0.0	–	–
	MC	200	0.0	0	0.0	0	0.0	0	0.0	0	0.0	200	100.0
Alaska	Total	18,105	7.3	4,718	26.1	0	0.0	0	0.0	3,223	17.8	0	0.0
	FFS	18,105	7.3	4,718	26.1	0	0.0	0	0.0	3,223	17.8	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Arizona	Total	138,555	6.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	20,678	0.9	0	0.0	0	0.0	0	0.0	0	0.0	–	–
	MC	126,363	5.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Arkansas	Total	33,311	3.2	14,813	44.5	0	0.0	4,009	12.0	0	0.0	379	1.1
	FFS	31,744	3.1	14,449	45.5	0	0.0	4,009	12.6	0	0.0	–	–
	MC	6,332	0.6	3,416	53.9	0	0.0	0	0.0	0	0.0	379	6.0
California	Total	323,390	2.1	198,332	61.3	0	0.0	0	0.0	0	0.0	11,309	3.5
	FFS	284,570	1.9	189,810	66.7	0	0.0	0	0.0	0	0.0	–	–
	MC	48,886	0.3	8,861	18.1	0	0.0	0	0.0	0	0.0	11,309	23.1
Colorado	Total	91,899	6.2	49,716	54.1	0	0.0	0	0.0	0	0.0	5,431	5.9
	FFS	85,538	5.8	49,549	57.9	0	0.0	0	0.0	0	0.0	–	–
	MC	9,624	0.7	3,040	31.6	0	0.0	0	0.0	0	0.0	5,431	56.4
Connecticut	Total	66,796	6.1	28,945	43.3	510	0.8	0	0.0	5,875	8.8	0	0.0
	FFS	66,796	6.1	28,945	43.3	510	0.8	0	0.0	5,875	8.8	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Delaware	Total	18,236	6.4	8,710	47.8	> 385	> 2.1	< 11	< 0.1	0	0.0	307	1.7
	FFS	8,107	2.8	3,158	39.0	> 385	> 4.7	< 11	< 0.1	0	0.0	–	–
	MC	11,077	3.9	5,805	52.4	0	0.0	0	0.0	0	0.0	307	2.8

Table 3b (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		PACE ^d	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
District of Columbia	Total	12,819	4.7	5,923	46.2	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	11,604	4.2	5,764	49.7	0	0.0	0	0.0	0	0.0	–	–
	MC	1,250	0.5	159	12.7	0	0.0	0	0.0	0	0.0	0	0.0
Florida	Total	182,827	3.7	60,842	33.3	3,817	2.1	27,204	14.9	22,667	12.4	2,657	1.5
	FFS	65,211	1.3	35,295	54.1	0	0.0	> 146	> 0.2	902	1.4	–	–
	MC	122,429	2.5	25,558	20.9	3,817	3.1	27,050	22.1	21,835	17.8	2,657	2.2
Georgia	Total	242,122	10.2	54,981	22.7	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	95,768	4.0	46,861	48.9	0	0.0	0	0.0	0	0.0	–	–
	MC	150,352	6.3	8,126	5.4	0	0.0	0	0.0	0	0.0	0	0.0
Hawaii	Total	27,073	7.2	< 371	< 1.4	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	5,078	1.3	131	2.6	0	0.0	0	0.0	0	0.0	–	–
	MC	22,951	6.1	245	1.1	0	0.0	0	0.0	0	0.0	0	0.0
Idaho* ^f	Total	32,089	9.9	0	0.0	9,226	28.8	13,116	40.9	0	0.0	0	0.0
	FFS	22,206	6.8	0	0.0	9,226	41.5	13,116	59.1	0	0.0	–	–
	MC	15,316	4.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Illinois	Total	317,122	9.8	115,258	36.3	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	156,936	4.8	88,547	56.4	0	0.0	0	0.0	0	0.0	–	–
	MC	189,869	5.8	42,998	22.6	0	0.0	0	0.0	0	0.0	0	0.0
Indiana	Total	66,614	3.9	57,257	86.0	3,816	5.7	5,120	7.7	0	0.0	552	0.8
	FFS	62,505	3.6	57,256	91.6	3,816	6.1	5,120	8.2	0	0.0	–	–
	MC	4,549	0.3	< 11	< 0.2	0	0.0	0	0.0	0	0.0	552	12.1
Iowa	Total	62,982	8.3	26,280	41.7	0	0.0	0	0.0	0	0.0	685	1.1
	FFS	4,657	0.6	1,493	32.1	0	0.0	0	0.0	0	0.0	–	–
	MC	60,072	7.9	24,966	41.6	0	0.0	0	0.0	0	0.0	685	1.1
Kansas	Total	57,050	12.8	26,152	45.8	0	0.0	0	0.0	0	0.0	789	1.4
	FFS	6,073	1.4	< 11	< 0.2	0	0.0	0	0.0	0	0.0	–	–
	MC	51,663	11.6	26,152	50.6	0	0.0	0	0.0	0	0.0	789	1.5
Kentucky	Total	38,557	2.4	27,647	71.7	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	26,358	1.7	25,962	98.5	0	0.0	0	0.0	0	0.0	–	–
	MC	12,708	0.8	1,710	13.5	0	0.0	0	0.0	0	0.0	0	0.0

Table 3b (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		PACE ^d	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Louisiana	Total	64,625	3.6	19,053	29.5	0	0.0	0	0.0	0	0.0	602	0.9
	FFS	44,003	2.4	19,053	43.3	0	0.0	0	0.0	0	0.0	–	–
	MC	22,282	1.2	0	0.0	0	0.0	0	0.0	0	0.0	602	2.7
Maine	Total	17,346	5.0	8,502	49.0	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	17,346	5.0	8,502	49.0	0	0.0	0	0.0	0	0.0	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Maryland	Total	180,035	12.2	> 35,553	> 19.7	< 11	< 0.0	0	0.0	18,551	10.3	184	0.1
	FFS	98,874	6.7	> 26,386	> 26.7	< 11	< 0.0	0	0.0	18,551	18.8	–	–
	MC	90,589	6.1	9,207	10.2	0	0.0	0	0.0	0	0.0	184	0.2
Massachusetts*	Total	156,804	7.8	31,787	20.3	0	0.0	10,973	7.0	0	0.0	5,772	3.7
	FFS	98,830	4.9	30,736	31.1	0	0.0	282	0.3	0	0.0	–	–
	MC	68,530	3.4	1,154	1.7	0	0.0	10,692	15.6	0	0.0	5,772	8.4
Michigan	Total	309,351	10.7	8,184	2.6	0	0.0	0	0.0	0	0.0	4,026	1.3
	FFS	27,698	1.0	555	2.0	0	0.0	0	0.0	0	0.0	–	–
	MC	288,913	10.0	7,736	2.7	0	0.0	0	0.0	0	0.0	4,026	1.4
Minnesota*	Total	189,273	14.3	62,890	33.2	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	137,186	10.4	62,890	45.8	0	0.0	0	0.0	0	0.0	–	–
	MC	74,510	5.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mississippi	Total	48,144	6.1	26,784	55.6	0	0.0	548	1.1	0	0.0	0	0.0
	FFS	34,662	4.4	26,784	77.3	0	0.0	548	1.6	0	0.0	–	–
	MC	14,914	1.9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Missouri	Total	92,421	8.0	22,483	24.3	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	92,332	8.0	22,483	24.4	0	0.0	0	0.0	0	0.0	–	–
	MC	151	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Montana	Total	14,780	4.9	5,391	36.5	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	14,780	4.9	5,391	36.5	0	0.0	0	0.0	0	0.0	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Nebraska	Total	15,612	5.6	11,428	73.2	0	0.0	0	0.0	0	0.0	250	1.6
	FFS	9,133	3.3	9,055	99.1	0	0.0	0	0.0	0	0.0	–	–
	MC	15,033	5.4	10,865	72.3	0	0.0	0	0.0	0	0.0	250	1.7

Table 3b (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		PACE ^d	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Nevada	Total	55,827	6.7	6,363	11.4	143	0.3	11,679	20.9	0	0.0	0	0.0
	FFS	52,180	6.3	6,361	12.2	90	0.2	11,074	21.2	0	0.0	–	–
	MC	5,660	0.7	1,666	29.4	55	1.0	689	12.2	0	0.0	0	0.0
New Hampshire	Total	20,302	8.7	10,092	49.7	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	10,757	4.6	10,092	93.8	0	0.0	0	0.0	0	0.0	–	–
	MC	12,291	5.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
New Jersey*	Total	181,801	9.6	12,979	7.1	0	0.0	0	0.0	0	0.0	1,443	0.8
	FFS	119,948	6.4	12,979	10.8	0	0.0	0	0.0	0	0.0	–	–
	MC	66,298	3.5	0	0.0	0	0.0	0	0.0	0	0.0	1,443	2.2
New Mexico	Total	85,368	9.2	5,078	5.9	0	0.0	1,778	2.1	0	0.0	0	0.0
	FFS	7,494	0.8	5,078	67.8	0	0.0	1,778	23.7	0	0.0	–	–
	MC	79,682	8.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
New York	Total	890,823	12.5	100,459	11.3	0	0.0	17,028	1.9	0	0.0	6,927	0.8
	FFS	338,265	4.8	100,459	29.7	0	0.0	17,028	5.0	0	0.0	–	–
	MC	632,612	8.9	0	0.0	0	0.0	0	0.0	0	0.0	6,927	1.1
North Carolina	Total	121,603	5.1	12,903	10.6	0	0.0	0	0.0	0	0.0	2,847	2.3
	FFS	109,197	4.6	0	0.0	0	0.0	0	0.0	0	0.0	–	–
	MC	17,136	0.7	12,903	75.3	0	0.0	0	0.0	0	0.0	2,847	16.6
North Dakota	Total	13,499	11.4	6,186	45.8	0	0.0	0	0.0	0	0.0	226	1.7
	FFS	12,459	10.6	6,186	49.7	0	0.0	0	0.0	0	0.0	–	–
	MC	1,080	0.9	0	0.0	0	0.0	0	0.0	0	0.0	226	20.9
Ohio	Total	546,334	17.7	109,857	20.1	5,092	0.9	45,638	8.4	0	0.0	670	0.1
	FFS	134,274	4.4	75,914	56.5	0	0.0	45,638	34.0	0	0.0	–	–
	MC	441,288	14.3	37,059	8.4	5,092	1.2	0	0.0	0	0.0	670	0.2
Oklahoma	Total	39,435	4.4	25,384	64.4	0	0.0	16,681	42.3	0	0.0	707	1.8
	FFS	38,794	4.4	25,384	65.4	0	0.0	16,681	43.0	0	0.0	–	–
	MC	707	0.1	0	0.0	0	0.0	0	0.0	0	0.0	707	100.0
Oregon	Total	271,234	22.8	34,360	12.7	1,978	0.7	0	0.0	6,507	2.4	1,906	0.7
	FFS	84,150	7.1	34,359	40.8	1,978	2.4	0	0.0	6,507	7.7	–	–
	MC	230,307	19.4	< 11	< 0.0	0	0.0	0	0.0	0	0.0	1,906	0.8

Table 3b (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		PACE ^d	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Pennsylvania	Total	684,935	21.0	130,191	19.0	0	0.0	4,879	0.7	0	0.0	8,608	1.3
	FFS	130,219	4.0	62,575	48.1	0	0.0	272	0.2	0	0.0	–	–
	MC	587,746	18.0	67,830	11.5	0	0.0	4,607	0.8	0	0.0	8,608	1.5
Rhode Island*	Total	27,971	10.3	0	0.0	0	0.0	0	0.0	0	0.0	324	1.2
	FFS	8,191	3.0	0	0.0	0	0.0	0	0.0	0	0.0	–	–
	MC	20,548	7.6	0	0.0	0	0.0	0	0.0	0	0.0	324	1.6
South Carolina	Total	116,887	8.5	40,104	34.3	0	0.0	0	0.0	0	0.0	536	0.5
	FFS	65,293	4.8	40,104	61.4	0	0.0	0	0.0	0	0.0	–	–
	MC	56,829	4.1	0	0.0	0	0.0	0	0.0	0	0.0	536	0.9
South Dakota	Total	7,158	5.3	6,643	92.8	281	3.9	0	0.0	0	0.0	0	0.0
	FFS	7,158	5.3	6,643	92.8	281	3.9	0	0.0	0	0.0	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tennessee	Total	102,305	6.0	5,215	5.1	0	0.0	> 866	> 0.8	0	0.0	420	0.4
	FFS	48,304	2.8	5,215	10.8	0	0.0	877	1.8	0	0.0	–	–
	MC	56,828	3.3	0	0.0	0	0.0	0	0.0	0	0.0	420	0.7
Texas	Total	776,212	14.7	40,706	5.2	0	0.0	5,451	0.7	5,384	0.7	1,372	0.2
	FFS	380,348	7.2	40,706	10.7	0	0.0	5,451	1.4	5,384	1.4	–	–
	MC	532,068	10.1	0	0.0	0	0.0	0	0.0	0	0.0	1,372	0.3
Utah	Total	66,440	16.5	10,721	16.1	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	10,743	2.7	8,844	82.3	0	0.0	0	0.0	0	0.0	–	–
	MC	58,540	14.6	2,923	5.0	0	0.0	0	0.0	0	0.0	0	0.0
Vermont* ^g	Total	13,820	7.2	8,164	59.1	0	0.0	0	0.0	0	0.0	0	0.0
	FFS	13,820	7.2	8,164	59.1	0	0.0	0	0.0	0	0.0	–	–
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Virginia	Total	102,013	6.2	55,457	54.4	0	0.0	0	0.0	0	0.0	1,829	1.8
	FFS	31,957	2.0	29,882	93.5	0	0.0	0	0.0	0	0.0	–	–
	MC	83,800	5.1	37,642	44.9	0	0.0	0	0.0	0	0.0	1,829	2.2
Washington	Total	114,900	5.5	14	0.0	0	0.0	0	0.0	0	0.0	1,039	0.9
	FFS	90,589	4.3	< 11	< 0.0	0	0.0	0	0.0	0	0.0	–	–
	MC	30,073	1.4	13	0.0	0	0.0	0	0.0	0	0.0	1,039	3.5

Table 3b (continued)

State	Delivery system ^b	Any HCBS ^a		Section 1915(c) waiver programs		Section 1915(i) HCBS state plan option		Section 1915(j) Self-directed PAS option		Section 1915(k) Community First Choice		PACE ^d	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
West Virginia	Total	80,786	13.0	11,072	13.7	0	0.0	6,074	7.5	0	0.0	0	0.0
	FFS	40,689	6.6	11,071	27.2	0	0.0	6,074	14.9	0	0.0	–	–
	MC	46,803	7.5	< 11	< 0.0	0	0.0	0	0.0	0	0.0	0	0.0
Wisconsin	Total	218,050	16.6	73,941	33.9	209	0.1	44,608	20.5	0	0.0	646	0.3
	FFS	120,191	9.2	10,724	8.9	209	0.2	40,862	34.0	0	0.0	–	–
	MC	115,775	8.8	63,420	54.8	0	0.0	4,398	3.8	0	0.0	646	0.6
Wyoming	Total	11,413	14.8	1,539	13.5	0	0.0	2,505	21.9	0	0.0	159	1.4
	FFS	11,264	14.6	1,539	13.7	0	0.0	2,505	22.2	0	0.0	–	–
	MC	159	0.2	0	0.0	0	0.0	0	0.0	0	0.0	159	100.0

Source: Mathematica’s analysis of the 2019 OT and DE TAFs.

Note: This table shows the number of Medicaid beneficiaries who received any program-based or state plan HCBS and the number who received program-based HCBS (by category) in 2019. The HCBS categories were defined based on section 9817 of the ARP (Table 1). For all programs except PACE, we present the number of users identified in the OT claims file. For PACE, we present the number of enrollees identified in the DE file because we did not identify any beneficiaries with claims for PACE in the OT file. The number of users across all HCBS categories in Tables 3b and 4b does not sum to 100 percent because some beneficiaries received more than one type of HCBS during the year. Certain cells have been replaced with ranges of plausible values or suppressed based on small cell sizes (1 to 10) (CMS 2020[a]). Data has also been replaced with ranges of plausible values or suppressed in cases where it would have been possible to derive the small cell values.

Gray shading and an asterisk identify states with potential data quality issues. CMS’s assessment of the 2019 TAF data quality found some states with TAF data elements that are unusable or of high concern (CMS 2021[d]). Key state-specific data quality issues that might have impacted the accuracy of the user counts presented in this table: (1) Massachusetts, New Jersey, and Rhode Island’s OT files are of high concern because they have unusually high volumes of header claims compared with other states; and (2) Minnesota’s OT file is of high concern because it has an unusually high volume of non-denied line claims compared with other states. Additional potential issues specific to service categories are listed in the footnotes listed below.

^a This is an unduplicated count of Medicaid beneficiaries who received any HCBS (either program-based or state plan benefits, presented in Tables 3b and 4b) in 2019.

^b Delivery system is defined as either FFS or MC. The “total” row includes beneficiaries who had at least one FFS or MC claim. The “FFS” row represents beneficiaries who had at least one FFS claim. The “MC” row represents beneficiaries who had at least one MC claim. The FFS and MC rows do not sum to the total because some beneficiaries had both FFS and MC claims.

^c The number of total Medicaid beneficiaries is shown in Table 2.

^d Because PACE is a capitated program, PACE enrollees are considered as managed care users. The FFS rows for this program are indicated by a dash (–).

^e Unlike in Table 3a, the U.S. counts include Alabama, Kentucky, and Vermont because the Health Homes program is not in the ARP definition of HCBS. We calculated the percentage of Medicaid beneficiaries who received any HCBS using all 88,031,869 Medicaid beneficiaries, shown in Table 2. For comparison with Table 3a, excluding

Table 3b (*continued*)

these states results in 7,314,677 total HCBS users (3,372,884 beneficiaries who received HCBS via FFS delivery and 4,471,885 beneficiaries who received HCBS via MC delivery); 1,583,610 users of section 1915(c) waiver program services; and 62,602 enrollees in the PACE program. The number of beneficiaries in section 1915(i) HCBS state plan option, section 1915(j) self-directed PAS option, and section 1915(k) Community First Choice option do not change.

^f Idaho reported section 1915(c) waiver program participants more accurately in the DE file. Although, Idaho operated a section 1915(c) waiver program in 2019, we did not identify any beneficiaries with claims covered by the waiver program in the OT file. In the DE file, we identified 23,397 waiver program participants.

^g Vermont reported section 1915(c) waiver program participants more accurately in the DE file. Although Vermont did not operation a section 1915(c) waiver program in 2019, we identified 8,164 beneficiaries with claims covered by a section 1915(c) waiver program and did not identify any waiver program participants in the DE file.

ARP = American Rescue Plan Act of 2021; CHIP = Children's Health Insurance Program; DE = Demographic and Enrollment; FFS = fee-for-service; HCBS = home and community-based services; MACBIS = Medicaid and CHIP Business Information Solution; MC = managed care; MFP = Money Follows the Person; OT = Other Services; PACE = Program of All-Inclusive Care for the Elderly; PAS = personal assistant services; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

Table 4a. Medicaid beneficiaries who used other state plan HCBS by delivery system for LTSS expenditures reports categories, 2019

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
United States ^h	Total	7,475,171	8.8	1,102,571	14.7	2,444,301	32.7	2,010,091	26.9	1,844,813	24.7	83,480	1.1
	FFS	3,347,445	3.9	566,332	16.9	578,735	17.3	475,147	14.2	1,277,171	38.2	28,226	0.8
	MC	4,476,231	5.3	561,187	12.5	1,921,563	42.9	1,595,051	35.6	589,072	13.2	55,735	1.2
Alabama	Total	545,992	47.6	83	0.0	31,604	5.8	7,701	1.4	25,280	4.6	110	0.0
	FFS	77,672	6.8	83	0.1	31,604	40.7	7,701	9.9	25,280	32.5	110	0.1
	MC	200	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Alaska	Total	15,890	6.4	2,536	16.0	316	2.0	8,667	54.5	1,235	7.8	43	0.3
	FFS	15,890	6.4	2,536	16.0	316	2.0	8,667	54.5	1,235	7.8	43	0.3
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Arizona	Total	134,166	6.1	40,630	30.3	13,905	10.4	99,139	73.9	0	0.0	0	0.0
	FFS	13,630	0.6	11,990	88.0	280	2.1	1,511	11.1	0	0.0	0	0.0
	MC	126,377	5.8	29,668	23.5	13,631	10.8	97,661	77.3	0	0.0	0	0.0
Arkansas	Total	33,330	3.2	15,756	47.3	5,278	15.8	1,807	5.4	8,967	26.9	119	0.4
	FFS	31,773	3.1	14,891	46.9	5,154	16.2	1,630	5.1	8,909	28.0	109	0.3
	MC	6,332	0.6	3,168	50.0	185	2.9	177	2.8	72	1.1	35	0.6
California	Total	323,442	2.1	1,622	0.5	24,287	7.5	> 4,682	> 1.4	270,826	83.7	< 11	< 0.0
	FFS	284,584	1.9	< 11	< 0.0	7,315	2.6	> 699	> 0.2	262,543	92.3	< 11	< 0.0
	MC	49,155	0.3	> 1,611	> 3.3	17,082	34.8	3,973	8.1	9,441	19.2	< 11	< 0.0
Colorado	Total	91,890	6.2	> 6,189	> 6.7	25,623	27.9	21,707	23.6	< 11	< 0.0	0	0.0
	FFS	85,529	5.8	> 5,518	> 6.5	25,555	29.9	21,332	24.9	< 11	< 0.0	0	0.0
	MC	9,624	0.7	676	7.0	88	0.9	427	4.4	0	0.0	0	0.0
Connecticut	Total	67,116	6.1	38	0.1	28,331	42.2	124	0.2	30,963	46.1	0	0.0
	FFS	67,116	6.1	38	0.1	28,331	42.2	124	0.2	30,963	46.1	0	0.0
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Delaware	Total	18,349	6.4	53	0.3	3,582	19.5	5,849	31.9	3,662	20.0	266	1.4
	FFS	7,933	2.8	0	0.0	232	2.9	3,235	40.8	3,661	46.1	34	0.4
	MC	11,383	4.0	> 43	> 0.4	3,470	30.5	2,614	23.0	< 11	< 0.1	263	2.3
District of Columbia	Total	57,203	20.8	6,636	11.6	6,452	11.3	221	0.4	3,368	5.9	0	0.0
	FFS	11,607	4.2	6,439	55.5	5,594	48.2	22	0.2	3,368	29.0	0	0.0
	MC	1,242	0.5	202	16.3	881	70.9	199	16.0	0	0.0	0	0.0

Table 4a (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Florida	Total	182,832	3.7	29,179	16.0	46,908	25.7	7,739	4.2	42,843	23.4	579	0.3
	FFS	65,211	1.3	> 384	> 0.6	3,719	5.7	3,658	5.6	24,565	37.7	< 11	< 0.0
	MC	122,434	2.5	28,839	23.6	43,549	35.6	4,738	3.9	19,055	15.6	577	0.5
Georgia	Total	242,335	10.2	0	0.0	87,733	36.2	79,630	32.9	41,795	17.2	1,503	0.6
	FFS	95,898	4.0	0	0.0	28,594	29.8	16,342	17.0	15,776	16.5	1,470	1.5
	MC	150,435	6.3	0	0.0	59,779	39.7	64,995	43.2	26,210	17.4	38	0.0
Hawaii	Total	27,098	7.2	870	3.2	656	2.4	7,498	27.7	20,287	74.9	0	0.0
	FFS	5,078	1.3	746	14.7	0	0.0	23	0.5	4,925	97.0	0	0.0
	MC	22,977	6.1	132	0.6	656	2.9	7,475	32.5	15,996	69.6	0	0.0
Idaho	Total	32,126	9.9	9,495	29.6	4,507	14.0	8,697	27.1	8,398	26.1	445	1.4
	FFS	22,253	6.9	7,760	34.9	1,812	8.1	0	0.0	4,599	20.7	445	2.0
	MC	15,316	4.7	4,295	28.0	2,704	17.7	8,697	56.8	3,875	25.3	0	0.0
Illinois	Total	317,429	9.8	566	0.2	13,464	4.2	171,234	53.9	104,269	32.8	1,321	0.4
	FFS	156,774	4.8	192	0.1	1,672	1.1	45,790	29.2	47,682	30.4	1,320	0.8
	MC	190,253	5.9	> 371	> 0.2	12,165	6.4	136,477	71.7	60,988	32.1	< 11	< 0.0
Indiana	Total	66,746	3.9	0	0.0	17,575	26.3	30	0.0	955	1.4	0	0.0
	FFS	62,632	3.6	0	0.0	13,883	22.2	30	0.0	955	1.5	0	0.0
	MC	4,627	0.3	0	0.0	3,998	86.4	0	0.0	0	0.0	0	0.0
Iowa	Total	63,447	8.4	3,900	6.1	16,384	25.8	27,892	44.0	922	1.5	0	0.0
	FFS	4,654	0.6	2,823	60.7	622	13.4	410	8.8	838	18.0	0	0.0
	MC	60,130	7.9	1,078	1.8	15,931	26.5	27,577	45.9	85	0.1	0	0.0
Kansas	Total	57,267	12.8	8,247	14.4	2,658	4.6	14,079	24.6	34,460	60.2	0	0.0
	FFS	6,073	1.4	102	1.7	> 26	> 0.4	< 11	< 0.2	6,000	98.8	0	0.0
	MC	51,881	11.6	8,211	15.8	2,632	5.1	14,077	27.1	28,792	55.5	0	0.0
Kentucky	Total	1,574,036	100.0	0	0.0	16,113	1.0	0	0.0	1,659	0.1	496	0.0
	FFS	26,358	1.7	0	0.0	7,004	26.6	0	0.0	348	1.3	109	0.4
	MC	12,708	0.8	0	0.0	9,470	74.5	0	0.0	1,317	10.4	397	3.1
Louisiana	Total	65,244	3.6	15,216	23.3	19,362	29.7	9,435	14.5	12,510	19.2	0	0.0
	FFS	44,043	2.4	14,777	33.6	10,659	24.2	< 11	< 0.0	> 8779	> 19.9	0	0.0
	MC	22,866	1.3	457	2.0	9,170	40.1	9,434	41.3	3,736	16.3	0	0.0

Table 4a (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Maine	Total	17,358	5.0	8,769	50.5	2,353	13.6	0	0.0	1,708	9.8	188	1.1
	FFS	17,358	5.0	8,769	50.5	2,353	13.6	0	0.0	1,708	9.8	188	1.1
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Maryland	Total	186,074	12.6	0	0.0	104,664	56.2	43,512	23.4	31,814	17.1	906	0.5
	FFS	98,902	6.7	0	0.0	22,612	22.9	43,512	44.0	31,319	31.7	841	0.9
	MC	90,589	6.1	0	0.0	83,113	91.7	0	0.0	535	0.6	69	0.1
Massachusetts*	Total	156,804	7.8	50,149	32.0	91,774	58.5	0	0.0	41,268	26.3	196	0.1
	FFS	98,830	4.9	33,264	33.7	41,102	41.6	0	0.0	35,335	35.8	196	0.2
	MC	68,530	3.4	22,421	32.7	53,827	78.5	0	0.0	6,158	9.0	0	0.0
Michigan	Total	317,933	11.0	11,505	3.6	17,059	5.4	252,078	79.3	164,144	51.6	26,440	8.3
	FFS	27,695	1.0	0	0.0	3,807	13.7	10,028	36.2	13,941	50.3	456	1.6
	MC	295,508	10.2	11,505	3.9	13,872	4.7	244,179	82.6	152,629	51.6	26,000	8.8
Minnesota*	Total	157,502	11.9	44,083	28.0	26,854	17.0	51,482	32.7	17,285	11.0	1,476	0.9
	FFS	104,074	7.9	33,305	32.0	7,400	7.1	20,132	19.3	5,427	5.2	1,142	1.1
	MC	71,949	5.4	11,458	15.9	20,430	28.4	36,694	51.0	11,975	16.6	340	0.5
Mississippi	Total	48,153	6.1	< 11	< 0.0	3,161	6.6	0	0.0	18,677	38.8	> 397	> 0.8
	FFS	34,668	4.4	0	0.0	1,245	3.6	0	0.0	7,111	20.5	294	0.8
	MC	14,918	1.9	< 11	< 0.1	2,014	13.5	0	0.0	12,818	85.9	> 120	> 0.8
Missouri	Total	140,660	12.1	64,448	45.8	3,603	2.6	101	0.1	29,367	20.9	699	0.5
	FFS	92,332	8.0	64,317	69.7	3,603	3.9	101	0.1	29,367	31.8	699	0.8
	MC	151	0.0	151	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Montana	Total	14,780	4.9	3,876	26.2	551	3.7	0	0.0	7,289	49.3	58	0.4
	FFS	14,780	4.9	3,876	26.2	551	3.7	0	0.0	7,289	49.3	58	0.4
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Nebraska	Total	15,693	5.6	0	0.0	1,472	9.4	2,458	15.7	0	0.0	379	2.4
	FFS	9,328	3.3	0	0.0	< 11	< 0.1	> 71	> 0.8	0	0.0	190	2.0
	MC	15,052	5.4	0	0.0	1,465	9.7	2,444	16.2	0	0.0	190	1.3
Nevada	Total	53,391	6.4	15	0.0	2,318	4.3	12,263	23.0	27,119	50.8	0	0.0
	FFS	49,737	6.0	< 11	< 0.0	581	1.2	10,696	21.5	27,119	54.5	0	0.0
	MC	5,659	0.7	12	0.2	1,754	31.0	1,694	29.9	0	0.0	0	0.0

Table 4a (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
New Hampshire	Total	20,302	8.7	36	0.2	12,583	62.0	0	0.0	558	2.7	64	0.3
	FFS	10,757	4.6	32	0.3	381	3.5	0	0.0	558	5.2	19	0.2
	MC	12,291	5.3	< 11	< 0.1	12,274	99.9	0	0.0	0	0.0	> 41	> 0.3
New Jersey*	Total	181,820	9.6	53,820	29.6	23,356	12.8	98,361	54.1	8,083	4.4	55	0.0
	FFS	119,970	6.4	64	0.1	677	0.6	98,361	82.0	8,083	6.7	55	0.0
	MC	66,298	3.5	53,817	81.2	22,865	34.5	0	0.0	0	0.0	0	0.0
New Mexico	Total	88,917	9.6	26,674	30.0	60,300	67.8	1,402	1.6	3,321	3.7	701	0.8
	FFS	7,494	0.8	< 11	< 0.1	2,257	30.1	13	0.2	> 335	> 4.5	0	0.0
	MC	79,708	8.6	26,674	33.5	58,112	72.9	1,389	1.7	2,987	3.7	701	0.9
New York	Total	933,461	13.1	113,561	12.2	611,071	65.5	0	0.0	297,019	31.8	14,891	1.6
	FFS	338,362	4.8	0	0.0	47,201	13.9	0	0.0	297,019	87.8	1,434	0.4
	MC	637,134	9.0	113,561	17.8	571,765	89.7	0	0.0	0	0.0	13,465	2.1
North Carolina	Total	121,656	5.1	52,917	43.5	64,148	52.7	0	0.0	29,498	24.2	0	0.0
	FFS	109,211	4.6	52,188	47.8	64,032	58.6	0	0.0	29,013	26.6	0	0.0
	MC	17,180	0.7	870	5.1	179	1.0	0	0.0	516	3.0	0	0.0
North Dakota	Total	13,020	11.0	848	6.5	461	3.5	4,166	32.0	3,262	25.1	13	0.1
	FFS	11,976	10.1	848	7.1	376	3.1	3,468	29.0	3,117	26.0	13	0.1
	MC	1,084	0.9	0	0.0	86	7.9	712	65.7	150	13.8	0	0.0
Ohio	Total	543,229	17.6	500	0.1	59,658	11.0	459,620	84.6	0	0.0	1,694	0.3
	FFS	137,225	4.4	0	0.0	20,175	14.7	101,576	74.0	0	0.0	876	0.6
	MC	436,060	14.1	500	0.1	41,257	9.5	381,467	87.5	0	0.0	827	0.2
Oklahoma	Total	56,074	6.3	3,113	5.6	3,744	6.7	0	0.0	13,507	24.1	0	0.0
	FFS	38,794	4.4	3,113	8.0	3,744	9.7	0	0.0	13,507	34.8	0	0.0
	MC	707	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Oregon	Total	270,425	22.8	1,215	0.4	105,211	38.9	163,409	60.4	23,825	8.8	208	0.1
	FFS	84,438	7.1	1,212	1.4	18,813	22.3	16,914	20.0	23,365	27.7	208	0.2
	MC	229,356	19.3	< 11	< 0.0	94,166	41.1	155,858	68.0	> 467	> 0.2	0	0.0
Pennsylvania	Total	685,498	21.0	8,277	1.2	388,645	56.7	193,483	28.2	147,094	21.5	5,130	0.7
	FFS	130,232	4.0	8,095	6.2	25,886	19.9	2,627	2.0	86,600	66.5	156	0.1
	MC	588,374	18.0	183	0.0	365,327	62.1	191,838	32.6	63,924	10.9	5,059	0.9

Table 4a (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Rhode Island*	Total	28,956	10.7	4,915	17.0	1,130	3.9	25,167	86.9	0	0.0	0	0.0
	FFS	8,754	3.2	3,397	38.8	410	4.7	6,323	72.2	0	0.0	0	0.0
	MC	21,045	7.8	1,697	8.1	748	3.6	19,227	91.4	0	0.0	0	0.0
South Carolina	Total	116,899	8.5	1,857	1.6	6,414	5.5	63,822	54.6	26,880	23.0	398	0.3
	FFS	65,300	4.8	1,857	2.8	2,407	3.7	11,696	17.9	26,880	41.2	398	0.6
	MC	56,895	4.1	0	0.0	4,406	7.7	52,510	92.3	0	0.0	0	0.0
South Dakota	Total	13,847	10.3	< 11	< 0.1	0	0.0	> 652	> 4.7	< 11	< 0.1	51	0.4
	FFS	7,343	5.5	< 11	< 0.1	0	0.0	> 652	> 8.9	< 11	< 0.1	51	0.7
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tennessee	Total	101,038	5.9	41,735	41.3	9,771	9.7	4,679	4.6	54,288	53.7	234	0.2
	FFS	48,316	2.8	0	0.0	0	0.0	0	0.0	42,212	87.4	0	0.0
	MC	55,406	3.2	41,735	75.3	9,771	17.6	4,679	8.4	12,076	21.8	234	0.4
Texas	Total	777,987	14.8	381,857	49.1	399,977	51.4	115,953	14.9	120,041	15.4	7,696	1.0
	FFS	382,055	7.3	198,195	51.9	152,805	40.0	27,234	7.1	62,980	16.5	300	0.1
	MC	532,161	10.1	195,801	36.8	271,619	51.0	89,466	16.8	60,574	11.4	7,664	1.4
Utah*	Total	66,440	16.5	189	0.3	58,236	87.7	0	0.0	414	0.6	31	0.0
	FFS	10,743	2.7	0	0.0	1,518	14.1	0	0.0	414	3.9	31	0.3
	MC	58,540	14.6	189	0.3	56,885	97.2	0	0.0	0	0.0	0	0.0
Vermont	Total	120,960	63.4	1,134	0.9	3,337	2.8	0	0.0	2,749	2.3	0	0.0
	FFS	13,820	7.2	1,134	8.2	3,337	24.1	0	0.0	2,749	19.9	0	0.0
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Virginia	Total	102,017	6.2	> 3,849	> 3.8	16,159	15.8	0	0.0	35,417	34.7	17	0.0
	FFS	31,961	2.0	> 2,178	> 6.8	1,304	4.1	0	0.0	808	2.5	< 11	< 0.0
	MC	83,800	5.1	1,798	2.1	15,314	18.3	0	0.0	34,871	41.6	12	0.0
Washington	Total	125,323	6.0	81,487	65.0	8,706	6.9	6,014	4.8	24,501	19.6	364	0.3
	FFS	90,596	4.3	81,463	89.9	319	0.4	1,658	1.8	7,428	8.2	317	0.3
	MC	29,921	1.4	25	0.1	8,414	28.1	4,394	14.7	17,229	57.6	47	0.2
West Virginia	Total	81,029	13.1	1,457	1.8	32,264	39.8	36,036	44.5	10,371	12.8	206	0.3
	FFS	40,684	6.6	1,457	3.6	10,875	26.7	14,763	36.3	7,754	19.1	186	0.5
	MC	46,797	7.5	0	0.0	22,420	47.9	24,647	52.7	> 2,910	> 6.2	23	0.0

Table 4a (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Wisconsin	Total	218,276	16.6	0	0.0	7,242	3.3	6,980	3.2	117,931	54.0	175	0.1
	FFS	120,302	9.2	0	0.0	4,126	3.4	1,805	1.5	78,992	65.7	165	0.1
	MC	115,927	8.8	0	0.0	3,559	3.1	5,332	4.6	40,966	35.3	12	0.0
Wyoming	Total	24,699	32.1	464	1.9	4,395	17.8	0	0.0	4,668	18.9	16,524	66.9
	FFS	24,550	31.9	464	1.9	4,395	17.9	0	0.0	4,668	19.0	16,524	67.3
	MC	159	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Source: Mathematica’s analysis of the 2019 OT and DE TAFs.

Notes: This table shows the number of Medicaid beneficiaries who received any program-based or state plan HCBS and the number who received any HCBS provided through state plan benefits (by benefit type) in 2019. The HCBS categories were defined based on service categories in the LTSS expenditures reports (Table 1). The number of users across all HCBS categories in Tables 3a and 4a does not sum to 100 percent because some beneficiaries received more than one type of HCBS during the year. Certain cells have been replaced with ranges of plausible values or suppressed based on small cell sizes (1 to 10) (CMS 2020[a]). Data has also been replaced with ranges of plausible values or suppressed in cases where it would have been possible to derive the small cell values.

Gray shading and an asterisk identify states with potential data quality issues. CMS’s assessment of the 2019 TAF data quality found some states with TAF data elements that are unusable or of high concern (CMS 2021[d]). Key state-specific data quality issues that might have impacted the accuracy of the user counts presented in this table: (1) Massachusetts, New Jersey, and Rhode Island’s OT files are of high concern because they have unusually high volumes of header claims compared with other states; (2) Minnesota’s OT file is of high concern because it has unusually high volume of non-denied line claims compared with other states; (3) California’s place-of-service code in the OT file is of high concern, and this could have impacted the identification of non-school-based state plan rehabilitative service users; and (4) Utah’s procedure code for professional services in the OT file is of high concern, and this could have impacted the identification of state plan personal care service users.

^a This is an unduplicated count of Medicaid beneficiaries who received any HCBS (either program-based or state plan benefits, presented in Tables 3a and 4a) in 2019.

^b Delivery system is defined as either FFS or MC. The “total” row includes beneficiaries who had at least one FFS or MC claim. The “FFS” row represents beneficiaries who had at least one FFS claim. The “MC” row represents beneficiaries who had at least one MC claim. The FFS and MC rows do not sum to the total because some beneficiaries had both FFS and MC claims during the year.

^c The number of total Medicaid beneficiaries is shown in Table 2.

^d We did not include personal care services covered under section 1915(j) self-directed PAS option in the count of state plan personal care services.

^e We included all state plan home health claims regardless of the length of service use or the acute/long-term care nature of the service.

^f We excluded state plan rehabilitative service claims with a place-of-service code of 3 = school.

^g We included claims reported as either state plan targeted case management or statewide case management.

^h The U.S. counts exclude Alabama, Kentucky, and Vermont because these states had reporting errors for the Health Homes programs. We calculated the percentage of Medicaid beneficiaries who received any HCBS using 85,120,402 Medicaid beneficiaries, instead of the 88,031,869 beneficiaries shown in Table 2. Including the three

Table 4a (continued)

states results in 9,716,159 total HCBS users (3,465,295 beneficiaries who received HCBS via FFS delivery and 4,489,139 beneficiaries who received HCBS via MC delivery); 1,103,788 users of state plan personal care services; 2,495,355 users of state plan home health services; 2,017,792 users of state plan non-school-based rehabilitative services; 1,874,501 users of state plan case management services; and 84,086 users of state plan private duty nursing services.

CHIP = Children's Health Insurance Program; DE = Demographic and Enrollment; FFS = fee-for-service; HCBS = home and community-based services; MC = managed care; OT = Other Services; PAS = personal assistance service; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

Table 4b. Medicaid beneficiaries who used other state plan HCBS by delivery system for ARP categories, 2019

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services ^f	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
United States ^h	Total	7,444,832	8.5	1,103,788	14.8	2,495,355	33.5	2,058,981	27.7	1,874,501	25.2	56,120	0.8
	FFS	3,490,646	4.0	567,549	16.3	620,680	17.8	534,516	15.3	1,305,548	37.4	10,158	0.3
	MC	4,484,793	5.1	561,187	12.5	1,931,033	43.1	1,593,298	35.5	590,389	13.2	46,175	1.0
Alabama	Total	77,778	6.8	83	0.1	31,604	40.6	7,701	9.9	25,280	32.5	101	0.1
	FFS	77,584	6.8	83	0.1	31,604	40.7	7,701	9.9	25,280	32.6	101	0.1
	MC	200	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Alaska	Total	18,105	7.3	2,536	14.0	316	1.7	11,121	61.4	1,235	6.8	43	0.2
	FFS	18,105	7.3	2,536	14.0	316	1.7	11,121	61.4	1,235	6.8	43	0.2
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Arizona	Total	138,555	6.3	40,630	29.3	13,905	10.0	104,975	75.8	0	0.0	0	0.0
	FFS	20,678	0.9	11,990	58.0	280	1.4	12,891	62.3	0	0.0	0	0.0
	MC	126,363	5.8	29,668	23.5	13,631	10.8	97,644	77.3	0	0.0	0	0.0
Arkansas	Total	33,311	3.2	15,756	47.3	5,278	15.8	1,807	5.4	8,967	26.9	119	0.4
	FFS	31,744	3.1	14,891	46.9	5,154	16.2	1,630	5.1	8,909	28.1	109	0.3
	MC	6,332	0.6	3,168	50.0	185	2.9	177	2.8	72	1.1	35	0.6
California	Total	323,390	2.1	1,622	0.5	24,287	7.5	> 4,676	> 1.4	270,826	83.7	< 11	< 0.0
	FFS	284,570	1.9	< 11	< 0.0	7,315	2.6	> 699	> 0.2	262,543	92.3	< 11	< 0.0
	MC	48,886	0.3	> 1,611	> 3.3	17,082	34.9	3,967	8.1	9,441	19.3	< 11	< 0.0
Colorado	Total	91,899	6.2	> 6,189	> 6.7	25,623	27.9	21,716	23.6	< 11	< 0.0	0	0.0
	FFS	85,538	5.8	> 5,518	> 6.5	25,555	29.9	21,341	24.9	< 11	< 0.0	0	0.0
	MC	9,624	0.7	676	7.0	88	0.9	427	4.4	0	0.0	0	0.0
Connecticut	Total	66,796	6.1	38	0.1	28,331	42.4	124	0.2	30,963	46.4	0	0.0
	FFS	66,796	6.1	38	0.1	28,331	42.4	124	0.2	30,963	46.4	0	0.0
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Delaware	Total	18,236	6.4	53	0.3	3,582	19.6	5,707	31.3	3,662	20.1	124	0.7
	FFS	8,107	2.8	0	0.0	232	2.9	3,399	41.9	3,661	45.2	34	0.4
	MC	11,077	3.9	> 43	> 0.4	3,470	31.3	2,308	20.8	< 11	< 0.1	118	1.1
District of Columbia	Total	12,819	4.7	6,636	51.8	6,452	50.3	229	1.8	3,368	26.3	0	0.0
	FFS	11,604	4.2	6,439	55.5	5,594	48.2	22	0.2	3,368	29.0	0	0.0
	MC	1,250	0.5	202	16.2	881	70.5	207	16.6	0	0.0	0	0.0

Table 4b (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services ^f	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Florida	Total	182,827	3.7	29,179	16.0	46,908	25.7	7,734	4.2	42,843	23.4	579	0.3
	FFS	65,211	1.3	393	0.6	3,719	5.7	3,658	5.6	24,565	37.7	< 11	< 0.0
	MC	122,429	2.5	28,839	23.6	43,549	35.6	4,733	3.9	19,055	15.6	577	0.5
Georgia	Total	242,122	10.2	0	0.0	87,733	36.2	79,511	32.8	41,795	17.3	1,503	0.6
	FFS	95,768	4.0	0	0.0	28,594	29.9	16,321	17.0	15,776	16.5	1,470	1.5
	MC	150,352	6.3	0	0.0	59,779	39.8	64,897	43.2	26,210	17.4	38	0.0
Hawaii	Total	27,073	7.2	870	3.2	656	2.4	7,453	27.5	20,287	74.9	0	0.0
	FFS	5,078	1.3	746	14.7	0	0.0	23	0.5	4,925	97.0	0	0.0
	MC	22,951	6.1	132	0.6	656	2.9	7,430	32.4	15,996	69.7	0	0.0
Idaho	Total	32,089	9.9	9,495	29.6	4,507	14.0	8,697	27.1	8,398	26.2	445	1.4
	FFS	22,206	6.8	7,760	34.9	1,812	8.2	0	0.0	4,599	20.7	445	2.0
	MC	15,316	4.7	4,295	28.0	2,704	17.7	8,697	56.8	3,875	25.3	0	0.0
Illinois	Total	317,122	9.8	566	0.2	13,464	4.2	171,696	54.1	104,269	32.9	1,321	0.4
	FFS	156,936	4.8	192	0.1	1,672	1.1	46,113	29.4	47,682	30.4	1,320	0.8
	MC	189,869	5.8	> 371	> 0.2	12,165	6.4	136,755	72.0	60,988	32.1	< 11	< 0.0
Indiana	Total	66,614	3.9	0	0.0	17,575	26.4	29	0.0	955	1.4	0	0.0
	FFS	62,505	3.6	0	0.0	13,883	22.2	29	0.0	955	1.5	0	0.0
	MC	4,549	0.3	0	0.0	> 3988	> 87.7	0	0.0	0	0.0	0	0.0
Iowa	Total	62,982	8.3	3,900	6.2	16,384	26.0	27,827	44.2	922	1.5	0	0.0
	FFS	4,657	0.6	2,823	60.6	622	13.4	413	8.9	838	18.0	0	0.0
	MC	60,072	7.9	1,078	1.8	15,931	26.5	27,510	45.8	85	0.1	0	0.0
Kansas	Total	57,050	12.8	8,247	14.5	2,658	4.7	13,827	24.2	34,460	60.4	0	0.0
	FFS	6,073	1.4	102	1.7	> 26	> 0.4	< 11	< 0.2	6,000	98.8	0	0.0
	MC	51,663	11.6	8,211	15.9	2,632	5.1	13,825	26.8	28,792	55.7	0	0.0
Kentucky	Total	38,557	2.4	0	0.0	16,113	41.8	0	0.0	1,659	4.3	496	1.3
	FFS	26,358	1.7	0	0.0	7,004	26.6	0	0.0	348	1.3	109	0.4
	MC	12,708	0.8	0	0.0	9,470	74.5	0	0.0	1,317	10.4	397	3.1
Louisiana	Total	64,625	3.6	15,216	23.5	19,362	30.0	8,842	13.7	12,510	19.4	0	0.0
	FFS	44,003	2.4	14,777	33.6	10,659	24.2	< 11	< 0.02	> 8779	> 19.95	0	0.0
	MC	22,282	1.2	457	2.1	9,170	41.2	8,841	39.7	3,736	16.8	0	0.0

Table 4b (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services ^f	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Maine	Total	17,346	5.0	8,769	50.6	2,353	13.6	0	0.0	1,708	9.8	82	0.5
	FFS	17,346	5.0	8,769	50.6	2,353	13.6	0	0.0	1,708	9.8	82	0.5
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Maryland	Total	180,035	12.2	0	0.0	104,664	58.1	43,512	24.2	31,814	17.7	870	0.5
	FFS	98,874	6.7	0	0.0	22,612	22.9	43,512	44.0	31,319	31.7	805	0.8
	MC	90,589	6.1	0	0.0	83,113	91.7	0	0.0	535	0.6	69	0.1
Massachusetts*	Total	156,804	7.8	50,149	32.0	91,774	58.5	0	0.0	41,268	26.3	196	0.1
	FFS	98,830	4.9	33,264	33.7	41,102	41.6	0	0.0	35,335	35.8	196	0.2
	MC	68,530	3.4	22,421	32.7	53,827	78.5	0	0.0	6,158	9.0	0	0.0
Michigan	Total	309,351	10.7	11,505	3.7	17,059	5.5	243,147	78.6	164,144	53.1	26,157	8.5
	FFS	27,698	1.0	0	0.0	3,807	13.7	10,031	36.2	13,941	50.3	456	1.6
	MC	288,913	10.0	11,505	4.0	13,872	4.8	235,137	81.4	152,629	52.8	25,717	8.9
Minnesota*	Total	189,273	14.3	44,083	23.3	26,854	14.2	90,354	47.7	17,285	9.1	316	0.2
	FFS	137,186	10.4	33,305	24.3	7,400	5.4	60,779	44.3	> 5,417	> 3.9	< 11	< 0.0
	MC	74,510	5.6	11,458	15.4	20,430	27.4	39,256	52.7	11,975	16.1	315	0.4
Mississippi	Total	48,144	6.1	< 11	< 0.0	3,161	6.6	0	0.0	18,677	38.8	> 394	> 0.8
	FFS	34,662	4.4	0	0.0	1,245	3.6	0	0.0	7,111	20.5	294	0.8
	MC	14,914	1.9	< 11	< 0.1	2,014	13.5	0	0.0	12,818	85.9	> 116	> 0.8
Missouri	Total	92,421	8.0	64,448	69.7	3,603	3.9	101	0.1	29,367	31.8	699	0.8
	FFS	92,332	8.0	64,317	69.7	3,603	3.9	101	0.1	29,367	31.8	699	0.8
	MC	151	0.0	151	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Montana	Total	14,780	4.9	3,876	26.2	551	3.7	0	0.0	7,289	49.3	58	0.4
	FFS	14,780	4.9	3,876	26.2	551	3.7	0	0.0	7,289	49.3	58	0.4
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Nebraska	Total	15,612	5.6	0	0.0	1,472	9.4	2,448	15.7	0	0.0	190	1.2
	FFS	9,133	3.3	0	0.0	< 11	< 0.1	> 68	> 0.7	0	0.0	0	0.0
	MC	15,033	5.4	0	0.0	1,465	9.7	2,436	16.2	0	0.0	190	1.3
Nevada	Total	55,827	6.7	15	0.0	2,318	4.2	15,008	26.9	27,119	48.6	0	0.0
	FFS	52,180	6.3	< 11	< 0.0	> 573	> 1.1	13,452	25.8	27,119	52.0	0	0.0
	MC	5,660	0.7	12	0.2	1,754	31.0	1,695	29.9	0	0.0	0	0.0

Table 4b (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services ^f	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
New Hampshire	Total	20,302	8.7	36	0.2	12,583	62.0	0	0.0	558	2.7	64	0.3
	FFS	10,757	4.6	32	0.3	381	3.5	0	0.0	558	5.2	19	0.2
	MC	12,291	5.3	< 11	< 0.1	12,274	99.9	0	0.0	0	0.0	> 41	> 0.3
New Jersey*	Total	181,801	9.6	53,820	29.6	23,356	12.8	98,361	54.1	8,083	4.4	55	0.0
	FFS	119,948	6.4	64	0.1	677	0.6	98,361	82.0	8,083	6.7	55	0.0
	MC	66,298	3.5	53,817	81.2	22,865	34.5	0	0.0	0	0.0	0	0.0
New Mexico	Total	85,368	9.2	26,674	31.2	60,300	70.6	1,402	1.6	3,321	3.9	99	0.1
	FFS	7,494	0.8	< 11	< 0.1	2,257	30.1	13	0.2	> 335	> 4.5	0	0.0
	MC	79,682	8.6	26,674	33.5	58,112	72.9	1,389	1.7	2,987	3.7	99	0.1
New York	Total	890,823	12.5	113,561	12.7	611,071	68.6	0	0.0	297,019	33.3	7,518	0.8
	FFS	338,265	4.8	0	0.0	47,201	14.0	0	0.0	297,019	87.8	1,432	0.4
	MC	632,612	8.9	113,561	18.0	571,765	90.4	0	0.0	0	0.0	6,092	1.0
North Carolina	Total	121,603	5.1	52,917	43.5	64,148	52.8	0	0.0	29,498	24.3	0	0.0
	FFS	109,197	4.6	52,188	47.8	64,032	58.6	0	0.0	29,013	26.6	0	0.0
	MC	17,136	0.7	870	5.1	179	1.0	0	0.0	516	3.0	0	0.0
North Dakota	Total	13,499	11.4	848	6.3	461	3.4	4,643	34.4	3,262	24.2	13	0.1
	FFS	12,459	10.6	848	6.8	376	3.0	3,950	31.7	3,117	25.0	13	0.1
	MC	1,080	0.9	0	0.0	< 97	< 9.0	707	65.5	150	13.9	0	0.0
Ohio	Total	546,334	17.7	500	0.1	59,658	10.9	462,088	84.6	0	0.0	1,694	0.3
	FFS	134,274	4.4	0	0.0	20,175	15.0	98,391	73.3	0	0.0	876	0.7
	MC	441,288	14.3	500	0.1	41,257	9.3	386,308	87.5	0	0.0	827	0.2
Oklahoma	Total	39,435	4.4	3,113	7.9	3,744	9.5	0	0.0	13,507	34.3	0	0.0
	FFS	38,794	4.4	3,113	8.0	3,744	9.7	0	0.0	13,507	34.8	0	0.0
	MC	707	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Oregon	Total	271,234	22.8	1,215	0.4	105,211	38.8	163,918	60.4	23,825	8.8	208	0.1
	FFS	84,150	7.1	1,212	1.4	18,813	22.4	16,265	19.3	23,365	27.8	208	0.2
	MC	230,307	19.4	< 11	< 0.0	94,166	40.9	156,710	68.0	> 467	> 0.2	0	0.0
Pennsylvania	Total	684,935	21.0	8,277	1.2	388,645	56.7	192,827	28.2	147,094	21.5	4,339	0.6
	FFS	130,219	4.0	8,095	6.2	25,886	19.9	2,620	2.0	86,600	66.5	156	0.1
	MC	587,746	18.0	183	0.0	365,327	62.2	191,185	32.5	63,924	10.9	4,268	0.7

Table 4b (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services ^f	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Rhode Island*	Total	27,971	10.3	4,915	17.6	1,130	4.0	24,140	86.3	0	0.0	0	0.0
	FFS	8,191	3.0	3,397	41.5	410	5.0	5,792	70.7	0	0.0	0	0.0
	MC	20,548	7.6	1,697	8.3	748	3.6	18,698	91.0	0	0.0	0	0.0
South Carolina	Total	116,887	8.5	1,857	1.6	6,414	5.5	63,763	54.6	26,880	23.0	398	0.3
	FFS	65,293	4.8	1,857	2.8	2,407	3.7	11,703	17.9	26,880	41.2	398	0.6
	MC	56,829	4.1	0	0.0	4,406	7.8	52,440	92.3	0	0.0	0	0.0
South Dakota	Total	7,158	5.3	< 11	< 0.2	0	0.0	> 398	> 5.6	< 11	< 0.2	51	0.7
	FFS	7,158	5.3	< 11	< 0.2	0	0.0	> 398	> 5.6	< 11	< 0.2	51	0.7
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Tennessee	Total	102,305	6.0	41,735	40.8	9,771	9.6	6,209	6.1	54,288	53.1	0	0.0
	FFS	48,304	2.8	0	0.0	0	0.0	0	0.0	42,212	87.4	0	0.0
	MC	56,828	3.3	41,735	73.4	9,771	17.2	6,209	10.9	12,076	21.3	0	0.0
Texas	Total	776,212	14.7	381,857	49.2	399,977	51.5	114,130	14.7	120,041	15.5	7,183	0.9
	FFS	380,348	7.2	198,195	52.1	152,805	40.2	25,490	6.7	62,980	16.6	21	0.0
	MC	532,068	10.1	195,801	36.8	271,619	51.0	89,369	16.8	60,574	11.4	7,165	1.3
Utah*	Total	66,440	16.5	189	0.3	58,236	87.7	0	0.0	414	0.6	31	0.0
	FFS	10,743	2.7	0	0.0	1,518	14.1	0	0.0	414	3.9	31	0.3
	MC	58,540	14.6	189	0.3	56,885	97.2	0	0.0	0	0.0	0	0.0
Vermont	Total	13,820	7.2	1,134	8.2	3,337	24.1	0	0.0	2,749	19.9	0	0.0
	FFS	13,820	7.2	1,134	8.2	3,337	24.1	0	0.0	2,749	19.9	0	0.0
	MC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Virginia	Total	102,013	6.2	3,855	3.8	16,159	15.8	0	0.0	35,417	34.7	17	0.0
	FFS	31,957	2.0	> 2,184	> 6.8	1,304	4.1	0	0.0	808	2.5	< 11	< 0.0
	MC	83,800	5.1	1,798	2.1	15,314	18.3	0	0.0	34,871	41.6	12	0.0
Washington	Total	114,900	5.5	81,487	70.9	8,706	7.6	6,158	5.4	24,501	21.3	364	0.3
	FFS	90,589	4.3	81,463	89.9	319	0.4	1,650	1.8	7,428	8.2	317	0.3
	MC	30,073	1.4	25	0.1	8,414	28.0	4,546	15.1	17,229	57.3	47	0.2
West Virginia	Total	80,786	13.0	1,457	1.8	32,264	39.9	36,052	44.6	10,371	12.8	206	0.3
	FFS	40,689	6.6	1,457	3.6	10,875	26.7	14,774	36.3	7,754	19.1	186	0.5
	MC	46,803	7.5	0	0.0	22,420	47.9	24,652	52.7	> 2,910	> 6.2	23	0.0

Table 4b (continued)

State	Delivery system ^b	Any HCBS ^a		State plan personal care services ^d		State plan home health services ^e		State plan rehabilitative services ^f		State plan case management services ^g		State plan private duty nursing services ^f	
		Users	% of Medicaid beneficiaries ^c	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users	Users	% of HCBS users
Wisconsin	Total	218,050	16.6	0	0.0	7,242	3.3	6,649	3.0	117,931	54.1	175	0.1
	FFS	120,191	9.2	0	0.0	4,126	3.4	1,659	1.4	78,992	65.7	165	0.1
	MC	115,775	8.8	0	0.0	3,559	3.1	5,143	4.4	40,966	35.4	11	0.0
Wyoming	Total	11,413	14.8	464	4.1	4,395	38.5	0	0.0	4,668	40.9	0	0.0
	FFS	11,264	14.6	464	4.1	4,395	39.0	0	0.0	4,668	41.4	0	0.0
	MC	159	0.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Source: Mathematica’s analysis of the 2019 OT and DE TAFs.

Notes: This table shows the number of Medicaid beneficiaries who received any program-based or state plan HCBS and the number who received any HCBS provided through state plan benefits (by benefit type) in 2019. The HCBS categories were defined based on section 9817 of the ARP (Table 1). The number of users across all HCBS categories in Tables 3b and 4b does not sum to 100 percent because some beneficiaries received more than one type of HCBS during the year. Certain cells have been replaced with ranges of plausible values or suppressed based on small cell sizes (1 to 10) (CMS 2020[a]). Data has also been replaced with ranges of plausible values or suppressed in cases where it would have been possible to derive the small cell values.

Gray shading and an asterisk identify states with potential data quality issues. CMS’s assessment of the 2019 TAF data quality found some states with TAF data elements that are unusable or of high concern (CMS 2021[d]). Key state-specific data quality issues that might have impacted the accuracy of the user counts presented in this table: (1) Massachusetts, New Jersey, and Rhode Island’s OT files are of high concern because they have unusually high volumes of header claims compared with other states; (2) Minnesota’s OT file is of high concern because it has an unusually high volume of non-denied line claims compared with other states (3) California’s place-of-service code in the OT file is of high concern, and this could have impacted the identification of non-school-based state plan rehabilitative service users; and (4) Utah’s procedure code for professional services in the OT file is of high concern, and this could have impacted the identification of state plan personal care service users.

^a This is the unduplicated count of Medicaid beneficiaries who received any HCBS (either program-based or state plan benefits, presented in Tables 3b and 4b) in 2019. The HCBS categories were defined based on section 9817 of the ARP (Table 1).

^b Delivery system is defined as either FFS or MC. The “total” row includes beneficiaries who had at least one FFS or MC claim. The “FFS” row represents beneficiaries who had at least one FFS claim. The “MC” row represents beneficiaries who had at least one MC claim. The FFS and MC rows do not sum to the total because some beneficiaries had both FFS and MC claims during the year.

^c The number of total Medicaid beneficiaries is shown in Table 2.

^d We did not include personal care services covered under section 1915(j) self-direct PAS option in the count of state plan personal care services.

^e We included all state plan home health claims regardless of the length of service use or the acute/long-term care nature of the service.

^f Unlike in Table 4a, we excluded claims with the following place-of-service codes: 9 = prison/correctional facility, 21 = inpatient hospital, 31 = skilled nursing facility, 32 = nursing facility, 33 = custodial care facility, 51 = inpatient psychiatric facility, 54 = ICF/IID, 55 = residential substance abuse treatment facility, 56 = psychiatric residential treatment center, and 61 = comprehensive inpatient rehabilitation facility.

Table 4b (continued)

^g We included claims reported as either state plan targeted case management or statewide case management.

^h Unlike in Table 4a, the U.S. counts include Alabama, Kentucky, and Vermont because the Health Homes program is not in the ARP definition of HCBS. We calculated the percentage of Medicaid beneficiaries who received any HCBS using 88,031,869 Medicaid beneficiaries shown in Table 2. For comparison with Table 4a, excluding these states results in 7,314,677 total HCBS users (3,372,884 beneficiaries who received HCBS via FFS delivery and 4,471,885 beneficiaries who received HCBS via MC delivery); 1,102,571 users of state plan personal care services; 2,444,301 users of state plan home health services; 2,051,280 users of state plan non-institutional rehabilitative service; 1,844,813 users of state plan case management services; and 55,523 users of state plan non-institutional private duty nursing services.

ARP = American Rescue Plan Act of 2021; CHIP = Children's Health Insurance Program; DE = Demographic and Enrollment; FFS = fee-for-service; HCBS = home and community-based services; MC = managed care; OT = Other Services; PAS = personal assistance service; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

Table 5a. Medicaid LTSS user count balance based on LTSS expenditures reports categories, 2019

State	Medicaid beneficiaries ^a	Total LTSS		Institutional LTSS		HCBS		Both institutional LTSS and HCBS	
		Users ^b	% of Medicaid beneficiaries	Users ^c	% of LTSS users ^d	Users ^e	% of LTSS users	Users	% of LTSS users
United States ^f	85,120,403	8,789,541	10.3	1,618,717	18.4	7,475,171	85.0	304,347	3.5
Alabama*	1,146,498	547,892	47.8	24,099	4.4	545,992	99.7	22,199	4.1
Alaska	246,408	17,415	7.1	1,851	10.6	15,890	91.2	326	1.9
Arizona	2,197,249	152,540	6.9	23,912	15.7	134,166	88.0	5,538	3.6
Arkansas	1,034,807	56,438	5.5	24,423	43.3	33,330	59.1	1,315	2.3
California*	15,201,402	506,726	3.3	195,702	38.6	323,442	63.8	12,418	2.5
Colorado	1,480,172	104,642	7.1	15,429	14.7	91,890	87.8	2,677	2.6
Connecticut	1,098,768	87,886	8.0	27,598	31.4	67,116	76.4	6,828	7.8
Delaware	284,811	24,213	8.5	7,877	32.5	18,349	75.8	2,013	8.3
District of Columbia	275,321	60,816	22.1	5,103	8.4	57,203	94.1	1,490	2.5
Florida	4,891,445	251,018	5.1	76,330	30.4	182,832	72.8	8,144	3.2
Georgia	2,378,278	278,093	11.7	38,660	13.9	242,335	87.1	2,902	1.0
Hawaii	378,257	30,056	7.9	3,925	13.1	27,098	90.2	967	3.2
Idaho	324,367	36,056	11.1	5,126	14.2	32,126	89.1	1,196	3.3
Illinois	3,247,194	370,583	11.4	72,062	19.4	317,429	85.7	18,908	5.1
Indiana	1,718,639	106,457	6.2	45,095	42.4	66,746	62.7	5,384	5.1
Iowa	756,364	81,307	10.7	20,660	25.4	63,447	78.0	2,800	3.4
Kansas	447,133	70,337	15.7	14,429	20.5	57,267	81.4	1,359	1.9
Kentucky*	1,574,036	1,574,036	100.0	33,034	2.1	1,574,036	100.0	33,034	2.1
Louisiana	1,801,560	102,213	5.7	39,285	38.4	65,244	63.8	2,316	2.3
Maine	345,750	23,141	6.7	6,770	29.3	17,358	75.0	987	4.3
Maryland	1,475,291	206,773	14.0	26,474	12.8	186,074	90.0	5,775	2.8
Massachusetts*	2,012,568	197,740	9.8	52,492	26.5	156,804	79.3	11,556	5.8
Michigan	2,884,712	352,252	12.2	46,259	13.1	317,933	90.3	11,940	3.4

Table 5b (continued)

State	Medicaid beneficiaries ^a	Total LTSS		Institutional LTSS		HCBS		Both institutional LTSS and HCBS	
		Users ^b	% of Medicaid beneficiaries	Users ^c	% of LTSS users ^d	Users ^e	% of LTSS users	Users	% of LTSS users
Minnesota*	1,321,086	175,528	13.3	25,453	14.5	157,502	89.7	7,427	4.2
Mississippi	785,272	69,277	8.8	23,663	34.2	48,153	69.5	2,539	3.7
Missouri	1,158,719	173,611	15.0	36,663	21.1	140,660	81.0	3,712	2.1
Montana	303,294	19,001	6.3	4,972	26.2	14,780	77.8	751	4.0
Nebraska	279,341	24,803	8.9	10,282	41.5	15,693	63.3	1,172	4.7
Nevada	828,167	59,498	7.2	7,285	12.2	53,391	89.7	1,178	2.0
New Hampshire	234,097	25,943	11.1	6,516	25.1	20,302	78.3	875	3.4
New Jersey*	1,887,428	221,854	11.8	49,516	22.3	181,820	82.0	9,482	4.3
New Mexico	925,216	95,568	10.3	9,197	9.6	88,917	93.0	2,546	2.7
New York	7,107,910	1,043,336	14.7	153,276	14.7	933,461	89.5	43,401	4.2
North Carolina	2,385,363	162,749	6.8	45,434	27.9	121,656	74.8	4,341	2.7
North Dakota	118,051	17,473	14.8	5,086	29.1	13,020	74.5	633	3.6
Ohio	3,084,854	607,316	19.7	93,393	15.4	543,229	89.4	29,306	4.8
Oklahoma	891,717	77,415	8.7	24,593	31.8	56,074	72.4	3,252	4.2
Oregon	1,187,178	274,601	23.1	8,375	3.0	270,425	98.5	4,199	1.5
Pennsylvania	3,262,105	757,648	23.2	94,994	12.5	685,498	90.5	22,844	3.0
Rhode Island*	270,342	35,939	13.3	8,028	22.3	28,956	80.6	1,045	2.9
South Carolina	1,371,869	132,013	9.6	17,884	13.5	116,899	88.6	2,770	2.1
South Dakota	134,352	18,177	13.5	4,933	27.1	13,847	76.2	603	3.3
Tennessee	1,706,141	121,630	7.1	22,879	18.8	101,038	83.1	2,287	1.9
Texas	5,269,586	870,599	16.5	116,789	13.4	777,987	89.4	24,177	2.8
Utah*	401,797	71,614	17.8	6,293	8.8	66,440	92.8	1,119	1.6
Vermont*	190,932	122,952	64.4	2,796	2.3	120,960	98.4	804	0.7
Virginia	1,632,968	128,270	7.9	31,256	24.4	102,017	79.5	5,003	3.9
Washington	2,083,782	141,497	6.8	24,784	17.5	125,323	88.6	8,610	6.1

Table 5b (continued)

State	Medicaid beneficiaries ^a	Total LTSS		Institutional LTSS		HCBS		Both institutional LTSS and HCBS	
		Users ^b	% of Medicaid beneficiaries	Users ^c	% of LTSS users ^d	Users ^e	% of LTSS users	Users	% of LTSS users
West Virginia	620,370	92,469	14.9	13,571	14.7	81,029	87.6	2,131	2.3
Wisconsin	1,311,923	228,378	17.4	21,636	9.5	218,276	95.6	11,534	5.1
Wyoming	76,979	26,632	34.6	2,504	9.4	24,699	92.7	571	2.1

Source: Mathematica’s analysis of the 2019 LT, OT, and DE TAFs.

Note: This table shows the number and percentage of Medicaid beneficiaries who received any LTSS (either institutional services or HCBS), any institutional services, any HCBS, or both in 2019. The HCBS categories were defined based on LTSS expenditures report categories (Table 1).

Gray shading and an asterisk identify states with potential data quality issues. CMS’s assessment of the 2019 TAF data quality found some states with TAF data elements that are unusable or of high concern (CMS 2021[d]). Key state-specific data quality issues that might have impacted the accuracy of the user counts presented in this table: (1) Rhode Island’s LT file is of high concern because it has an unusually low number of line records per header claim; (2) Massachusetts, New Jersey, and Rhode Island’s OT files are of high concern because they have unusually high volumes of header claims compared with other states; (3) Minnesota’s OT file is of high concern because it has unusually high volume of non-denied line claims compared with other states; (4) California’s place-of-service code in the OT file is of high concern, and this could have impacted the identification of non-school-based state plan rehabilitative service users; and (5) Utah’s procedure code for professional services in the OT file is of high concern, and this could have impacted the identification of state plan personal care service users. Additional potential issues specific to service categories are listed in the footnotes below.

^a Medicaid beneficiaries include people with at least one month of Medicaid enrollment with any scope of benefits (full, comprehensive, or limited) in 2019 (CMS 2020[b]).

^b This is an unduplicated count of Medicaid beneficiaries who received either HCBS or institutional service in 2019.

^c This is an unduplicated count of Medicaid beneficiaries who received services from any of the following institutional settings in 2019: nursing facilities, ICF/IIDs, mental health facilities (including institutions for mental diseases for individuals ages 65 and older and inpatient psychiatric facilities for individuals younger than age 21).

^d Figure 1 uses these percentages. Kentucky, Vermont, and Alabama’s percentages likely reflect data errors because Kentucky reported all of its Medicaid beneficiaries as Health Homes program enrollees, and Vermont and Alabama reported nearly half of their Medicaid beneficiaries as Health Homes program enrollees.

^e This is an unduplicated count of Medicaid beneficiaries who received any of the following HCBS in 2019: section 1915(c) waiver program services, section 1915(i) HCBS state plan option services, section 1915(j) self-directed PAS, section 1915(k) Community First Choice option services, Health Homes program services, MFP services, PACE services, state plan personal care services (not covered through 1915(j)), state plan home health services, state plan non-school-based rehabilitative services, state plan case management services, or state plan private duty nursing services (see Tables 3a and 4a).

^f The U.S. counts exclude Alabama, Kentucky, and Vermont because these states had reporting errors for the Health Homes programs. Including these states results in 88,031,869 Medicaid beneficiaries; 11,034,421 total LTSS users; 1,678,646 institutional service users; 9,716,159 HCBS users; and 360,384 institutional and HCBS users.

DE = Demographic and Enrollment; HCBS = home and community-based services; ICF/IID = Intermediate Care Facilities for Individuals with Intellectual Disabilities; LT = Long-term Care; LTSS = long-term services and supports; MFP = Money Follows the Person; OT = Other Services; PACE = Program of All-Inclusive Care for the Elderly; PAS = personal assistance services; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

Table 5b. Medicaid LTSS user count balance based on ARP categories, 2019

State	Total LTSS			Institutional LTSS		HCBS		Both institutional LTSS and HCBS	
	Medicaid beneficiaries ^a	Users ^b	% of Medicaid beneficiaries	Users ^c	% of LTSS users ^d	Users ^e	% of LTSS users	Users	% of LTSS users
United States ^f	88,031,869	8,828,632	10.0	1,678,646	19.0	7,444,832	84.3	294,846	3.3
Alabama	1,146,498	99,286	8.7	24,099	24.3	77,778	78.3	2,591	2.6
Alaska	246,408	19,613	8.0	1,851	9.4	18,105	92.3	343	1.7
Arizona	2,197,249	157,193	7.2	23,912	15.2	138,555	88.1	5,274	3.4
Arkansas	1,034,807	56,430	5.5	24,423	43.3	33,311	59.0	1,304	2.3
California*	15,201,402	506,689	3.3	195,702	38.6	323,390	63.8	12,403	2.4
Colorado	1,480,172	104,651	7.1	15,429	14.7	91,899	87.8	2,677	2.6
Connecticut	1,098,768	87,812	8.0	27,598	31.4	66,796	76.1	6,582	7.5
Delaware	284,811	24,147	8.5	7,877	32.6	18,236	75.5	1,966	8.1
District of Columbia	275,321	17,451	6.3	5,103	29.2	12,819	73.5	471	2.7
Florida	4,891,445	251,013	5.1	76,330	30.4	182,827	72.8	8,144	3.2
Georgia	2,378,278	277,991	11.7	38,660	13.9	242,122	87.1	2,791	1.0
Hawaii	378,257	30,038	7.9	3,925	13.1	27,073	90.1	960	3.2
Idaho	324,367	36,055	11.1	5,126	14.2	32,089	89.0	1,160	3.2
Illinois	3,247,194	370,274	11.4	72,062	19.5	317,122	85.6	18,910	5.1
Indiana	1,718,639	106,390	6.2	45,095	42.4	66,614	62.6	5,319	5.0
Iowa	756,364	80,852	10.7	20,660	25.6	62,982	77.9	2,790	3.5
Kansas	447,133	70,136	15.7	14,429	20.6	57,050	81.3	1,343	1.9
Kentucky	1,574,036	69,898	4.4	33,034	47.3	38,557	55.2	1,693	2.4
Louisiana	1,801,560	101,657	5.6	39,285	38.6	64,625	63.6	2,253	2.2
Maine	345,750	23,132	6.7	6,770	29.3	17,346	75.0	984	4.3
Maryland	1,475,291	200,855	13.6	26,474	13.2	180,035	89.6	5,654	2.8
Massachusetts*	2,012,568	197,740	9.8	52,492	26.5	156,804	79.3	11,556	5.8
Michigan	2,884,712	343,988	11.9	46,259	13.4	309,351	89.9	11,622	3.4

Table 5b (continued)

State	Medicaid beneficiaries ^a	Total LTSS		Institutional LTSS		HCBS		Both institutional LTSS and HCBS	
		Users ^b	% of Medicaid beneficiaries	Users ^c	% of LTSS users ^d	Users ^e	% of LTSS users	Users	% of LTSS users
Minnesota*	1,321,086	207,288	15.7	25,453	12.3	189,273	91.3	7,438	3.6
Mississippi	785,272	69,274	8.8	23,663	34.2	48,144	69.5	2,533	3.7
Missouri	1,158,719	125,871	10.9	36,663	29.1	92,421	73.4	3,213	2.6
Montana	303,294	19,001	6.3	4,972	26.2	14,780	77.8	751	4.0
Nebraska	279,341	24,729	8.9	10,282	41.6	15,612	63.1	1,165	4.7
Nevada	828,167	61,934	7.5	7,285	11.8	55,827	90.1	1,178	1.9
New Hampshire	234,097	25,943	11.1	6,516	25.1	20,302	78.3	875	3.4
New Jersey*	1,887,428	221,845	11.8	49,516	22.3	181,801	81.9	9,472	4.3
New Mexico	925,216	92,163	10.0	9,197	10.0	85,368	92.6	2,402	2.6
New York	7,107,910	1,002,459	14.1	153,276	15.3	890,823	88.9	41,640	4.2
North Carolina	2,385,363	162,743	6.8	45,434	27.9	121,603	74.7	4,294	2.6
North Dakota	118,051	17,953	15.2	5,086	28.3	13,499	75.2	632	3.5
Ohio	3,084,854	614,110	19.9	93,393	15.2	546,334	89.0	25,617	4.2
Oklahoma	891,717	61,607	6.9	24,593	39.9	39,435	64.0	2,421	3.9
Oregon	1,187,178	275,453	23.2	8,375	3.0	271,234	98.5	4,156	1.5
Pennsylvania	3,262,105	757,179	23.2	94,994	12.5	684,935	90.5	22,750	3.0
Rhode Island*	270,342	35,057	13.0	8,028	22.9	27,971	79.8	942	2.7
South Carolina	1,371,869	132,007	9.6	17,884	13.5	116,887	88.5	2,764	2.1
South Dakota	134,352	11,634	8.7	4,933	42.4	7,158	61.5	457	3.9
Tennessee	1,706,141	122,897	7.2	22,879	18.6	102,305	83.2	2,287	1.9
Texas	5,269,586	870,527	16.5	116,789	13.4	776,212	89.2	22,474	2.6
Utah*	401,797	71,614	17.8	6,293	8.8	66,440	92.8	1,119	1.6
Vermont	190,932	15,911	8.3	2,796	17.6	13,820	86.9	705	4.4
Virginia	1,632,968	128,270	7.9	31,256	24.4	102,013	79.5	4,999	3.9
Washington	2,083,782	133,957	6.4	24,784	18.5	114,900	85.8	5,727	4.3

Table 5b (continued)

State	Total LTSS			Institutional LTSS		HCBS		Both institutional LTSS and HCBS	
	Medicaid beneficiaries ^a	Users ^b	% of Medicaid beneficiaries	Users ^c	% of LTSS users ^d	Users ^e	% of LTSS users	Users	% of LTSS users
West Virginia	620,370	92,232	14.9	13,571	14.7	80,786	87.6	2,125	2.3
Wisconsin	1,311,923	228,233	17.4	21,636	9.5	218,050	95.5	11,453	5.0
Wyoming	76,979	13,450	17.5	2,504	18.6	11,413	84.9	467	3.5

Source: Mathematica’s analysis of the 2019 LT, OT, and DE TAFs.

Note: This table shows the number and percentage of Medicaid beneficiaries who received any LTSS (either HCBS or institutional services), any HCBS, any institutional service, or both in 2019. The HCBS categories were defined based on section 9817 of the ARP (Table 1).

Gray shading and an asterisk identify states with potential data quality issues. CMS’s assessment of the 2019 TAF data quality found some states with TAF data elements that are unusable or of high concern (CMS 2021[d]). Key state-specific data quality issues that might have impacted the accuracy of the user counts presented in this table: (1) Rhode Island’s LT file is of high concern because it has an unusually low number of line records per header claim; (2) Massachusetts, New Jersey, and Rhode Island’s OT files are of high concern because they have unusually high volumes of header claims compared with other states; (3) Minnesota’s OT file is of high concern because it has unusually high volume of non-denied line claims compared with other states; (4) California’s place-of-service code in the OT file is of high concern, and this could have impacted the identification of state plan rehabilitative service users; and (5) Utah’s procedure code for professional services in the OT file is of high concern, and this could have impacted the identification of state plan personal care service users.

^a Medicaid beneficiaries include people with at least one month of Medicaid enrollment with any scope of benefits (full, comprehensive, or limited) in 2019 (CMS 2020[b]).

^b This is an unduplicated count of Medicaid beneficiaries who received either HCBS or institutional service in 2019.

^c This is an unduplicated count of Medicaid beneficiaries who received services from any of the following institutional settings in 2019: nursing facilities, ICF/IIDs, mental health facilities (including institutions for mental diseases for individuals ages 65 and older and inpatient psychiatric facilities for individuals younger than age 21).

^d Figure 2 uses these percentages.

^e This is an unduplicated count of Medicaid beneficiaries who received any of the following HCBS in 2019: section 1915(c) waiver program services, section 1915(i) HCBS state plan option services, section 1915(j) self-directed PAS, section 1915(k) Community First Choice option services, PACE services, state plan personal care services (not covered through 1915(j)), state plan home health services, state plan rehabilitative services, state plan case management services, or state plan private duty nursing services rendered in beneficiary’s home (see Tables 3b and 4b).

^f Unlike in Table 5a, the U.S. counts include Alabama, Kentucky, and Vermont because the Health Homes program is not in the ARP definition of HCBS. For comparison with Table 5a, excluding these states results in 85,120,403 Medicaid beneficiaries; 8,643,537 total LTSS users; 1,618,717 institutional service users; 7,314,677 HCBS users; and 289,857 institutional and HCBS users.

ARP = American Rescue Plan Act of 2021; DE = Demographic and Enrollment; HCBS = home and community-based services; ICF/IID = Intermediate Care Facilities for Individuals with Intellectual Disabilities; LT = Long-term Care; LTSS = long-term services and supports; MFP = Money Follows the Person; OT = Other Services; PACE = Program of All-Inclusive Care for the Elderly; PAS = personal assistance services; T-MSIS = Transformed Statistical Information System; TAF = T-MSIS Analytic File.

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Appendix A: User identification methodology

We used the 2019 Demographic and Enrollment (DE), Long-term Care (LT), and Other Services (OT) Transformed Medicaid Statistical Information System Analytic Files (TAF) to identify Medicaid beneficiaries who received long-term services and supports (LTSS). To identify Medicaid beneficiaries, we followed the approach that the Centers for Medicare & Medicaid Services (CMS) uses to assess the TAF data quality for Medicaid-only enrollment (CMS 2021[d]). We identified Medicaid beneficiaries by using the monthly Medicaid/Children’s Health Insurance Program code (CHIP_CD) in the DE file to select people with at least one month of Title XIX Medicaid enrollment in 2019. If CHIP_CD was missing in a month, we used the eligibility group code (ELGBLTY_GRP_CD) to identify people with Medicaid benefits. We did not restrict Medicaid beneficiaries based on the scope of Medicaid benefits (full, comprehensive, or limited benefits) because we aimed to identify all beneficiaries who could have used LTSS. We examined scope of benefits in a sensitivity analysis.

We restricted the OT and LT files to FFS or managed care encounters claims using the claim type code (CLM_TYPE_CD). We excluded all denied line claims using the claim line status code (CLL_STUS_CD) and claims that were partially covered by Medicare (“crossover claims”) using the crossover claim indicator (XOVR_IND).

To count Medicaid beneficiaries who used institutional LTSS, we used the type of service code (TOS_CD) in the LT file to categorize claims into institutional service categories. When TOS_CD was missing, we used the benefit type code (BNFT_TYPE_CD) to supplement identification. For the mental health facility service category, we included people who received services from institutions for mental diseases for people ages 65 and older or inpatient psychiatric facilities for people younger than age 21. The TOS_CD and BNFT_TYPE_CD have specific codes for each of these benefits. Some states also cover services for adults ages 21 to 64 in institutions for mental diseases through section 1115 demonstration authority. But because TOS_CD and BNFT_TYPE_CD do not include specific codes for these demonstration services, we were unable to separately identify adults ages 21 to 64 in institutions for mental diseases.

To count beneficiaries who received services covered under section 1915(c) waiver programs, section 1915(i) HCBS state plan option, section 1915(j) self-directed personal assistance service (PAS) option, section 1915(k) Community First Choice option, Health Homes program, Money Follows the Person demonstration, or the Program of All-Inclusive Care for the Elderly, we used program-specific data elements in the DE and OT files to identify beneficiaries with at least one month of program enrollment or one claim covered under these programs. In the OT file, we used the program type code (PGM_TYPE_CD) to categorize claims by Medicaid program type. If PGM_TYPE_CD was missing, we used the waiver type code (WVR_TYPE_CD) and the HCBS service code (HCBS_SRVC_CD). We used BNFT_TYPE_CD to identify Health Homes program and Program of All-Inclusive Care for the Elderly claims.

To count beneficiaries who received HCBS covered under state plan benefits, including personal care services (not covered under 1915(j)), home health services, rehabilitative services, case management services, and private duty nursing services, we restricted to claims that were not identified as program-based HCBS claims from above and used the procedure code (PRCDR_CD) to identify personal care service claims. We then used TOS_CD to categorize the remaining four service categories. If TOS_CD

was missing, we used BNFT_TYPE_CD to supplement the identification. We used the place of service code (POS_CD) to distinguish claims by service setting.

After calculating the user counts by state, we reviewed CMS’s assessment of the 2019 TAF data quality (CMS 2021[d]). We flagged any states with relevant data elements deemed “unusable” or of “high concern” in Tables 2-5b.

Table A.1 describes the data elements and relevant codes used in this analysis.

Table A.1. TAF data elements used to identify Medicaid beneficiaries who received LTSS

Data element	Description	TAF	Data element value used for analysis
CHIP_CD_01 – CHIP_CD_12	This code identifies people in Medicaid, Medicaid expansion CHIP, or separate CHIP in the month.	DE	<ul style="list-style-type: none"> Individual was Medicaid-eligible but was not included in either Medicaid Expansion CHIP or a separately Title XXI CHIP for the month (1)
ELGLBTY_GRP_CD	This code identifies the eligibility group applicable to the individual based the state’s eligibility determination process in the month.	DE	<ul style="list-style-type: none"> Codes 1–60, or 69–75 See TAF DE data dictionary for description of each code.
CLM_TYPE_CD	This code indicates the type of payment covered in this claim.	LT, OT	<ul style="list-style-type: none"> FFS Medicaid or Medicaid-expansion CHIP claims (1) Medicaid or Medicaid-expansion CHIP managed care encounter (3)
CLL_STUS_CD	This code identifies the status of a line claim.	LT, OT	<ul style="list-style-type: none"> Claim total denied charge amount (542) Denied charge or noncovered charge (585) Total denied charge amount (654)
XOVR_IND	This code indicates whether a claim is a crossover claim for which a portion is paid by Medicare.	LT, OT	<ul style="list-style-type: none"> Crossover claim (1)
TOS_CD	This code categorizes the service provided.	LT OT	<ul style="list-style-type: none"> Nursing facilities (009, 047, 059) ICF/IIDs (046) Mental health facilities (044, 045, 048) Home health (016–021, 064, 079) Rehabilitative services (043) Case management services (053, 062, 077) Private duty nursing services (022)
BNFT_TYPE_CD	This code identifies the benefit category for the service of the claim.	LT OT	<ul style="list-style-type: none"> Nursing facilities (006) ICF/IIDs (039) Mental health facilities (037, 038, 040) PACE (105) Health Homes (055) Home health (015–017, 022, 068, 076) Rehabilitative services (036) Case management services (042) Private duty nursing services (023, 069)

Data element	Description	TAF	Data element value used for analysis
PGM_TYPE_CD	This code indicates the special Medicaid program under which the service was provided.	OT	<ul style="list-style-type: none"> • Section 1915(c) waiver program (07) • 1915(i) – state plan HCBS (13) • 1915(j) – PAS (16) • 1915(k) – Community First Choice (11) • MFP demonstration (08)
WVR_TYPE_CD	This code specifies the waiver type under which the claim was submitted.	OT	<ul style="list-style-type: none"> • Section 1915(c) waiver program (06–20, 33)
HCBS_SRVC_CD	This code indicates that the service was HCBS for a beneficiary with chronic medical or mental conditions.	OT	<ul style="list-style-type: none"> • Section 1915(c) waiver program (4) • 1915(i) – state plan HCBS (1) • 1915(j) – PAS (2) • 1915(k) – Community First Choice (3)
PRCDR_CD	This code indicates the CPT or HCPCS code for the service or good rendered by the provider.	OT	<ul style="list-style-type: none"> • Personal care services (T1019, T1020, 99509, S5125, S5126)
POS_CD	This code indicates where the services took place.	OT	<ul style="list-style-type: none"> • School (03) • Prison/correctional facility (9) • Inpatient hospital (21) • Skilled nursing facility (31) • Nursing facility (32) • Custodial care facility (33) • Inpatient psychiatric facility (51) • ICF/IIDs (54) • Residential substance abuse treatment facility (55) • Psychiatric residential treatment center (56) • Comprehensive inpatient rehabilitation facility (61)
_1915C_WVR_TYPE	This code indicates the type of section 1915(c) waiver program under which the beneficiary received coverage; most recent in the calendar year.	DE	<ul style="list-style-type: none"> • Section 1915(c) waiver program (1)
_1915I_SPO_FLAG_01 - _1915I_SPO_FLAG_012 _1915J_SPO_FLAG_01 - _1915J_SPO_FLAG_12 CMNTY_1ST_CHS_ SPO_FLAG_01 - CMNTY_1ST_CHS_ SPO_FLAG_12	These monthly flags indicate whether the beneficiary received coverage through the 1915(i), 1915(j), or 1915(k) State Plan Options in the month.	DE	<ul style="list-style-type: none"> • 1915(i) – state plan HCBS (1 for any month) • 1915(j) – PAS (1 for any month) • 1915(k) – Community First Choice (1 for any month)
HH_PGM_PRTCNT_ FLAG_01 - HH_PGM_PRTCNT_ FLAG_12	These monthly flags indicate whether the beneficiary participated in the Health Home program in the month.	DE	<ul style="list-style-type: none"> • Health Homes (1 for any month)

Data element	Description	TAF	Data element value used for analysis
MFP_PRTCNT_FLAG_01 - MFP_PRTCNT_FLAG_12	These monthly flags indicate whether the beneficiary participated in the MFP program in the month.	DE	<ul style="list-style-type: none"> MFP demonstration (1 for any month)
MC_PLAN_TYPE_CD1_01 - MC_PLAN_TYPE_CD16_12	These flags indicate the managed care plan identification number under which the eligible beneficiary is enrolled in the month,	DE	<ul style="list-style-type: none"> PACE (17 for any month)

Source: TAF DE, OT, and LT Codebooks. The codebooks are publicly available on ResDAC’s TAF file data documentation webpage at <https://www.resdac.org/cms-data/files/taf-de/data-documentation>, <https://resdac.org/cms-data/files/taf-lt/data-documentation> and <https://resdac.org/cms-data/files/taf-ot/data-documentation>. Some of the data element names listed on ResDAC’s webpage have not been updated and might not match the data element names included in this table.

CHIP = Children’s Health Insurance Program; CPT = Current Procedural Terminology; DE = Demographic and Enrollment; FFS = fee-for-service; HCBS = home and community-based services; HCPCS = Healthcare Common Procedure Coding System; ICF/IID = Intermediate Care Facility for Individuals with Intellectual Disabilities; LT = Long-term Care; MFP = Money Follows the Person; OT = Other Services; PACE = Program of All-Inclusive Care for the Elderly; PAS = personal assistant services; ResDAC = Research Data Assistance Center; T-MSIS = Transformed Medicaid Statistical Information System; TAF = T-MSIS Analytic File.

Appendix B: Program-based home and community-based services user counts

For program-based home and community-based services (HCBS), such as section 1915(c) waiver programs, researchers can identify service users based on enrollment flags available in the Annual Demographic and Eligibility (DE) file or program indicators on claim records in the Other Services (OT) file. Although slight discrepancies between the two files could exist (for example, if an enrollee in a program did not require a service and therefore did not generate any claims), we expect the roster of users in both files to align considerably with one another. However, in our analysis, we found notable differences in user counts between the DE and OT files. Based on these findings, we report the number of program-based HCBS users identified in the OT file for all programs except for the Health Homes program and Program of All-Inclusive Care for Elderly (PACE). For these two programs, we report the user counts from the DE file because we did not identify any beneficiaries with relevant claims in the OT file.

Below, we note the differences between the DE and OT files by program (all numbers below include all states).

- **Section 1915(c) waiver programs.** In the DE file, we identified 4.9 million beneficiaries with enrollment flags for section 1915(c) waiver programs. This number is nearly three times as large as the number of beneficiaries who had section 1915(c) waiver program claims in the OT file (1.6 million beneficiaries) reported in Tables 3a and 3b. Based on Centers for Medicare & Medicaid Services (CMS) 372 Reports, which are data submissions required by CMS on section 1915(c) waiver program expenditures and participants for states that operate these programs, 1.8 million Medicaid beneficiaries participated in these waiver programs in 2018 (Ross et al. 2021). The large difference between the user counts from the DE file and the CMS 372 reports suggests that states overreported beneficiaries enrolled in section 1915(c) waiver programs in the DE file.
 - For Idaho, the opposite was true: the state reported 23,397 section 1915(c) waiver program enrollees in the DE file but no users in the OT file (that is, we did not identify any beneficiaries with section 1915(c) waiver program claims in the OT file).
 - Vermont did not operate any section 1915(c) waiver programs in 2019, but we identified 8,164 beneficiaries with section 1915(c) waiver program claims. Vermont provided benefits similar to the section 1915(c) waiver program services under their section 1115 demonstration. However, the state did not have any approved section 1915(c) waiver programs. The data elements used to identify the nearly 8,200 users were specifically for section 1915(c) waiver programs.
- **1915(i) HCBS state plan option.** We did not find any services users for some states with an active 1915(i) HCBS state plan option in fiscal year (FY) 2019. These states were California, Colorado, the District of Columbia, Iowa, and Texas (personal communication with CMS staff, February 2, 2021). Michigan also had an active 1915(i) HCBS state plan option, but the state only reported participants in the DE file (9,269 beneficiaries) and no claims for the 1915(i) HCBS state plan option in the OT file.
- **1915(j) Self-directed Personal Assistance Service option.** Only one state, South Carolina, reported 1915(j) beneficiaries in the DE file (6,600 beneficiaries). For other states that operated this option, we identified users only through claims in the OT file.

- **1915(k) Community First Choice option.** In the DE file, we identified nearly 14,000 beneficiaries enrolled in this option, but the number of users with at least one 1915(k) claim in the OT file was 62,207.
- **Health Homes programs.** We did not identify any Medicaid beneficiaries with claims in the OT file covered through the Health Homes programs. In contrast, we identified 2.8 million beneficiaries enrolled in the Health Homes program in the DE file. More than half of these beneficiaries (56.6 percent) were from Kentucky because Kentucky flagged all of its Medicaid beneficiaries as participating in the Health Homes program. Kentucky, however, did not operate an active Health Homes program in FY 2019 (personal communication with CMS staff, January 29, 2021). Vermont and Alabama reported nearly half of their Medicaid beneficiaries as Health Homes program enrollees (58.9 percent and 45.8 percent, respectively). Alabama terminated its Health Homes program on September 30, 2019 (personal communication with CMS staff, January 29, 2021). Many states that operated a Health Homes program in FY 2019 did not report participants in the DE file—for example, California, Connecticut, Minnesota, Ohio, Tennessee, and Wisconsin.
- **Money Follows the Person (MFP).** In the DE file, we identified 1.7 million Medicaid beneficiaries enrolled in the MFP program. Nearly all of these beneficiaries (99.4 percent) were from Indiana because Indiana flagged all of its Medicaid beneficiaries as participating in the MFP program. In the OT file, we identified 5,354 beneficiaries receiving services covered through MFP. We report the user count identified from the OT file in Tables 3a and 3b because it aligns more closely with 4,173 MFP transitions in 2019 reported through MFP grantees' semiannual progress reports (Liao and Peebles 2020). Consistent with our expectations, the number of MFP service users (5,354) is higher than the number of transitions in 2019 because our user count includes beneficiaries who transitioned before 2019 and continued to receive services through MFP until their 365 days of eligibility for MFP were exhausted.
- **PACE.** We did not identify any Medicaid beneficiaries with claims in the OT file covered through PACE. In the DE file, we identified 62,802 beneficiaries with enrollment flags for PACE, so we reported this number in Tables 3a and 3b.

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