

FACES OF MEDICAID DATA SERIES

Examining Children's Behavioral Health Service Utilization and Expenditures: A Toolkit for States

JULY 2018

Medicaid is a significant source of funding for behavioral health care — defined as both mental health and substance use disorder services and supports — for children and youth in the United States. The [Faces of Medicaid: Examining Children's Behavioral Health Service Utilization and Expenditures, 2005-2011](#) study (*Children's Faces of Medicaid*), funded principally by the Annie E. Casey Foundation, was designed by the Center for Health Care Strategies (CHCS) to analyze how expenditures are distributed across behavioral health service types and how patterns of behavioral health care use and expense differ for children across: (1) Medicaid aid categories, including Temporary Assistance for Needy Families (TANF) recipients, children who are eligible for Supplemental Security Income (SSI)-based Medicaid coverage, and children in foster care; (2) gender; (3) age; and (4) race and ethnicity.

USING THIS TOOLKIT

This toolkit is intended for use by states and their research partners interested in replicating CHCS' *Children's Faces of Medicaid* study utilizing their own state data. It can be used to answer the following questions:

1. How do behavioral health service use and expense among Medicaid-insured children vary by age group, gender, race/ethnicity, aid category, and diagnosis?
2. How do psychotropic medication use and expense among Medicaid-insured children vary by age group, gender, race/ethnicity, aid category, and diagnosis?
3. What physical health services are used by children who receive behavioral health care in Medicaid, and how does their physical health service use vary by age group, gender, race/ethnicity, aid category, and diagnosis?

The toolkit includes:

- A description of CHCS' [study data and methodology](#), including a detailed catalogue of behavioral health services and a [glossary of service type definitions](#);
- An [International Classification of Diseases \(ICD\) Crosswalk](#), assigning ICD-9 codes to one of seven major categories of psychiatric diagnoses;
- A [National Drug Code \(NDC\) Crosswalk](#), assigning NDC codes to one of seven major categories of psychiatric diagnoses. Note, NDC codes provided are from 2013 and may be incomplete if applied to recent data;
- A [Behavioral Health Service Crosswalk](#), assigning each behavioral health procedure code to one of a specified number of behavioral health service types; and
- [Blank Data Workbooks](#), which can be populated with state specific data on the utilization and expenditures of behavioral health services, psychotropic medications, and physical health services. (Demographic data for the 2011 national child Medicaid population has been included for reference.)

Made possible by the Annie E. Casey Foundation, with additional support from the National Technical Assistance Network for Children's Behavioral Health (TA Network) at the University of Maryland. The TA Network is funded by the Center for Mental Health Services (CMHS) at the U.S. Department of Health and Human Services (HHS), Substance Abuse and Mental Health Services Administration (SAMHSA) through Contract #HHSS280201500007C. The views, opinions, and content expressed here do not necessarily reflect the views, opinions, or policies of the CMHS, SAMHSA, or HHS.

Suggested Citation: Pires, S., McLean, J., Allen, K., and Grimes, K. (2018) *Faces of Medicaid Data Series: Examining Children's Behavioral Health Service Utilization and Expenditures: A Toolkit for States*. Center for Health Care Strategies: Hamilton, NJ.

Prior to commencing any analyses, states should assess the availability and completeness of their state's Medicaid data along with its reliability and validity to ensure accuracy and confidence in the results of any analyses conducted.

DATA AND METHODS

CHCS' analyses used data derived from the Medicaid Analytic eXtract (MAX) system for all enrolled children (ages 0-18) in order to obtain national, person-level information on Medicaid eligibility and claims for service utilization and payments. While CHCS utilized MAX data, states performing analyses of their own state data may use information for the data systems available within their states.

States interested in analyzing how behavioral health care use and expense vary among Medicaid-insured children within their state should work collaboratively with their Medicaid agency to access Medicaid claims data for the population(s) of interest. To best replicate CHCS' study methodology, states should ensure that the data available can be used to:

1. Extract claims for all children in Medicaid who used behavioral health services or psychotropic medication regardless of how long they were enrolled (i.e., continuous Medicaid enrollment not required);
2. Summarize utilization and cost associated with behavioral health services and psychotropic medications;
3. Illuminate the variation in behavioral health service use by state payment and financing arrangement (i.e., fee-for-service [FFS] and managed care); and
4. Profile disease burden, including psychiatric diagnoses and comorbid physical health conditions, in the child Medicaid population.

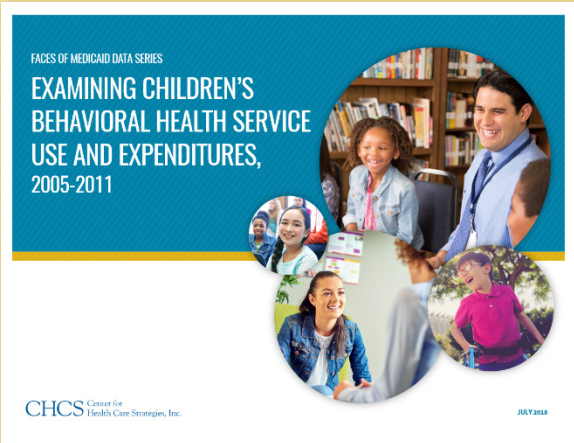
States and their research partners should pay close attention to the financing and payment structures within their state to best understand how behavioral health care is delivered and billed by their Medicaid agencies. Previously, not all health plans financed through capitation were required to submit encounter and expenditure data to their states, which limited analyses to only available FFS data. States are in the process of implementing changes mandated by the Centers for Medicare and Medicaid Services through the Transformed Medicaid Statistical Information System (T-MSIS), which will require health plans to document and submit encounter data and Medicaid paid amounts for encounters.¹

Behavioral Health Service Utilization

A detailed taxonomy of behavioral health services² is available (see [Appendix A](#)), which provides a glossary of service types used in CHCS' methodology. This toolkit also includes an accompanying [behavioral health service crosswalk](#), assigning Current Procedural Terminology (CPT) codes for psychiatry and psychotherapy services to one of the specified behavioral health service types listed in Appendix A. Before commencing analyses, states should consider how behavioral health services will be defined to ensure accuracy in data collection and analysis. CHCS' methodology considers claims to be for behavioral health services if:

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Since 2000, CHCS has shed light on the needs of Medicaid's most complex populations through its series of *Faces of Medicaid* data analyses. To download the full *Children's Faces of Medicaid* report, including additional companion resources, visit: www.chcs.org/childrens-faces-of-medicaid.



- They included a behavioral health primary diagnosis; or
- The MAX type of service was designated as “psychiatric services;” or
- The service was delivered in a mental health setting (e.g., community mental health center).

Services that could not be definitively defined as behavioral health services or psychotropic medication were classified as physical health services.

Additionally, CHCS’ methodology employs the Chronic Disability Payment System (CDPS) method — a widely used classification system developed at University of California San Diego that clusters Medicaid claims by illness category and assigns corresponding claims expense — to investigate prevalence of chronic medical conditions among all children in Medicaid who had behavioral health service use and at least six months of FFS enrollment.

Behavioral Health Service Expenditures

CHCS’ methodology includes all children, whether they were enrolled in a FFS program, managed care organization (MCO), or managed behavioral health plan, as well as all claims records, whether they were FFS claims or MCO encounter records. However, for CHCS’ study, mean expenditures could only be calculated for children with paid FFS claims. For children without claims, MCO encounter data were used to analyze utilization, but not expenditures. For that group, expenses were extrapolated based on FFS data and imputed for capitated or partially capitated states, with caveats noted. While CHCS’ analysis includes all states, it should be noted that the quality and completeness of data vary, particularly in states utilizing capitated managed care. Behavioral health service use and expense were summarized overall, as well as by age group, aid category (TANF, foster care, or SSI/disabled), and state Medicaid payment structure (FFS, primarily FFS, or capitated managed care). Additional analyses examined race/ethnicity and gender stratification, psychotropic medication use, and children in foster care.

States can also assess the extent to which children who use behavioral health care in Medicaid have comorbid physical health conditions. CHCS’ study summarizes expenditures for physical health services by type of service overall, and by aid category. It also describes service utilization and total Medicaid expense (physical and behavioral health) for children whose behavioral health expense fall within the top 10 percent of total expenditures for behavioral health.

Psychiatric Diagnoses and Psychotropic Medication Utilization

CHCS’ methodology assigns psychiatric diagnoses to seven major categories in a hierarchical fashion, defined by consulting child and adolescent psychiatrists. This was done in order to identify a “primary diagnosis” for the purpose of analyzing service use trends among unduplicated users. This toolkit includes an accompanying [ICD crosswalk](#), which assigns ICD-9 codes to one of seven major categories of psychiatric diagnoses.

CHCS’ methodology uses pharmacy claims to identify psychotropic medication use within the Medicaid child and adolescent population. The Medicaid Rx classification system was then used to map NDC to five classes of psychotropic medications: antipsychotics, anticonvulsant medications (used in psychiatry for conditions such as bipolar disorder), anti-depressants, attention deficit hyperactivity disorder (ADHD) medications, and anxiety medications. This toolkit includes an accompanying [NDC crosswalk](#) to support states efforts in replicating CHCS’ study.

CHCS’ methodology summarizes psychotropic medication utilization and expenditures by medication type, by age group, aid category, and psychiatric diagnosis of the children for whom the medications were prescribed. Variations in patterns of medication use were examined, comparing children with documented use of behavioral health services to children who appeared to be receiving only physical health services.

LIMITATIONS

States should consider the following potential limitations of replicating CHCS’ study, including:

- Variations in the availability and reliability of your state’s data may impact the accuracy of behavioral health care utilization and expense results;
- Variations in state-specific codes and updates to national codes may impact the usefulness of the crosswalks included within this toolkit for states;
- Detailed expenditure data for children enrolled in an MCO or managed behavioral health plan may not be available in your state and therefore will need to be extrapolated based on FFS expenditures; and
- CHCS’ methodology considers claims for youth in Medicaid with any day of enrollment were included in this study; therefore, results cannot be compared to results of studies where a year of continuous enrollment was required.

ABOUT THE CENTER FOR HEALTH CARE STRATEGIES

The Center for Health Care Strategies (CHCS) is a nonprofit policy center dedicated to improving the health of low-income Americans. It works with state and federal agencies, health plans, providers, and community-based organizations to develop innovative programs that better serve people with complex and high-cost health care needs. For more information, visit www.chcs.org.

ABOUT HUMAN SERVICE COLLABORATIVE

Human Service Collaborative (HSC) is a policy and consulting group specializing in public systems serving children, youth and families. HSC helps states, counties, and communities to develop integrated, strengths-based delivery systems for children and families at risk for involvement in multiple public systems, including child welfare, juvenile justice, behavioral health, Medicaid, and education systems.

ENDNOTES

¹ The Centers for Medicare & Medicaid Services has been working with states to transition from the Medicaid Statistical Information System (MSIS) to the Transformed MSIS (T-MSIS). Most states initiated the transition in 2014 and continued to submit MSIS data while transitioning. As such, MSIS data are available for 49 states (excluding Colorado and the District of Columbia) from 2012- 2014. For more information on the T-MSIS, visit: <https://www.medicaid.gov/medicaid/data-and-systems/macbis/tmsis/index.html>.

² Effective January 2013, several Current Procedural Terminology (CPT) codes for psychiatry and psychotherapy services were modified or deleted. The codes included in this toolkit do not reflect the changes made in 2013 and all iterations of the Children’s Faces of Medicaid Study - 2005, 2008, and 2011 - were conducted prior to any significant changes.

APPENDIX A: GLOSSARY OF CHILDREN'S BEHAVIORAL HEALTH SERVICES

Activity therapy: Adjunctive therapies, such as recreation, music, and art therapy, to assist children to develop interpersonal relationships, to socialize effectively, and to develop confidence needed to participate in group activities.

Behavior management consultation and training: Includes assessment of a child's behavior, antecedents of behavior and identification of motivators; development of a specific behavior plan; supervision and coordination of behavioral interventions; and training of others, such as family members, to address specific behavior objectives and performance goals.

Case management: Assists children and their families to access needed services and supports and includes assessment, care plan development, referral, and related activities to ensure access to needed services, monitoring, and follow-up.

Crisis intervention and stabilization: Includes 24-hour, seven days a week, toll-free telephone hotline services, mobile crisis services, mobile stabilization services, crisis stabilization units, crisis respite beds, and medically monitored crisis detoxification units to alleviate or prevent a crisis, help the child return to his or her baseline level of functioning, and prevent the need for an inpatient or residential admission.

Emergency room: Services provided in a hospital area especially equipped and staffed for emergency care.

Family therapy/family education and training: Family therapy is a type of psychotherapy that involves all members of a child's family and, in some cases, members of the extended family (e.g., grandparents) in which a therapist or team of therapists conducts multiple sessions to help families deal with important issues that may interfere with the functioning of the family and the home environment; family education/training are information and supports provided to the family members/caregivers of a child with a behavioral health challenge to better understand the child's disorder, service and support options, and intervention strategies.

Group therapy: A form of psychosocial treatment where a small group of youth meet regularly to talk,

interact, and discuss problems with each other and the group leader (therapist).

Home-based (in-home) services: Interventions provided in the home typically to enable a child to remain in the home, including crisis intervention, individual and family counseling, behavior management and skills training, and case management.

Inpatient hospital: Inpatient hospital services provided in a psychiatric hospital or in a psychiatric unit of a general hospital.

Medication management: Facilitation of safe and effective use of prescription and over-the-counter medications to help patients achieve the targeted outcomes from medication therapy.

Mental health consultation: Any interaction between two or more health care professionals related to a specific issue of mental health or between a professional consultant with mental health expertise and one or more individuals with other areas of expertise, for example, child care center staff, with the purpose of problem-solving or capacity building.

Multisystemic Therapy (MST): A time-limited, goal-directed, home-based, team-based, and intensive family treatment program that addresses the multiple determinants of serious anti-social behavior in youth and the factors associated with such behavior across the youth's key settings or systems (e.g., family, peers, school, neighborhood); builds on the strengths of each system to foster positive change.

Outpatient counseling: Primarily individual outpatient therapy that is provided in a therapist's office.

Partial hospitalization/day treatment: Partial hospitalization is a nonresidential, highly structured day program that may or may not be hospital-based. The program provides diagnostic and treatment services on a level of intensity similar to an inpatient program, but on less than a 24-hour basis. These services typically include therapeutic milieu, nursing, psychiatric evaluation, medication management, and group, individual and family therapy. Day treatment is

a community-based, nonresidential day program that is intensive but allows a child to remain in his/her home; the program lasts at least four hours per day and typically provides special education, counseling, parent training, vocational training, skill building, crisis intervention, and recreational therapy.

Peer services: Includes both family peer support and youth peer support; are non-clinical, peer-based activities that engage, educate, and support families who have children with behavioral health challenges or youth themselves; are provided by trained families or youth who have lived experience of the behavioral health system; and are based on principles of respect, shared responsibility, and mutual agreement of what is helpful.

Psychological testing: Written, visual, or verbal evaluations administered to assess the cognitive and emotional functioning of children.

Psychosocial rehabilitation: Includes an array of services that are provided in the child's home, in the location where behavioral challenges are most likely to occur, such as school or in community settings; teaches the child and his/her family about, but is not limited to: emotional management, emotional regulation, and positive coping mechanisms; interventions include skills training that can include but are not limited to: vocational, social, educational, organizational, or personal care.

Psychotropic medication: Chemicals that affect the central nervous system, altering psychological processes (e.g., mood, thoughts, perception, emotions, behavior).

Residential treatment and therapeutic group homes: Residential treatment is mental health and/or substance use treatment in a licensed, highly structured, usually secure out-of-home program providing continuous 24-hour observation and supervision with typically a full complement of in-house programs including education; therapeutic group homes provide 24-hour out-of-home mental health and/or substance use services in a licensed, non-secure facility, with children typically involved in community-based activities, such as school, work, or recreation.

Respite: Provides temporary direct care and supervision for the child/youth in the child's home or a community setting with the primary purpose of providing relief to families/caregivers of a child with a serious emotional disturbance or relief to the child, helping to de-escalate stressful situations and provide a therapeutic outlet for the child; may be either planned or provided on an emergency basis.

Screening/assessment/evaluation: Distinct processes with different but related purposes: screening includes activities to identify children who may need further assessment to determine the existence of a behavioral health disorder; assessment is a process of gathering data from multiple sources to create a comprehensive picture of a child's strengths, challenges, and needs; evaluation is a more intensive, in-depth study in a particular area to provide additional data and recommendations.

Service planning: The process of making decisions about which services and supports are provided to individual children; informed by screening, assessment, and evaluation data.

Substance use inpatient: Hospital-based detoxification services and substance use rehabilitation counseling.

Substance use outpatient: Regularly scheduled individual, group, and/or licensed family counseling in a licensed outpatient substance use program; definition also includes intensive outpatient programs that provide a higher intensity of outpatient services over a longer period of time, supporting the daily application of what is learned in therapy, as well as outpatient detoxification services.

Substance use screening and assessment: Screening includes activities to identify youth who may need further assessment to determine the existence of a substance use disorder; assessment is a process of gathering data from multiple sources to create a comprehensive picture of a youth's strengths, challenges, and needs.

Supported housing: The combination of affordable housing with services and supports that help transition-age youth live more stable, productive lives.

Targeted case management: Intended for children with serious behavioral health challenges, ensures that service systems and community supports are maximally responsive to the specific, multiple, and changing needs of children and their families, with the case manager having limited, small caseloads and a flexible schedule to assist children and their families to access needed services, coordinate care, ensure services are responsive to needs as they change over time, and ensure services match the needs of children and their families.

Telehealth: The use of telecommunications and information technology to provide access to behavioral health assessment, diagnosis, interventions, consultation, supervision, education, and information.

Therapeutic behavioral support: Structured one-to-one support, coaching, and training provided by a therapeutic mentor or behavioral aide in the home, school, or other community location to help a child achieve age-appropriate behavior, interpersonal communication, problem-solving, conflict resolution, peer interaction etc.; typically delivered by a

paraprofessional supervised by the supervising practitioner and included as part of the child’s master treatment plan.

Therapeutic foster care: Provides a safe, secure, and nurturing environment in a private home with licensed foster parents who have received specialized training in the care of children and adolescents with emotional or substance use disorders; treatment foster parents typically provide care for one child only and perform behavioral interventions and life skills training in addition to ensuring that the child receives needed mental health and substance use services, medical care, and education.

Transportation: Transport support for providers to travel to children needing services or for children to access services.

Wraparound: A definable, individualized, and strengths-based planning and care coordination process that incorporates a child and family team and results in a unique set of services and supports for a child and family, with the plan closely monitored and care coordinated to achieve a positive set of outcomes.

APPENDIX B: GLOSSARY OF TOOLKIT ACRONYMS

ADHD: Attention deficit hyperactivity disorder

CDPS: Chronic Disability Payment System

CMS: Centers for Medicare & Medicaid Services

COD: Conduct and oppositional defiant disorder

DD: Developmental disability

FFS: Fee-for-service

ICD: International Classification of Diseases

MAX: Medicaid Analytic eXtract

MCO: Managed care organization

MST: Multisystemic Therapy

NDC: National Drug Code

SSI: Supplemental Security Income

SUD: Substance use disorder

TANF: Temporary Assistance for Needy Families