IssueBrief

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Methodological Approaches for Analyzing Use and Spending in Medicaid Long-Term Services and Supports: A Comparative Review

Long-term services and supports (LTSS) refers to both home- and community-based services (HCBS) as well as institutional care. Medicaid is the primary payer of LTSS, covering nearly 59 percent of total LTSS expenditures nationally in federal fiscal year (FY) 2019 (Murray et al. 2021). LTSS encompasses a wide range of nonmedical services and supports for people who need help performing activities of daily living because of physical, cognitive, mental, or other disabilities and conditions. The services vary widely in type, intensity, and cost, depending on the recipient's health and functional status, the nature and severity of their disability, the setting in which they reside, and the availability of formal and informal supports. States may cover HCBS through an amendment to their state plan, but most states cover HCBS via Section 1915(c) waivers and Section 1115 demonstrations (MACPAC 2023).

While research exists on use and spending in Medicaid LTSS, there is relatively little research at a more granular level across various demographic characteristics, LTSS subpopulations, and HCBS taxonomy categories. MACPAC has work underway to address this gap in our knowledge of LTSS users. This forthcoming analysis is intended to establish a baseline of data from which to better understand differences in use and spending across LTSS subpopulations. However, before we can meaningfully analyze use and spending for LTSS users, we need a methodology to identify them in the administrative data. There is no standard method in identifying these services, which has resulted in researchers using different methodological approaches.

To contribute to the discussion of how to identify LTSS users, we set out to compare existing approaches to identify claims for HCBS and institutional care using the Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF). Using TAF for this purpose is not a straightforward process. Even though there are numerous variables that researchers could use to identify a claim as HCBS in TAF, variables may not be consistently reported or states may vary in how they code the claims (Greener et al. 2023; Peebles and Bohl 2013). Further, there are data quality issues. The Assistant Secretary for Planning and Evaluation (ASPE) and Data Quality (DQ) Atlas briefs found that the data element that states are supposed to populate in the TAF for the HCBS taxonomy category is unusable.[1] In particular, T-MSIS includes a data element (variable name: HCBS_TXNMY_CD) in which states could indicate the type of service on claims using the HCBS taxonomy code set, but this data element is not used by many states and is seen as unusable. Instead, individual claims for services must be identified separately to classify them into one of the taxonomy categories (Greener et al. 2023; Rooney et al. 2023). A variety of entities, including certain federal agencies, have started to use TAF data to analyze LTSS utilization and spending; however, each analysis employs a distinct methodological approach.

This issue brief compares and contrasts four approaches to identifying claims for HCBS and institutional LTSS: (1) Centers for Medicare & Medicaid Services (CMS) LTSS expenditure and user reports, (2) HCBS taxonomy work sponsored by the ASPE, (3) a DQ Atlas HCBS methodology brief, and (4) HCBS analyses performed by KFF.

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Overview of Analytic Approaches

Reports on use and spending vary in the timeframes analyzed and the type of LTSS, HCBS or institutional care, considered in the analysis. Below we provide an overview of each methodological approach.

CMS LTSS expenditure and user reports. CMS has historically released a series of reports that contain detailed information about Medicaid LTSS at the national and state levels by service category (e.g., Section 1915 authorities, state plan benefits, etc.), type of LTSS, and payment model (fee-for-service or managed care) (Murray et al. 2023). Through FY 2020, these reports relied on Medicaid CMS-64 expenditure data, state-reported managed LTSS expenditures, Money Follows the Person (MFP) worksheets for proposed budgets, and CMS 372 report data for classifying expenditures into LTSS subpopulations. The first LTSS report to rely on TAF data was published in 2022 (Kim et al. 2022); the analysis used calendar year 2019 TAF data to identify LTSS users in institutional LTSS categories and HCBS categories aligned with the Section 9817 of the American Rescue Plan Act of 2021 (ARPA, P.L. 117-2).

All subsequent LTSS expenditure and user reports will use only TAF data to produce output on HCBS and institutional care expenditures, as well as user counts and user characteristics; the forthcoming reports will rely on TAF data for calendar years 2019 through 2021 (Wysocki et al. 2023).

ASPE issue brief. The HCBS taxonomy was developed for use with enrollment and claims data from the Medicaid Analytic eXtract (MAX), which are the research files based on the data collection system CMS used before T-MSIS. To support research analyzing Medicaid-funded HCBS use by type of service across states, ASPE and Mathematica authored an issue brief that assessed whether a modified version of an HCBS taxonomy could be used to identify and classify HCBS claims from 2016 through 2020 submitted to T-MSIS. The issue brief describes methods to identify and classify HCBS claims by type of service using a taxonomy of 20 service categories, including 3 additional HCBS taxonomy categories that are subsets of some of the original 17 taxonomy categories (Rooney et al. 2023). The MAX HCBS taxonomy focused on fee-for-service claims for HCBS delivered through Section 1915(c) waiver programs. The ASPE brief expands on the MAX HCBS taxonomy by including claims from:

- other HCBS authorities in addition to Section 1915(c), including Section 1915(i), (j), (k) and 1115 authorities, MFP, Program of All-Inclusive Care for the Elderly (PACE), and Health Homes Program;
- state plan claims that are not covered by an HCBS authority listed above, such as services delivered under Section 1905(a) authority; and
- managed care plans that provide any HCBS.

The ASPE issue brief is focused on HCBS and does not discuss institutional care (Rooney et al. 2023).

DQ Atlas HCBS methodology brief. Expanding on the ASPE work and the CMS LTSS expenditure and user reports, the DQ Atlas methodology brief explains: (a) how to identify claims for HCBS categories in the TAF; (b) how to distinguish between HCBS provided by a Medicaid program (Section 1915 and 1115 HCBS authorities) versus a state plan benefit (claims for HCBS that are not covered by Section 1915 or 1115 HCBS authorities); and (c) how to classify enrollment in specific Medicaid HCBS programs (Greener et al. 2023).[2] The strategy used by the DQ Atlas methodology to identify claims for services is largely identical to the ASPE HCBS taxonomy, however it does not include all of the categories in the ASPE brief – it excludes other HCBS, other health and therapeutic services, other mental health, and behavioral health services, and rent for live-in caregivers (Greener et al. 2023). To assign claims to a specific HCBS authority, the DQ Atlas HCBS methodology leverages the same hierarchical approach as the CMS LTSS expenditure and user reports and identifies ways eligibility information could be used to supplement claims data.

KFF State Health Facts. The KFF methodology uses the 2020 TAF data to tabulate how many people use Medicaid LTSS and how much Medicaid spends on HCBS and institutional LTSS (Chidambaram and Burns 2023). The approach includes several mechanisms to identify HCBS users, such as Section 1915(c) waiver enrollment, a combination of Section 1115 demonstration enrollment and confirmation of HCBS delivered through an 1115 demonstration in the beneficiaries' state of residence, and—for those not enrolled in a Section 1915(c) or 1115 authority—claims data indicating use of home health services, personal care services, or other HCBS (Chidambaram and Burns 2023).

Key Differences Between Analytic Approaches

Reports on use or spending also vary based on inclusion and exclusion criteria considered in the analysis. The four reports and briefs have several key differences, summarized in Table 1. Both the CMS LTSS and KFF reports examine expenditures and user counts for HCBS and institutional LTSS, while the ASPE and DQ Atlas briefs provide a methodological approach for identifying HCBS but do not contain any statistics on use or spending. These differences, including the definition of LTSS, lead to differences in the count of users in each analysis (Chidambaram and Burns 2023; Kim et al. 2022).

The analytic approaches differ in whether they included institutional care as part of the analysis. Among the two reports that did, there is variation in the types of institutional settings considered. Both the CMS LTSS and KFF reports included nursing facilities and intermediate care facilities for individuals with intellectual disabilities (ICF/IIDs). However, the CMS LTSS report employs a broader definition of institutional care by including a more expansive definition for mental health facilities (i.e., IMDs for individuals age 65 and older, as well as inpatient psychiatric facilities for those under age 21) while the KFF report only includes nursing facility services for individuals 65 and older in IMDs (Chidambaram and Burns 2023; Murray et al. 2023).

There are key differences between the analytic approaches in how HCBS is defined. For example, the CMS LTSS reports and DQ Atlas methodology identify a broad range of HCBS authorities (Section 1915(c), 1915(i), 1915(j), 1915(k), PACE, and Section 1905(a) state plan HCBS), with the DQ Atlas also including Health Home Programs (Rooney et al. 2023; Wysocki et al. 2023). The ASPE brief classified a claim as HCBS if the claim was associated with a certain TAF data element (e.g., HCBS service code, program type, or benefit type). The TAF data elements are linked to a range of HCBS authorities and programs, such as all Section 1915 authorities, 1115 demonstrations, PACE, MFP, and Health Home Services (Rooney et al. 2023). The KFF approach only considers Section 1915(c) authority, 1115 demonstrations, and state plan HCBS (Chidambaram and Burns 2023).

The CMS LTSS reports examine HCBS data at the authority or program level, such as Section 1915 authorities, Section 1905(a) state plan benefits (e.g., personal care services), and PACE (Wysocki et al. 2023). The KFF report similarly considers HCBS at the authority level and examines some LTSS state plan service types (Chidambaram and Burns 2023). The report also captures "other HCBS" which is determined using type of service codes on claims for people who were not accessing HCBS through a Section 1915(c) or 1115 authority. The "other HCBS" category may also include individuals accessing HCBS through a state plan authority or other 1915 authorities. Further, the KFF LTSS approach only counts a subset of home health (top 50 percent) and personal care (top 75 percent) users in their final tally in order to align counts for those categories with their own survey data from previous years (Chidambaram and Burns 2023).

The ASPE and DQ Atlas briefs examine HCBS at the service level, by utilizing the HCBS taxonomy categories (Greener et al. 2023; Rooney et al. 2023). Some services (e.g., home-delivered meals) are traditionally considered HCBS in both approaches and are categorized as such. For other services, as demonstrated in Table 1, they are only considered HCBS if they were paid by an HCBS authority, such as Sections 1915(c), 1915(i), 1915(j), and 1915(k) authorities, Section 1115 HCBS demonstrations, state plan benefits, Health Home Services, MFP demonstrations, or PACE.

TABLE 1. Key Differences Between the Four Methodological Approaches to Identifying LTSS Utilization and Expenditures

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
Utilization	Yes	Yes	Yes	Yes
Expenditures	Yes	No	No	Yes
Inclusion criteria	All people with at least one month of Medicaid enrollment	All people with at least one month of Medicaid enrollment	All people with at least one month of Medicaid enrollment	All people with at least one month of Medicaid enrollment
HCBS definition and reporting level	Categories that align with those defined in section 9817 of the American Rescue Plan Act of 2021: • Section 1915(c) waiver authorities • Section 1915(i) HCBS state plan option • Section 1915(j) self-directed personal assistance services • Section 1915(k) Community First Choice • MFP demonstration[1] • PACE • State plan personal care services • State plan home health services • State plan rehabilitative services • State plan case management services • State plan private duty nursing services	Categories assumed to be HCBS regardless of program or authority: • Community transition services • Home-delivered meals • Rent for live-in caregiver • Services supporting self-direction • Supported employment services Categories required to be paid by a program offering HCBS[2]: • Caregiver support • Case management • Day services • Equipment, technology, and modifications • Home-based services • Non-medical transportation • Nursing • Other HCBS • Other health and therapeutic services • Other mental health and behavioral health services • Participant training • Round-the-clock services	Categories assumed to be HCBS regardless of program or authority: • Community transition services • Home-delivered meals • Services supporting participant-directed services • Supported employment services Categories required to be paid by a program offering HCBS[2]: • Caregiver support • Case management • Day services • Technical modifications or equipment • Home-based services • Non-medical transportation • Nursing • Participant training • Round-the-clock services	• Section 1915(c) waiver programs • Personal care services for people not enrolled in a section 1915(c) waiver or section 1115 HCBS demonstration • Home health services for people not enrolled in a section 1915(c) waiver or section 1115 HCBS demonstration • Section 1115 HCBS demonstration • Other HCBS based on type of service codes for people who were not enrolled in either a section 1915(c) waiver or section 1115 HCBS demonstration[3]

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
Institutional LTSS definition	• Nursing facilities • ICF/IIDs • Mental health facilities[4] • DSH payments to mental health facilities	N/A	N/A	• Care provided in a nursing facility (Nursing facility services for individuals aged 21 or older (other than services in an IMD)) • Nursing facility services for individuals aged 65 or older in IMDs • Nursing facility services, other than in IMDs • Skilled nursing facility services for individuals under age 21 or ICF • ICF and ICF/IIDs

Notes: DSH is disproportionate share hospital. ICF/IIDs is intermediate care facilities for individuals with intellectual disabilities. MFP is Money Follows the Person. PACE is Program of All-Inclusive Care for the Elderly. N/A is not applicable. IMD is institutions for mental diseases. LTSS is long-term services and supports. CMS is Centers for Medicare & Medicaid Services. ASPE is Assistant Secretary for Planning and Evaluation. DQ is Data Quality.

[1] The CMS LTSS reports calculate MFP separately and do not include it in any aggregate LTSS or HCBS calculations.

[2] For these service categories, the claim was considered HCBS only when paid by an HCBS authority, such as section 1915(c), 1915(i), 1915(j), 1915(k) authorities, section 1115 HCBS demonstrations, Health Home Services, Money Follows the Person (MFP) demonstrations, or Program for All-inclusive Care for the Elderly (PACE). For the ASPE issue brief in particular, categories may be required to be paid for by a program offering HCBS when national procedure codes are used but is not a requirement for state-specific procedure codes (Rooney et al. 2023).

[3]This includes case management, homemaker services, adult day health services, habilitation services, respite care services, daycare, day treatment or other partial hospitalization services, training for family members, home modifications, other services requested by the agency and approved by CMS as cost effective and necessary to avoid institutionalization, expanded habilitation services, and other medical and social services, payments to individuals for personal assistance services under 1915(j) home health services.

[4]The CMS LTSS reports define mental health facilities as (1) institutions for mental disease for people ages 65 and older and (2) inpatient psychiatric facilities for people younger than 21.

Sources: Chidambaram and Burns 2023, Greener et al. 2023, Rooney et al. 2023, Wysocki et al. 2023, Kim et al. 2022.

The TAF includes all Medicaid eligibility and claims information and a number of files that can be leveraged for analysis, including the TAF Demographics and Eligibility (DE) file, Other Services (OT) file, Inpatient (IP) file, and Long-Term Care (LT) file.[3] The CMS LTSS reports use the OT files. The DQ Atlas approach illustrates how a user may identify HCBS program enrollment via program enrollment data in the DE and/or claims in the OT file (Greener et al. 2023). Specifically, the DE file may be used to identify the months in which a person was enrolled in Section 1915(c), 1915(i), 1915(j), 1915(k), PACE, and MFP. The OT claims file, on the other hand, includes a number of data elements that can be leveraged to identify the Medicaid authority under which a service is covered (such as program type and waiver type codes) and/or the type of HCBS (such as procedure, benefit, and type of service codes) (Greener et al. 2023). Although the approaches to identifying specific HCBS reporting levels overlap across some of the aforementioned methodologies, there are key differences in the resulting populations

based on type of code used for the analysis. These data codes include the following (Greener et al. 2023; ResDAC 2022; Christensen et al. 2020):

- **Program type code.** Identifies if a service was offered under a particular type of Medicaid program (e.g., MFP)
- **Waiver type code.** Indicates the type of waiver that a person is eligible for services (e.g., Section 1915(c) waiver)
- **Benefit type code.** Identifies the benefit category associated to the service reported on the claim or encounter record.
- **Type of service code.** Categorizes services (e.g., nursing facility services, HCBS-personal care services, etc.) available to Medicaid or CHIP enrollees.
- **HCBS service code.** Identifies which authority (i.e., Section 1915 or 1115) HCBS was provided under, or if HCBS was made available outside of those authorities and was of an acute or long term care nature.
- **Procedure code.** Includes types of codes like Healthcare Common Procedure Coding System (HCPCS), ICD-10 Procedure Coding System (ICD-10-PCS), Current Procedural Terminology (CPT), and state-specific billing codes, which identify a service received by an enrollee. Procedure codes are considered a reliable approach to determine claims for particular services.
- **Place of service.** Identifies the location (e.g., home, assisted living facility, nursing facility, etc.) where a service was received.

Table 2 provides a detailed comparison of the combinations of data elements used in each of the four methodological approaches to identify the Medicaid HCBS authority, LTSS setting, and HCBS type. To account for conflicting or missing data, a common method to identify HCBS claims is to implement a hierarchical approach for the available, relevant data elements (Greener et al. 2023). Some approaches require several qualifiers to identify an HCBS reporting level. For example, for those services that are commonly understood to be HCBS, such as home-delivered meals or supported employment, both the ASPE and DQ Atlas briefs rely on procedure codes to identify the service. There are instances where relying on procedure codes to determine if a service is considered HCBS is insufficient and having additional information on the place of service would verify the nature of the service. For example, case management and physical or occupational therapy may not be considered HCBS unless they are provided in an individual's house or the community (Greener et al. 2023). As a result, coupling codes may be necessary in certain instances, such as when using national procedure codes, to identify HCBS. In Table 2, for caregiver support, both approaches leverage procedure codes and require that some services be paid for by an HCBS authority given that claims for family training and counseling for child development, which are not always HCBS, must be paid for by an HCBS authority to be considered HCBS.

TABLE 2. Detailed Differences in Settings and HCBS Reporting Levels

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
Institutional level				
Nursing facilities	Leverages type of service or benefit type code.	–	–	Leverages type of service codes.
ICF/IID	Leverages type of service or benefit type code.	–	–	Leverages type of service codes.
Mental health facilities	Leverages type of service or benefit type code.	–	–	–

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
HCBS authority				
Section 1915(c) waiver programs	Uses a hierarchical approach that includes program type, waiver type, and benefit type codes found on claims.	–[1]	Uses a hierarchical approach that includes program type, waiver type, and benefit type codes found on claims. Users may supplement it with information in the DE file.	If enrollees have at least one month of 1915(c) enrollment in the DE file.
Section 1915(i) HCBS state plan option	Uses a hierarchical approach that includes program type and HCBS service codes found on claims.	–[1]	Uses a hierarchical approach that includes program type, waiver type, and benefit type codes found on claims. Users may supplement it with information in the DE file.	–
Section 1915(j) self-directed personal assistance services	Uses a hierarchical approach that includes program type, HCBS service, and benefit type codes found on claims.	–[1]	Uses a hierarchical approach that includes program type, waiver type, and benefit type codes found on claims. Users may supplement it with information in the DE file.	–
Section 1915(k) Community First Choice	Uses a hierarchical approach that includes program type, HCBS service, and benefit type codes found on claims.	–[1]	Uses a hierarchical approach that includes program type, waiver type, and benefit type codes found on claims. Users may supplement it with information in the DE file.	–
MFP demonstration	Uses program type = 08 found on claims.	–[1]	Uses a hierarchical approach that includes program type = 08 found on claims, and MFP indicator in the DE file	–
Program of All-Inclusive Care for the Elderly	Uses enrollment records where managed care plan type code = 17.	-[1]	Uses enrollment records where managed care plan type code = 17.	–
Section 1115 HCBS	–	–[1]	–[1]	If enrollees used home health, personal care, or other HCBS; and were enrolled in a Section1115 demonstration (waiver

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
				type code equal to 01 or 29) and lived in a state that provided HCBS through an 1115 waiver, they were classified as using 1115 waiver services.[2]
HCBS service taxonomy				
Caregiver support	–	Leverages procedure codes, and requires some services be paid for by an HCBS authority. Claims for family training and counseling for child development which are not always HCBS, must be paid for by an HCBS authority in order to be considered HCBS.	Leverages procedure codes, and requires some services be paid for by an HCBS authority. Claims for family training and counseling for child development which are not always HCBS, must be paid for by an HCBS authority in order to be considered HCBS.	–
Case management	State plan case management services. Claims for state plan case management are not identified as being paid for by an HCBS authority; the identification strategy leverages type of service or benefit type codes to be consistent with Section 9817 of the ARPA of 2021.	Leverages procedure and type of service codes, and requires that all services be paid for by an HCBS authority.	Leverages procedure and type of service codes, and requires that all services be paid for by an HCBS authority.	–
Community transition services	–	Leverages procedure codes.	Leverages procedure codes.	–
Day services	–	Leverages procedure and type of service codes, and requires that some services be paid for by an HCBS authority. Partial hospitalization treatment, behavioral health day treatment, and mental health clubhouse services which are not always HCBS, must be paid for	Leverages procedure and type of service codes, and requires that some services be paid for by an HCBS authority. Partial hospitalization treatment, behavioral health day treatment, and mental health clubhouse services which are not always HCBS, must be paid	–

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
		by an HCBS authority in order to be considered HCBS.	for by an HCBS authority in order to be considered HCBS.	
Equipment, technology, and modifications	–	Leverages procedure codes and requires that all services be paid for by an HCBS authority.	Leverages procedure codes and requires that all services be paid for by an HCBS authority.	–
Home-based services	–	Uses a hierarchical approach that includes type of service and procedure codes and requires that some services be paid for by an HCBS authority (such as physical or occupational therapy provided in a home setting, as these services are not always considered HCBS). Home health services are considered a subset of home-based services.	Uses a hierarchical approach that includes type of service and procedure codes and requires that some services be paid for by an HCBS authority (such as physical or occupational therapy provided in a home setting, as these services are not always considered HCBS). Home health services are considered a subset of home-based services.	–
Home-delivered meals	–	Leverages procedure codes.	Leverages procedure codes.	–
Home health	State plan home health services. Claims for state plan home health services are not identified as being paid for by an HCBS authority to be consistent with Section 9817 of the ARPA of 2021. The identification strategy leverages type of service or benefit type codes.	Uses a hierarchical approach that includes type of service and procedure codes and requires that some services be paid for by an HCBS authority (such as those services that are not always considered HCBS). Considered a subset of round-the-clock or home-based services.	Uses a hierarchical approach that includes type of service and procedure codes and requires that some services be paid for by an HCBS authority (such as those services that are not always considered HCBS). Considered a subset of home-based services.	Restricts to enrollees who used HCBS but were not enrolled in a 1915(c) or 1115 waiver and leverages type of service codes Counts only the enrollees with the top 50% of home health claims in each state as people who used home health.
Non-medical transportation	–	Leverages procedure and type of service codes and requires that all services be paid for by an HCBS authority.	Leverages procedure and type of service codes and requires that all services be paid for by an HCBS authority.	–
Private duty nursing services	Claim is not identified as an HCBS authority-based	Uses a hierarchical approach that includes	Uses a hierarchical approach that includes	–

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
	claim. Leverages type of service code 022, or type of service code is missing and leverages benefit type code 023 or 069. Excludes the following settings: • prisons/correctional facilities • inpatient hospitals • skilled nursing facilities • nursing facilities • custodial care facilities • inpatient psychiatric facilities • ICF/IIDs • residential substance abuse treatment facilities • psychiatric residential treatment centers • comprehensive inpatient rehabilitation facilities	type of service, place of service, and procedure codes, and requires that some services be paid for by an HCBS authority. (Nursing services delivered in a home-based setting are not always considered HCBS.) More broadly classified as nursing services.	type of service, place of service, and procedure codes, and requires that some services be paid for by an HCBS authority. (Nursing services delivered in a home-based setting are not always considered HCBS.) More broadly classified as nursing services.	
Rehabilitative services	Claim is not identified as an HCBS authority-based claim. Leverages type of service code 043 or type of service is missing and leverages benefit type code 036. Excludes the following settings: • prisons/correctional facilities • inpatient hospitals • skilled nursing facilities • nursing facilities • custodial care facilities • inpatient psychiatric facilities • ICF/IIDs • residential substance abuse treatment facilities	–	–	–[3]

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
	• psychiatric residential treatment centers • comprehensive inpatient rehabilitation facilities			
Other health and therapeutic services	–	Leverages procedure and place of service codes and requires that all services be paid for by an HCBS authority.	–	–[3]
Other mental health and behavioral services	–	Leverages procedure codes and requires that some services be paid for by an HCBS authority. Procedure codes with descriptions explicitly stating a community-based setting do not require an HCBS authority restriction.	–	–
Participant training	–	Leverages procedure and place of service codes and requires that all services be paid for by an HCBS authority.	Leverages procedure and place of service codes and requires that all services be paid for by an HCBS authority.	–
Personal care services	Claim is not identified as a program-based claim and leverages procedure codes T1019, T1020, 99509, S5125, or S5126.	Leverages procedure codes T1019, T1020, 99509, S5125, or S5126. Considered a subset of round-the-clock or home-based services.	Leverages procedure codes T1019, T1020, 99509, S5125, or S5126.	Leverages type of service codes. Counts only enrollees with the top 75% of personal care claims as people who used personal care in each state.
School-based personal care services	–	Identifies personal care services with a place of service code = 03 (School). Considered a subset of round-the-clock or home-based services.	–	–
Rent and food expenses for live-in caregiver	–	Leverages state-specific procedure codes.	–	–
Round-the-clock services	–	Leverages procedure, type of service, and	Leverages procedure, type of service, and	–

	CMS LTSS expenditure and user reports	ASPE issue brief	DQ Atlas HCBS methodology brief	KFF State Health Facts
		place of service codes, and requires that all services be paid for by an HCBS authority.	place of service codes, and requires that all services be paid for by an HCBS authority.	
Services supporting participant direction	–	Leverages procedure codes.	Leverages procedure codes.	–[3]
Supported employment	–	Leverages procedure codes.	Leverages procedure codes.	–
Other HCBS	–	Leverages procedure codes and requires that all services be paid for by an HCBS authority to identify: • Goods and services • Interpreter • Housing consultation • Other	–	Type of service codes for[4]: • Case management • Homemaker services • Adult day health services • Habilitation services • Respite care services • Daycare, day treatment or other partial hospitalization services • Training for family members • Home modifications • Other services requested by the agency and approved by CMS as cost effective and necessary to avoid institutionalization • Expanded habilitation services • Other medical and social services • Payments to individuals for personal assistance services under 1915(j)

Notes: ICF/IIDs is intermediate care facilities for individuals with intellectual disabilities. MFP is Money Follows the Person. DE is Demographics and Eligibility. LTSS is long-term services and supports. CMS is Centers for Medicare & Medicaid Services. ASPE is Assistant Secretary for Planning and Evaluation. DQ is Data Quality. HCBS is home- and community-based services.

The ASPE brief and DQ Atlas methodology do not specifically call out rehabilitative services, however they are included as home health services. The CMS LTSS reports identify users and spending by both HCBS authority and selected service categories. Some services will be captured under the relevant HCBS authority if they are covered by a state, even if that category is not identified separately. For example, if a state's Section 1915(c) waivers cover caregiver support, those services are captured under total Section 1915 (c) expenditures even though caregiver support is not identified separately.

– Dash indicates that data are not available.

[1] The ASPE brief and DQ Atlas impose restrictions on claims for certain services, requiring that they be paid for by an HCBS authority such as Section 1915(c), 1915(i), 1915(j), 1915(k), PACE, MFP or HHP in order to be considered HCBS. For the ASPE issue brief in particular, categories may be required to be paid for by a program offering HCBS when national procedure codes are used in order to be considered HCBS but this is not a requirement for state-specific procedure codes (Rooney et al. 2023)

[2] According to KFF, from 2018-2020, the following states provided HCBS through a Section 1115 demonstration: AZ, AR, CA, DE, HI, KS, MD, MN, NJ, NM, NY, RI, TN, TX, VT, and WA.

[3] A limited number of types of service codes captured this service in the "other HCBS" category.

[4] KFF compared their results to older HCBS surveys they conducted from 2018 and 2020 and identified discrepancies which suggest that the "other HCBS" category likely includes enrollees using HCBS through a Section 1915 state plan authority and some enrollees using HCBS through a waiver in states that did not populate Section 1915(c) waiver information in the DE file.

Sources: Chidambaram and Burns 2023, Greener et al. 2023, Wysocki et al. 2023, Rooney et al. 2023, Kim et al. 2022.

Considerations

TAF users have leveraged different methodological approaches to analyze LTSS use and expenditures, as discussed in this issue brief. Researchers interested in using TAF data need to consider how they will define LTSS, the HCBS reporting level, a decision on a hierarchical approach to apply when considering multiple data elements due to conflicting or missing data, and other inclusion as well as exclusion criteria, as needed.

Endnotes

[1] To support research analyzing Medicaid-funded HCBS use by type of service across states, the ASPE issue brief assessed whether a modified version of an HCBS taxonomy developed for use with Medicaid Analytic eXtract enrollment and claims data (the data collection system CMS used before T-MSIS) could be used to identify and classify HCBS claims submitted to T-MSIS (Rooney et al. 2023). Expanding on the ASPE HCBS taxonomy work and the CMS LTSS Expenditure and User Reports, the DQ Atlas HCBS methodology brief explains how to identify claims for HCBS categories, discern between HCBS provided by a Medicaid program versus a state plan benefit, as well as how to identify enrollment in specific Medicaid HCBS programs (Greener et al. 2023).

[2] State plan benefits include services provided under Section 1905(a), which could include case management, home health services, private duty nursing, rehabilitative services, and personal care services.

[3] The TAF RIF is the version of the TAF files that is publicly available to researchers. Some TAF data elements are suppressed, changed, or renamed. For example, the TAF RIF masks proprietary information about the amounts paid by managed care plans to providers.

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