

Federal Survey Sample Size Analysis: Disability, Language, and Sexual Orientation and Gender Identity

Report

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Medicaid and CHIP Payment and Access Commission

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The findings, statements, and views expressed in this report are those of the authors and do not necessarily reflect those of MACPAC

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1. INTRODUCTION

The Medicaid and CHIP Payment and Access Commission (MACPAC) routinely conducts original analysis of federal survey data tailored to understand Medicaid policy issues. A critical part of these analyses is the ability to leverage federal survey data sources to produce estimates of health care access, use, and outcomes, for key subpopulations that frequently experience health inequities.

MACPAC has published on the limitations of survey and administrative data to provide meaningful estimates of health care outcomes by race and ethnicity, and recommended updating the model single, streamlined application race and ethnicity questions and developing model training materials to encourage responses and improve data.¹ MACPAC is also interested in the quality and availability of data for other populations facing health inequities, including people with disabilities, language access needs, and people who indicate their sexual orientation or gender identity (SOGI).

To better understand the availability of data and sample sizes for these groups, MACPAC contracted with the State Health Access Data Assistance Center (SHADAC) to conduct an assessment across 13 federal surveys. This report summarizes the findings (Table 1).

We considered sample sizes of 50 or more to be sufficient to support analysis for a given subpopulation. As the table demonstrates, most of the surveys include questions related to functional disability and support analysis for Medicaid. There are fewer surveys that support analysis for individuals with serious mental illness (SMI) and only one that supports analysis of individuals with intellectual disabilities in Medicaid. Five surveys have a sufficient sample size to support analysis for people who speak a language other than English at home (primary language) and four have a sufficient sample size for people in Medicaid who report limited English proficiency (speaking English not well or not at all). Four surveys support analysis for individuals who report being lesbian, gay, or bisexual, two surveys ask about gender identity, and one supports analysis for people in Medicaid who report being transgender or gender non-conforming or non-binary.

TABLE 1. Federal Surveys' Sample Size Sufficiency for Medicaid Populations

Federal Survey	Disability Type: Functional	Disability Type: Intellectual	Disability Type: Serious mental illness (SMI)	Primary Language: Not English	Spoken English Proficiency: Not well or Not At All	Sexual Orientation: Lesbian or Gay	Sexual Orientation: Bisexual	Gender Identity: Trans-gender	Gender Identity: Gender Non-Conforming or Non-Binary
ACS	✓	-	-	✓	✓	-	-	-	-
BRFSS	✓	-	-	-	-	✓	✓	✓	✓
CPS	✓	-	-	-	-	-	-	-	-
HPS	-	-	✓	-	-	✓	✓	X	-
MEPS-HC	✓	-	✓	✓	✓	-	-	-	-
MCBS	✓	NA	NA	NA	NA	-	-	-	-
NAMCAHPS	✓	-	-	-	-	-	-	-	-
NHANES	✓	-	✓	✓	-	NA	-	-	-
NHIS	-	X	✓	-	-	✓	✓	-	-
NSCH	-	✓	-	✓	-	-	-	-	-
NSDUH	-	-	✓	-	✓	✓	✓	-	-
PRAMS	-	-	-	-	-	-	-	-	-
SIPP	✓	-	-	✓	✓	-	-	-	-

Notes: ACS is American Community Survey. BRFSS is Behavioral Risk Factor Surveillance System. CPS is Current Population Survey. HPS is Household Pulse Survey. MEPS-HC is Medical Expenditure Panel Survey-Household Component. MCBS is Medicare Current Beneficiary Survey. NAMCAHPS is Nationwide Adult Medicaid Consumer Assessment of Healthcare Providers & Systems. NHANES is National Health and Nutrition Examination Survey. NHIS is National Health Interview Survey. NSCH is National Survey of Children’s Health. NSDUH is National Survey on Drug Use and Health. PRAMS is Pregnancy Risk Assessment Monitoring System. SIPP is Survey of Income and Program Participation.

✓ Sufficient Medicaid sample size.

X Medicaid sample size not sufficient.

- Not asked.

NA Not available because question included in restricted file; analysis limited to public use data.

Source: SHADAC review of federal surveys.

The content and sample size reported here may change in the future. Survey content and sampling strategies often change to accommodate shifting priorities and budgets. Some analyses that appear feasible with the current data may not be in future years, and areas where sample size seems too limited now may be sufficient in the future. In addition, although a survey may have enough sample size (50 cases or more) to report on a given subpopulation, the ability to further stratify measures may be limited. For example, there may be enough sample size to report a given measure for Medicaid enrollees who are transgender, but not to understand whether there is variation in experiences *within* that group by other key characteristics, such as race, ethnicity, or disability status. Similarly, there may not be sufficient sample size to produce a reliable estimate of certain outcomes that are less common for these smaller subpopulations, such as the share who delay care.

2. BACKGROUND

Thirteen surveys were included in our review of available sample size by disability status, primary language and spoken English proficiency, and SOGI. Table 2 provides an overview of each survey with respect to frequency of data collection, target population, the ability to produce estimates for states and territories, the most recent public use data available, and unweighted sample size for the total population and for Medicaid.

TABLE 2. Federal Public Use Data Files

Federal Survey	Periodicity	Target Population	States, DC, and Territories Represented	Most Recent Data Year	Total Population Unweighted Sample Size	Total Unweighted Sample Size for Medicaid ¹
ACS	Annual	Civilian, non-institutionalized U.S. population	50 states, D.C., Puerto Rico	2021	3,252,599	434,900
BRFSS	Annual	U.S. adults > 18 years	49 states (no Florida in 2021), D.C., Guam, Puerto Rico, Virgin Islands	2021	438,693	50,306
CPS	Annual	Civilian, non-institutionalized U.S. population	50 states, D.C.	2022	152,732	24,155
HPS	Panel	U.S. adults > 18 years	50 states, D.C.	2023	59,290	2,764
MEPS-HC ²	Panel	Civilian, non-institutionalized U.S. population	No state estimates	2020	27,805	6,504
MCBS ³	Annual	All individuals enrolled in Medicare	No state estimates	2020	13,916	2,593
NAMCAHPS ⁴	Fielded once	Adults enrolled in Medicaid	50 states, D.C.	2014	272,679	272,679
NHANES	Periodic	Civilian, non-institutionalized U.S. population	No state estimates	2020 ⁵	9,254	2,841
NHIS	Annual	Civilian, non-institutionalized U.S. population	50 states, D.C. when two years combined in the RDC	2022	35,115	4,918

Federal Survey	Periodicity	Target Population	States, DC, and Territories Represented	Most Recent Data Year	Total Population Unweighted Sample Size	Total Unweighted Sample Size for Medicaid ¹
NSCH ⁶	Annual	U.S. children < 18 years	50 states, D.C. when two years combined	2021	50,892	11,259
NSDUH	Annual	Civilian, non-institutionalized U.S. population, age 12 +	No state estimates	2021	58,034	11,008
PRAMS	Annual	Pregnant women in 47 states, D.C., and Puerto Rico	See target population	2021	NA	NA
SIPP ⁷	Panel	Civilian, non-institutionalized U.S. population	50 states, D.C.	2022	40,510	5,835

Notes: ACS is American Community Survey. BRFSS is Behavioral Risk Factor Surveillance System. CPS is Current Population Survey. HPS is Household Pulse Survey. MEPS-HC is Medical Expenditure Panel Survey-Household Component. MCBS is Medicare Current Beneficiary Survey. NAMCAHPS is Nationwide Adult Medicaid Consumer Assessment of Healthcare Providers & Systems. NHANES is National Health and Nutrition Examination Survey. NHIS is National Health Interview Survey. NSCH is National Survey of Children’s Health. NSDUH is National Survey on Drug Use and Health. PRAMS is Pregnancy Risk Assessment Monitoring System. SIPP is Survey of Income and Program Participation. DC is District of Columbia. RDC is Research Data Center. NA is not available.

¹ Unless otherwise noted, where relevant, Medicaid was defined using the typical MACPAC hierarchy:

(1) Medicare; (2) Private with no Medicare; (3) Medicaid with no Medicare or private; (4) Other type of insurance with no Medicare or private; (5) Uninsured all year

² Medicaid coverage was defined based on the most recent date of data collection (e.g., December).

³ MCBS data uses “full year dual” to define Medicaid, meaning people who were enrolled in Medicare and Medicaid all year.

⁴ NAMCAHPS limited to adults enrolled in Medicaid.

⁵ Sample size analysis conducted using 2017-2018 file, because of pandemic impacts on data collection in 2020.

⁶ The NSCH includes three categories of children’s coverage (public, private, uninsured); we code children in public coverage as having Medicaid, because Medicare is much less common among children.

⁷ SIPP data uses the annual coverage variables to define Medicaid.

Source: SHADAC analysis of federal survey data.

Table 3 summarizes whether each survey in our review includes questions about disability status, primary language and spoken English proficiency, and SOGI. These results are discussed in more detail below.

TABLE 3. Selected Federal Health Surveys and Availability of Disability, Language, and Sexual Orientation and Gender Identity Data

Federal survey (most recent year of data)	Disability type: Functional ¹	Disability type: Intellectual	Disability Type: Serious Mental Illness ²	Language: Primary language	Language: Spoken English Proficiency	Sexual Orientation	Gender Identity
Total # of surveys with question type	8	3	6	6	5	5	2
ACS (2021)	Yes	No	No	Yes	Yes	No	No
BRFSS (2021)	Yes	No	No	No	No	Yes	Yes
CPS (2022)	Yes	No	No	No	No	No	No
HPS (2023)	No ⁵	No	Yes	No	No	Yes	Yes
MEPS-HC (2020)	Yes	No	Yes	Yes	Yes	No	No
MCBS (2020)	Yes	Yes ³	Yes ³	Yes ³	Yes ³	No	No
NAMCAPS (2014)	Yes	No	No	No	No	No	No
NHANES (2020) ⁴	Yes	No	Yes	Yes	No	Yes ³	No
NHIS (2022)	No ⁵	Yes ⁶	Yes	No	No	Yes	No
NSCH (2021)	No	Yes	No	Yes	No	No	No
NSDUH (2021)	No	No ⁵	Yes	No	Yes	Yes	No
PRAMS (2021)	No	No	No	No	No	No	No
SIPP (2022)	Yes	No	No	Yes	Yes	No	No

Notes: ACS is American Community Survey. BRFSS is Behavioral Risk Factor Surveillance System. CPS is Current Population Survey. HPS is Household Pulse Survey. MEPS-HC is Medical Expenditure Panel Survey-Household Component. MCBS is Medicare Current Beneficiary

Survey. NAMCAHPS is Nationwide Adult Medicaid Consumer Assessment of Healthcare Providers & Systems. NHANES is National Health and Nutrition Examination Survey. NHIS is National Health Interview Survey. NSCH is National Survey of Children’s Health. NSDUH is National Survey on Drug Use and Health. PRAMS is Pregnancy Risk Assessment Monitoring System. SIPP is Survey of Income and Program Participation.

¹ The sample size analysis was limited to surveys that ask the 6 questions included in the ACS.

² The sample size analysis was limited to surveys that included questions from the K-6, PHQ-9, or PHQ-2 depression screening instruments. See appendix for detailed definitions.

³ Available in restricted data, not in public use file (PUF). Sample size analysis limited to PUF data.

⁴ Sample size analysis conducted with 2017-2018 NHANES data, because pandemic interruptions made 2019-2020 non-representative.

⁵ Includes functional disability questions from the Washington Disability Group instruments.

⁶ Question about intellectual disability only asked of children.

Source: SHADAC analysis of federal survey data.

Disability

For the purpose of this analysis, we sought to assess which surveys have questions to identify three types of disability: functional, intellectual, and disabilities related to serious mental illness (SMI).

Functional disability: As Table 3 shows, eight of the 13 surveys include questions related to functional disability. Although there are numerous instruments that can be used to assess functional disability status, we focused our analysis on surveys that contained the six-question series that has been included in the American Community Survey (ACS) since 2008. The questions are related to hearing, vision, cognition, ambulation, self-care, and independent living. These functional limitation questions were extensively tested to ensure that they capture most people with disabilities and reflect the 2011 U.S. Department of Health and Human Services (HHS) recommendations for defining disability (see Appendix for question wording).^{2,3}

Intellectual disability: The Medicare Current Beneficiary Survey (MCBS), NHIS, and National Survey on Children’s Health (NSCH) include a yes or no question about whether someone has been diagnosed with an intellectual disability. The NSCH is limited to children, and the NHIS only asks the intellectual disability question of children. As noted in Table 3, the MCBS includes a question about intellectual disability in the limited data set, but we only conducted sample size analysis with public use files, so findings reported in the next section do not include sample size for people with intellectual disabilities in the MCBS.

Serious mental illness: The Household Pulse Survey (HPS), Medical Expenditure Panel Survey-Household Component (MEPS-HC), MCBS, NHIS, and National Survey on Drug Use and Health (NSDUH) include questions that identified SMI (see appendix for detailed definitions of how SMI was defined in each survey). As noted in Table 3, the MCBS includes questions related to SMI in their limited data set, but sample size analysis was only conducted with public use files, so findings reported in the next section do not include sample size for people with an SMI in the MCBS.

Primary Language and Spoken English Proficiency

The ACS, MEPS-HC, and Survey on Income and Program Participation (SIPP) include questions about primary language and spoken English proficiency (Table 3). The National Health and Nutrition Examination Survey (NHANES) and NSCH include only primary language questions. As noted in Table 3, the MCBS includes both questions in the limited data set, but sample size analysis was only conducted with public use files so findings reported in the next section do not include sample size for people with limited English proficiency or a primary language other than English in the MCBS.

Sexual Orientation and Gender Identity

The BRFSS (Behavioral Risk Factor Surveillance System), HPS, National Health Interview Survey (NHIS), and NSDUH include questions about sexual orientation (Table 3). The BRFSS and HPS also include questions about gender identity or whether individuals consider themselves to be transgender or gender non-conforming or non-binary. As noted in Table 3, the NHANES includes questions about sexual orientation in the restricted data, but sample size analysis was only conducted with public use files so findings reported in the next section do not include sample size by sexual orientation in the NHANES.

3. SAMPLE SIZE ANALYSIS

Disability

Table 4 summarizes findings for sample size analysis for the three types of disability questions included in our review: functional, intellectual, and serious mental illness. We discuss findings related to each disability type in more detail below.

TABLE 4. Unweighted Sample size by Disability Type in Public Use Data for Selected Federal Surveys

Federal survey	Total vs Medicaid	Disability Type: Functional	Disability Type: Intellectual	Disability Type: Serious mental illness
ACS	Total	501,018	NA	NA
	Medicaid	74,407	NA	NA
BRFSS	Total	127,194	NA	NA
	Medicaid	20,303	NA	NA
CPS	Total	14,715	NA	NA
	Medicaid	2,077	NA	NA
HPS	Total	NA	NA	9,248
	Medicaid	NA	NA	221
MEPS-HC ¹	Total	4,274	NA	1,322
	Medicaid	2,628	NA	563
MCBS ^{2,3}	Total	1,193	NS	NS
	Medicaid	307	NS	NS
NAMCAHPS ⁴	Total	NA	NA	NA
	Medicaid	174,616	NA	NA
NHANES	Total	2,118	NA	169
	Medicaid	537	NA	42*
NHIS ⁵	Total	NA	118	1,897
	Medicaid	NA	47	313
NSCH ⁶	Total	NA	530	NA
	Medicaid	NA	242	NA
NSDUH	Total	NA	NA	4,648
	Medicaid	NA	NA	1,111
PRAMS	Total	NA	NA	NA
	Medicaid	NA	NA	NA
SIPP ⁷	Total	9,854	NA	NA
	Medicaid	1,327	NA	NA

Notes: ACS is American Community Survey. BRFSS is Behavioral Risk Factor Surveillance System. CPS is Current Population Survey. HPS is Household Pulse Survey. MEPS-HC is Medical Expenditure Panel Survey-Household Component. MCBS is Medicare Current Beneficiary Survey. NAMCAHPS is Nationwide Adult Medicaid Consumer Assessment of Healthcare Providers & Systems. NHANES is National Health and Nutrition Examination Survey. NHIS is National Health Interview Survey. NSCH is National Survey of Children's Health. NSDUH is National Survey on Drug Use and Health. PRAMS is Pregnancy Risk Assessment Monitoring System. SIPP is Survey of Income and Program Participation.

*Indicates insufficient sample size for Medicaid.

NA indicates question not included in the survey.

NS indicates question is included in the survey, but the data are only included in the restricted or limited data set, so the sample size is not available.

Unless otherwise noted, where relevant, Medicaid was defined using the typical MACPAC hierarchy:

(1) Medicare; (2) Private with no Medicare; (3) Medicaid with no Medicare or private; (4) Other type of insurance with no Medicare or private; (5) Uninsured all year

¹ Medicaid coverage was defined based on the most recent date of data collection (e.g., December).

² MCBS data uses "full year dual" to define Medicaid, meaning people who were enrolled in Medicare and Medicaid all year.

³ MCBS includes three categories for functional disability questions. We code "a lot of trouble" as yes, has a disability. We code "a little trouble" and "no trouble" as does not have a disability.

⁴ NAMCAHPS limited to adults enrolled in Medicaid.

⁵ Intellectual disability question asked of children only.

⁶ The NSCH includes three categories of children's coverage (public, private, uninsured); we code children in public coverage as having Medicaid, because Medicare is much less common among children.

⁷ SIPP data uses the annual coverage variables to define Medicaid.

Source: SHADAC analysis of federal survey data.

Functional disability: The eight surveys that include the ACS questions related to functional disability have sufficient sample size for analysis of the total population and Medicaid (the Nationwide Adult Medicaid Consumer Assessment of Healthcare Providers & Systems (NAMCAHPS) only includes adults with Medicaid coverage). Response rates are close to 100 percent for all surveys.

Intellectual disability: As discussed above, only NHIS and NSCH include questions related to intellectual disability that are accessible in public use files, and in both cases, the information is restricted to child respondents. The NHIS has a large enough sample size for the total population, but is just below the 50 observations threshold for Medicaid (47). The NSCH has sufficient sample size for both the total population and Medicaid. Response rates are close to 100 percent for both surveys.

SMI: The HPS, MEPS-HC, NHANES, NHIS, and NSDUH have sufficient sample size for people with SMI; except for the NHANES, these surveys also have enough sample size to support estimates for Medicaid. Response rates for these questions vary across surveys and are somewhat lower (96.4 percent - 100 percent) than for the functional and intellectual disability questions we assessed; the NSDUH has the lowest response rates (96.4 percent for Medicaid).

Primary Language and Spoken English Proficiency

Table 5 summarizes sample size available across the 13 surveys for questions related to primary language and spoken English proficiency. The ACS, MEPS-HC, NHANES, NSCH, and SIPP have sufficient sample size for analysis of the total population and Medicaid of people reporting a primary language other than English. The ACS, MEPS-HC, NSDUH, and SIPP have sufficient sample size for people who report speaking English either "not well or not at all" for the total population and Medicaid. Response rates across all surveys and both question types are 100 percent.

TABLE 5. Unweighted Sample size for Primary Language and Limited Spoken English Proficiency in Public Use Data for Selected Federal Surveys

Federal survey	Total vs Medicaid	Primary Language: English	Primary Language: Other	English Proficiency: Very Well and Well	English Proficiency: Not Well and Not at All
ACS	Total	2,514,522	586,239	480,188	106,051
	Medicaid	278,005	105,355	86,684	18,671
BRFSS	Total	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA
CPS	Total	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA
HPS	Total	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA
MEPS-HC ^{1,2}	Total	19,019	6,837	24,184	1,673
	Medicaid	5,499	984	6,074	409
MCBS ³	Total	NS	NS	NS	NS
	Medicaid	NS	NS	NS	NS
NAMCAHPS ⁴	Total	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA
NHANES ⁵	Total	6,819	1,572	NA	NA
	Medicaid	1,917	425	NA	NA
NHIS	Total	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA
NSCH ⁶	Total	46,529	4,115	NA	NA
	Medicaid	9,581	1,616	NA	NA
NSDUH	Total	NA	NA	54,632	1,397
	Medicaid	NA	NA	10,283	351
PRAMS	Total	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA
SIPP ⁷	Total	31,651	7,043	5,818	1,225
	Medicaid	3,585	1,564	1,322	242

Notes: ACS is American Community Survey. BRFSS is Behavioral Risk Factor Surveillance System. CPS is Current Population Survey. HPS is Household Pulse Survey. MEPS-HC is Medical Expenditure Panel Survey-Household Component. MCBS is Medicare Current Beneficiary Survey. NAMCAHPS is Nationwide Adult Medicaid Consumer Assessment of Healthcare Providers & Systems. NHANES is National Health and Nutrition Examination Survey. NHIS is National Health Interview Survey. NSCH is National Survey of Children's Health. NSDUH is National Survey on Drug Use and Health. PRAMS is Pregnancy Risk Assessment Monitoring System. SIPP is Survey of Income and Program Participation.

NA indicates question not included in the survey.

NS indicates question in survey, but restricted or limited data set only, so sample size not available.

Unless otherwise noted, where relevant, Medicaid was defined using the typical MACPAC hierarchy:

(1) Medicare; (2) Private with no Medicare; (3) Medicaid with no Medicare or private; (4) Other type of insurance with no Medicare or private; (5) Uninsured all year

¹ Medicaid coverage was defined based on the most recent date of data collection (e.g., December).

² English proficiency question has not applicable for English speakers (those that don't speak a different language at home). These people were put in the ""Very well and well"" category.

³ MCBS data uses "full year dual" to define Medicaid, meaning people who were enrolled in Medicare and Medicaid all year.

⁴ NAMCAHPS limited to adults enrolled in Medicaid.

⁵ Those who spoke English and another language equally at home were coded as English for primary language.

⁶ The NSCH includes three categories of children's coverage (public, private, uninsured); we code children in public coverage as having Medicaid, because Medicare is much less common among children.

⁷ SIPP data uses the annual coverage variables to define Medicaid.

Source: SHADAC analysis of federal survey data.

Sexual Orientation and Gender Identity

Table 6 summarizes sample size available across the 13 surveys for questions related to SOGI. The BRFSS, HPS, NHIS, and NSDUH have sufficient sample size for analysis of people who report being lesbian, gay, or bisexual for

the total population and Medicaid. Only the BRFSS and HPS ask about gender identity. The BRFSS has sufficient sample size for both the total population and Medicaid for people who report their gender identity as transgender, gender non-conforming, or non-binary. The HPS gathers information about people who report being transgender, and there is sufficient sample size for analysis of the total population, but not for Medicaid.

Response rates for sexual orientation and gender identity questions are the lowest of all questions we reviewed, but still above 90 percent, ranging from 91.7 percent among people with Medicaid in the NHIS asked about sexual orientation to 99.2 percent among people with Medicaid in the HPS. We calculated the response rates for the binary sex questions in all surveys as a comparison and they are all 100 percent.

TABLE 6. Unweighted Sample size For Sexual Orientation (SO) and Gender Identity (GI) in Public Use Data For Selected Federal Surveys

Federal survey	Total vs Medicaid	SO: Heterosexual	SO: Lesbian and gay	SO: Bisexual	GI: Transgender	GI: Gender non-binary or non-conforming
ACS	Total	NA	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA	NA
BRFSS	Total	222,425	4,414	6,779	1,070	443
	Medicaid	22,847	625	1,407	197	94
CPS	Total	NA	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA	NA
HPS	Total	52,232	1,982	2,439	246	NA
	Medicaid	2,247	115	232	27*	NA
MEPS-HC ¹	Total	NA	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA	NA
MCBS ²	Total	NA	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA	NA
NAMCAHPS ³	Total	NA	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA	NA
NHANES	Total	NS	NS	NA	NA	NA
	Medicaid	NS	NS	NA	NA	NA
NHIS	Total	24,733	574	569	NA	NA
	Medicaid	2,038	54	102	NA	NA
NSCH ⁴	Total	NA	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA	NA
NSDUH	Total	39,751	1,334	3,792	NA	NA
	Medicaid	5,539	219	911	NA	NA
PRAMS	Total	NA	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA	NA
SIPP ⁵	Total	NA	NA	NA	NA	NA
	Medicaid	NA	NA	NA	NA	NA

Notes: ACS is American Community Survey. BRFSS is Behavioral Risk Factor Surveillance System. CPS is Current Population Survey. HPS is Household Pulse Survey. MEPS-HC is Medical Expenditure Panel Survey-Household Component. MCBS is Medicare Current Beneficiary Survey. NAMCAHPS is Nationwide Adult Medicaid Consume Assessment of Healthcare Providers & Systems. NHANES is National Health and Nutrition Examination Survey. NHIS is National Health Interview Survey. NSCH is National Survey of Children's Health. NSDUH is National Survey on Drug Use and Health. PRAMS is Pregnancy Risk Assessment Monitoring System. SIPP is Survey of Income and Program Participation.

*Indicates insufficient sample size for Medicaid.

NA indicates question not in survey.

NS indicates question in survey, but restricted or limited data set only, so sample size not available.

Unless otherwise noted, where relevant, Medicaid was defined using the typical MACPAC hierarchy:

- (1) Medicare; (2) Private with no Medicare; (3) Medicaid with no Medicare or private; (4) Other type of insurance with no Medicare or private; (5) Uninsured all year

¹ Medicaid coverage was defined based on the most recent date of data collection (e.g., December).

² MCBS data uses “full year dual” to define Medicaid, meaning people who were enrolled in Medicare and Medicaid all year.

³ NAMCAHPS limited to adults enrolled in Medicaid.

⁴ The NSCH includes three categories of children’s coverage (public, private, uninsured); we code children in public coverage as having Medicaid, because Medicare is much less common among children.

⁵ SIPP data uses the annual coverage variables to define Medicaid.

Source: SHADAC analysis of federal survey data.

APPENDIX

Definitions

Functional disability was defined in surveys that included the following six American Community Survey (ACS) questions, which are based on recommendations from the 2011 HHS recommendations on defining disability⁴:

- Are you deaf or do you have serious difficulty hearing?
- Are you blind or do you have serious difficulty seeing, even when wearing glasses?
- Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions? (5 years old or older)
- Do you have serious difficulty walking or climbing stairs? (5 years old or older)
- Do you have difficulty dressing or bathing? (5 years old or older)
- Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping? (15 years old or older)

Several surveys also include questions from the **Washington Group Extended Set on Functioning (WG-ES)** instrument. Surveys that included both the ACS and WG-ES questions were included in our analysis of functional disability. Surveys that only included the WG-ES (HPS and NHIS) were not included. The WG-ES is a question set that can be used to describe and assess functional status in the following domains: vision, hearing, mobility, communication, cognition and self-care. It also assesses functioning in domains that are not part of the ACS question set, including affect (anxiety and depression), upper body functioning, pain, and fatigue. Questions are assessed on a difficulty scale.

Intellectual disability was defined based on the following:

Parents who answered that a doctor or other health provider has ever told them that the child has an intellectual disability.

Serious mental illness (SMI) was defined in surveys that included one or more of the Kessler-6⁵, PHQ-2⁶, or PHQ-9⁷ instruments. Individuals who met a given cut point in a survey including multiple measures were defined as having SMI. Scoring and cut-points for each instrument include:

- **Kessler-6:** The Kessler Psychological Distress Scale (K6+) is a 6-item self-report measure of psychological distress. Participants indicate how often they have had six different feelings or experiences during the past 30 days: 4 (All of the time), 3 (Most of the time), 2 (Some of the time), 1 (A little of the time), and 0 (None of the time). The feelings and experiences include: "nervous," "hopeless," "restless or fidgety," "so depressed that nothing could cheer you up," "that everything was an effort," and "worthless." The total score for the scale is computed by summing the points for the six experiences. For this analysis respondents with a score of 13-24 were coded as having SMI. (MEPS-HC and NSDUH)
- **PHQ-9:** Participants indicate how often they have had nine different feelings or experiences during the past two weeks: not at all, several days (+1), more than half the days (+2), nearly every day (+3). The feelings and experiences include: "little interest or pleasure in doing things," "feeling down, depressed, or hopeless," "trouble falling asleep, staying asleep, or sleeping too much," "feeling tired or having little energy," "poor appetite or overeating," "feeling bad about yourself

or that you're a failure or have let yourself or your family down," "trouble concentrating on things," "moving or speaking so slowly that other people could have noticed. Or being so fidgety or restless that you have been moving around a lot more than usual," and "thought that you would be better off dead or of hurting yourself in some way." The total score for the scale is computed by summing the points for the nine questions. For this analysis respondents with a score of 15-27 were coded as having SMI. (HPS, MEPS-HC, and NHIS)

- **PHQ-2:** Participants answer the first two questions from the PHQ-9. For this analysis, respondents with a score of 3-6 were coded as having SMI. The MEPS-HC and NHANES included the PHQ-2 questions. As noted earlier in the report, the MCBS also included the PHQ-2 questions in its limited data set, which was not analyzed for this report.

Primary language and English proficiency was defined in surveys that include the following questions, which follow recommendations from the 2011 HHS recommendations on defining these measures⁸:

- Do you speak a language other than English at home? (ACS, MEPS-HC, MCBS, NHANES, NSCH, SIPP)
- What is this language? (ACS, MEPS-HC, MCBS, NHANES, NSCH, SIPP)
- How well do you speak English? (very well, well, not well, not at all; those answering "not well or not at all" were coded as having limited English proficiency). (ACS, MEPS-HC, MCBS, NSDUH, SIPP)

Sexual orientation and gender identity questions were asked somewhat differently across surveys. For this analysis, responses were only included in the sample size analysis if their responses aligned with the categories in the sample size analysis (e.g., lesbian, gay, bisexual, transgender, and gender non-binary or gender non-conforming). Other responses, such as "something else," were not included in the sample size analysis. Some responses were combined to make estimates comparable (e.g., gender non-conforming and non-binary). Questions and response options include:

Sexual Orientation

- Which of the following best represents how you think of yourself? (BRFSS, HPS) Which of the following do you consider yourself to be? (NSDUH)
 - Lesbian or gay
 - Straight
 - Bisexual
 - Something else
 - I don't know the answer
- Do you think of yourself as lesbian or gay; straight, that is, not lesbian or gay; bisexual; something else; or you don't know the answer? (NHIS, NHANES)

Gender Identity

- Do you consider yourself to be transgender? If yes, do you consider yourself to be male-to-female, female-to-male, or gender non-conforming? (BRFSS)
- Do you currently describe yourself as male, female or transgender? (HPS)

Sample Size Analysis

The sample size analysis represents unweighted counts. Sufficient sample size was defined as 50 or more responses meeting a given criteria (e.g., functional disability, functional disability and enrolled in Medicaid).

Response Rates

Response rates were calculated as the percentage of eligible respondents that had a valid, non-missing response to a question. For definitions that included multiple questions, respondents were included in the denominator if they were eligible to receive at least one of the questions. The numerator for each response rate included respondents that had a valid, non-missing response to at least one of the questions.

¹ Medicaid and CHIP Payment and Access Commission (MACPAC). 2022. *Availability of Race and Ethnicity Data for Medicaid Beneficiaries*. Washington, DC: MACPAC. https://www.macpac.gov/wp-content/uploads/2022/03/MACPAC-brief_Race-and-Ethnicity-Data-Availability.pdf.

² Altman, B.M., J. Madans, and J.D Weeks. 2017. An evaluation of the American Community Survey indicators of disability. *Disability and Health Journal* 10, no. 4: 1-7. <https://doi.org/10.1016/j.dhjo.2017.03.002>.

³ Office of the Assistant Secretary for Planning and Evaluation (ASPE), U.S. Department of Health and Human Services. 2011. *HHS Implementation Guidance on Data Collection Standards for Race, Ethnicity, Sex, Primary Language, and Disability Status*. Washington, DC: ASPE. <https://aspe.hhs.gov/reports/hhs-implementation-guidance-data-collection-standards-race-ethnicity-sex-primary-language-disability-0>.

⁴ Office of the Assistant Secretary for Planning and Evaluation (ASPE), U.S. Department of Health and Human Services. 2011. *HHS Implementation Guidance on Data Collection Standards for Race, Ethnicity, Sex, Primary Language, and Disability Status*. Washington, DC: ASPE. <https://aspe.hhs.gov/reports/hhs-implementation-guidance-data-collection-standards-race-ethnicity-sex-primary-language-disability-0>.

⁵ Kessler, R.C., G. Andrews, L.J. Colpe, et al. 2002. Short Screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine* 32, no. 6: 959-976. <https://doi.org/10.1017/S0033291702006074>.

⁶ Kroenke, K., R.L. Spitzer, J.B.W. Williams. 2003. The Patient Health Questionnaire-2 Validity of a Two-Item Depression Screener. *Medical Care* 41, no. 11: 1284-1292. <https://doi.org/10.1097/01.mlr.0000093487.78664.3c>.

⁷ Kroenke, K., R.L. Spitzer, J.B.W. Williams. 2001. The PHQ 9: validity of a brief depression severity measure. *J Gen Intern Med* 16: 606-613. <https://link.springer.com/article/10.1046/j.1525-1497.2001.016009606.x>.

⁸ Office of the Assistant Secretary for Planning and Evaluation (ASPE), U.S. Department of Health and Human Services. 2011. *HHS Implementation Guidance on Data Collection Standards for Race, Ethnicity, Sex, Primary Language, and Disability Status*. Washington, DC: ASPE. <https://aspe.hhs.gov/reports/hhs-implementation-guidance-data-collection-standards-race-ethnicity-sex-primary-language-disability-0>.