

Population Diversity in Medicaid Managed Long-Term Services and Supports Programs: Implications for Rate Setting and Risk Adjustment

By Jenna Libersky and Debra Lipson, Mathematica Policy Research

IN BRIEF

States are looking for ways to improve the accuracy of payments to Medicaid managed care plans that provide long-term services and supports (LTSS) to Medicaid beneficiaries. The range of demographic and functional characteristics of seniors and individuals with disabilities receiving LTSS and other limitations makes it particularly difficult to predict the need for LTSS. This brief, supported through the West Health Policy Center, describes the challenges of predicting costs for MLTSS enrollees, as well as solutions to overcome these challenges. Given the diversity of the LTSS population, states developing a risk adjustment strategy for Medicaid managed long-term services and supports programs should start by reviewing the characteristics of various subpopulations and their functional status. Although incorporating this information into a risk model does not account for all factors, such as the availability of family caregivers, disease progression, and social determinants of health, states seeking to develop risk adjustment models should consider investing in analyses to better understand the diversity of their population and further improve payment accuracy.

As more states develop or expand Medicaid managed long-term services and supports (MLTSS) programs to cover a greater number of people, state officials are looking for ways to improve the accuracy of the payments they make to managed care plans to reflect the expected costs of providing covered services. One such strategy — “risk adjustment” — calibrates payments so that managed care plans whose enrollees are expected to need more care receive higher monthly capitated rates than plans whose enrollees are expected to need less care. Without risk adjustment, plans face strong incentives to enroll individuals with lower-cost needs, and plans that serve individuals with greater needs could restrict access to care or become financially insolvent. Despite the importance of risk adjustment in rate setting, there are many challenges with predicting costs for MLTSS enrollees, as well as limitations in the data available to adjust payments based on the need for functional supports.

This brief, supported through the West Health Policy Center, describes the challenges of predicting costs for MLTSS enrollees, as well as solutions to overcome these challenges. First, it describes the diversity of MLTSS enrollees and the wide range of characteristics that can influence cost of long-term services and supports (LTSS). Then, it discusses how states can use information on demographic and functional limitations to predict the cost of care for seniors and people with disabilities through risk adjustment. Finally, it describes several limitations of risk adjustment and the data on which it relies. States that are considering a risk adjustment model for their MLTSS programs are encouraged to use this information to inform their rate-setting strategies.¹

Diversity of Individuals Using Long-Term Supports and Services

One of the primary challenges with attempting to predict the need for LTSS and the cost of those services is the wide range of demographic and functional characteristics of individuals with disabilities and significant frailty within that broad population. Outside of a shared need for hands-on personal assistance to carry out routine activities of daily living (ADLs), such as eating, bathing, dressing, grooming, and toileting, the population of LTSS users is very diverse. It includes people of all ages, races and ethnicities,

household composition, and geographic regions. It includes people with a wide variety of health conditions, including acute, chronic, and behavioral health conditions. It also includes people with a range of functional support needs, from those who need assistance with nearly all ADLs, to those who need help with few ADLs but have significant cognitive impairment. Yet, within this population, distinct groups defined by demographic characteristics and functional limitations emerge.

Demographic characteristics, such as age, geographic region, race/ethnicity, household composition, and health behaviors can influence the type, amount, and duration of LTSS that individuals use. For example:

- Advancing age can increase the likelihood of disability, frailty, and chronic illness.²
- Children and younger adults usually experience a disability due to a single condition, while middle-aged and seniors may have multiple conditions that result in functional deficits.³
- LTSS users who live in certain geographic regions may share similar demographic profiles (e.g., a distinct mix of age, sex, race/ethnicity, and income) or may access care in similar ways (e.g., they may use providers with similar practice and referral patterns, or may use transportation in similar ways).
- Race and ethnicity may define groups of individuals that share sociocultural factors (e.g., family structure or preferences regarding living arrangement) or genetic characteristics that can contribute to functional limitations (e.g., cystic fibrosis or Tay-Sachs disease).
- The number and type of people living with a LTSS user (e.g., children, a spouse, or non-relative housemates) can affect his or her access to immediate support. Moreover, smoking and tobacco use can contribute to health and functional declines.

Key Characteristics That Can Affect the Needs for and Cost of Managed Long-Term Care Supports and Services

- Age
- Geographic region
- Race/ethnicity
- Household composition
- Tobacco use
- Obesity
- Types of disabilities

Different functional limitations can also contribute to variations in the need for LTSS. People with mobility limitations may have difficulties conducting self-care, resulting in a need for hands-on personal assistance, technology, or equipment for support. People with serious mental illness may require ongoing social supports and high-cost medications, as well as occasional inpatient hospital care. People with intellectual and developmental disabilities may require a range of supports over the lifespan, including housing, habilitation, and day services. These broad categories of disability do not exist in isolation. People can experience multiple conditions, and those conditions can interact with physical health problems, creating substantial variations in the need for LTSS.

Within the broad categories of disability described above, differences in the type, severity, and trajectory of functional loss can vary significantly, influencing the scope and cost of services that managed care plans are accountable to provide. For example, people who have been blind or deaf since childhood may be in excellent physical and mental health, and may only require support communicating or getting around outside the home.⁴ In contrast, people who lose vision or hearing late in life may be at risk for falls and further functional declines. Severe mental illnesses like schizophrenia, bipolar disorder, and depression usually develop earlier in life, and symptoms or episodes may appear in cycles or persist over long periods of time. Neurocognitive disorders that develop later in life, such as Alzheimer’s disease and dementia, cause progressive problems with memory, changes in behavior, difficulty understanding language, and trouble performing daily activities.

Predicting Long-Term Supports and Services Costs Using Risk Adjustment

The wide range of demographic and functional characteristics of individuals with disabilities can pose a challenge to states and actuaries that attempt to predict the need for LTSS and, therefore, its cost. Research shows that health care costs for people with disabilities are highly skewed, with a significant proportion having very low costs in a given year, a smaller share with intermediate costs, and a small fraction with very high costs. Research also shows that health care costs for people with disabilities are more predictable than those of a people without disabilities. This is because medical costs for people with disabilities are more often tied to chronic conditions that are more consistent over time; medical costs for people without disabilities are driven by acute health events, accidents, or short-term illness.⁵

Given the predictability of needs and costs among people with disabilities, having information on an individual's past and current functional status can greatly improve estimates for future costs of care. In Medicare, the payment methodology for skilled nursing facilities adjusts rates for each facility's particular population or "case mix," using a system known as Resource Utilization Groups (RUGs), which relies heavily on clinical assessment of functioning to predict costs.⁶ In Medicaid, about two thirds of all states (33) use RUGs to adjust Medicaid payment rates to nursing homes, and another seven states use their own state-specific risk adjustment models.⁷ In developing a risk adjustment model to predict health care costs for children with special health care needs, adding functional status data to the model increased the predictive ratio from about half to almost one, indicating near perfect fit.⁸ In addition, a report for the Society of Actuaries suggests that limitations in instrumental ADLs (IADLs), which could include the ability to manage medications or finances, prepare meals, use the phone, or climb stairs, are more predictive of health care costs than education, family size, occupation, marital status, ethnicity, employment status, tobacco use, body mass index, and self-reported mental and social health.⁹

Functional status information can also be used to improve the predictability of LTSS costs. Two states (New York and Wisconsin) use information on functional status to adjust capitation payments for MLTSS, which cover institutional care and home- and community-based services only. Both states use information on functional status (ADLs) and functional capacity (IADLs) to calibrate MLTSS payment using regression-based, risk adjustment models. These models have more predictive power than traditional models used to set managed care payment rates that rely solely on diagnosis. R-squared values for models in New York and Wisconsin range from 35 to 49 percent,¹⁰ whereas prospective diagnosis-based risk models for health care costs typically yield R-squared values that range between 15 and 27 percent.¹¹

Although taking functional status into account can significantly improve the predictive accuracy of a payment model, there are several limitations. Even the most comprehensive information on functional status cannot account for the following:

- **Will a person's condition improve, stay the same, or worsen?** Some conditions follow predictable patterns, while others do not. For example, individuals with spinal cord injury and cerebral palsy have relatively consistent care needs, while individuals with multiple sclerosis can follow a

Assessing the Fit of a Risk Adjustment Model

Risk adjustment uses statistical regression techniques to estimate the relationship between the characteristics of current or previous enrollees, and their expenditures. It then assumes this relationship holds for future costs, and capitation payments are adjusted accordingly. This brief uses two terms to describe how well a model and its variables predict actual costs:

- Predictive ratio refers to the average ratio of predicted cost compared to actual costs. A ratio of 1.0 means that the model predicts accurately for the group being measured.
- R-squared measures the proportion of variance in the outcome (in this case, cost) that is explained by the variables in a risk adjustment model. The higher the R-squared values, the more accurately the model predicts costs. But, because R-squared measures give extra weight to high-cost outliers, they do not reflect overall predictive accuracy of the model for groups of enrollees defined by common characteristics.

relapsing/remitting pattern. Dementia and Alzheimer’s disease progress at different rates in different individuals.

- **Will an intervention change someone’s condition?** The timing of interventions, as well as their efficacy, can greatly affect cost. For example, hip replacements can improve mobility for someone suffering from osteoarthritis, but with functional status information alone, the timing of a needed procedure is difficult to predict. In contrast, some states have policies that can determine the periodicity of costs. For example, rules that govern how often people can purchase durable medical equipment, like wheelchairs, could result in a predictable, reoccurring expense for authorized users.
- **Will a secondary disability complicate the primary one?** Secondary disabilities are conditions related to the underlying disability that cause additional debility. Examples include falls, urinary tract infections, pressure ulcers, and depression. Some but not all of this information can be found in medical diagnoses.
- **Will social or economic circumstances intervene?** Family structure, social connections, and availability of housing and financial supports can all play a role in an individual’s need for LTSS. For example, aging parents may increase the likelihood that an individual with developmental disabilities will need support outside of his or her family.
- **What long-term services and supports does an individual prefer?** Preferences for aggressive medical care or the use of family and other supports can vary by age, education, culture, sense of agency (that is, how empowered an individual feels to assert his or her preferences in a given environment), and outlook on life.

Implications for Rate Setting and Risk Adjustment

Given the diversity of the LTSS population, any attempt to develop a risk adjustment strategy for MLTSS should start by reviewing the characteristics of various subpopulations. States typically enroll one or more of the follow population groups in MLTSS: (1) seniors; (2) people with physical disabilities; (3) people with intellectual or developmental disabilities; (4) people with serious mental illness; and (5) children with special health care needs. In designing a payment strategy for MLTSS, states should explore patterns of costs and service use that go beyond these groups, and should look for associations between demographic characteristics and functional limitations. Subpopulations whose costs are similar can form the basis of a state’s rate cell structure.

States might also consider how to make the best use of functional assessment data to improve the accuracy of MLTSS rates. For example, the more frequently the functional assessment data are collected, the more precision it can lend to the trajectory of a condition. Incorporating functional data into a model as quickly as possible after it is collected can also improve the degree to which it can predict costs. Moreover, data that are collected over a longer time period also may shed light on the severity of functional limitations for people who are not currently using LTSS.

Regardless of how frequently functional assessment data are collected, it has several limitations. The data are collected from point-in-time assessments of an individual’s functional capacity that may change from day-to-day. The assessment can be subjective, depending on who conducts the assessment. Data may be incomplete depending on the perceived purpose of the assessment. Cultural or personal preferences (such as acceptance of, or strong desire to avoid, nursing home placement) can influence the degree of need reported by an individual. Temporal factors — such as the quality of a living space and its furniture, the individual’s temporary illnesses and level of energy, the availability of assistive technology, and the time of day — can influence the consistency of assessed need over time.¹² Assessment data also have the potential to be gamed. If managed care plans conduct the assessments and can influence the scores on which their payments are based, they have an incentive “up-code” the data by reporting higher needs in order to reap a more generous payment for an individual.

These biases and risks are not unique to functional assessment data; other data sources used in risk adjustment are also susceptible to errors and inaccuracy. Diagnosis data can be under-coded for certain stigmatized conditions (for example, serious mental illness or substance abuse). Claims reflect the services a person received, not what they needed. In addition, information on certain populations, like people with serious mental illness, can be limited, resulting in incomplete information for the MLTSS population as a whole.

Risk adjustment itself is also limited in its ability to predict cost. Risk adjustment models tend to simplify the characteristics of populations and their functional trajectories. Even with sound data, risk adjustment generally over-predicts the lowest costs and under-predicts the highest costs at the individual level. This can be challenging for managed care plans with smaller numbers of enrollees that cannot spread their costs across broad populations or product lines; for small managed care plans, outlying costs can have a large impact.

Conclusion

Predicting future LTSS need, and thereby expected cost, is a challenging endeavor. The population of LTSS users is diverse in their demographic characteristics, functional limitations, and personal preferences. When developing a rate-setting strategy for MLTSS, states should invest in analyses to understand the diversity of this population. They should also consider the degree to which functional assessment data could provide clues on future LTSS use. For some states, adding functional assessment data to a risk adjustment strategy may help set more accurate rates. For others, however, functional assessment data may not be of sufficient quality or completeness to be used in rate setting. In these cases, risk corridors or reinsurance may also be helpful tools to mitigate risk.

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 consumer groups to develop innovative programs that better serve people with complex and high-cost health care needs. For more information, visit www.chcs.org.

MEDICAID MANAGED LONG-TERM SERVICES AND SUPPORTS RATE SETTING RESOURCES

This brief is a product of CHCS' [Medicaid Managed Long-Term Services and Supports Rate-Setting Initiative](#), which is made possible by the West Health Policy Center to help states and other stakeholders advance rate-setting methods for MLTSS programs. Other resources on www.chcs.org, include:

- *Building Managed Long-Term Services and Supports Risk-Adjustment Models: State Experiences Using Functional Data*
- *Considerations for a National Risk-Adjustment Model for Medicaid Managed Long-Term Services and Supports Programs*
- *Developing Capitation Rates for Medicaid Managed Long-Term Services and Supports Programs: State Considerations*
- *Engaging Managed Care Plans in Rate Setting for Medicaid Managed Long-Term Services and Supports Programs*
- *Look Before You Leap: Risk Adjustment for Managed Care Plans Covering Long-Term Services and Supports*
- *Trust but Verify: Tennessee's Approach to Ensuring Accurate Functional Status Data in its Medicaid Managed Long-Term Services and Supports Program*
- *Strategies to Mitigate Risk in Medicaid Managed Long-Term Services and Supports Programs*

ENDNOTES

¹ Unless otherwise cited, the information in this brief is based: L. Iezzoni. "Diversity and Risk Adjustment for Disadvantaged Populations." Presentation to the West Health Policy Center MLTSS Rate-Setting Initiative. Center for Health Care Strategies, February 16, 2016.

² Medicaid and CHIP Payment and Access Commission (MACPAC). "Report to the Congress on Medicaid and CHIP. Chapter 2: Medicaid's Role in Providing Assistance with Long-Term Services and Supports." June 2014.

³ L. Iezzoni (ed). "Risk Adjustment for Measuring Health Care Outcomes. Chicago, IL: Health Administration Press, 2013, 4th edition.

⁴ Ibid.

⁵ T. Dreyfus and E. Davidson. "Risk Adjustment for Dual Eligibles: Breaking New Ground in Massachusetts." Massachusetts Medicaid Policy Institute, January 2012.

⁶ The current RUGs system (RUG-IV) has 66 separate groups, based on data from the resident assessment tool known as the Minimum Data Set (MDS 3.0), which all nursing homes must perform for all residents.

⁷ Medicaid and CHIP Payment and Access Commission (MACPAC). "States' Medicaid Fee-for-Service Nursing Facility Payment Policies." October 2014. <https://www.macpac.gov/publication/nursing-facility-payment-policies/>.

⁸ H. Yu and A. Dick "Risk Adjusted Capitation Rates for Children: How Useful Are the Survey-Based Measures." *Health Services Research*, Vol. 45, No. 6 pt. 2, December 2010.

⁹ S. Mehmud. "Nontraditional Variables in Healthcare Risk Adjustment." Report prepared for the Society of Actuaries' Health Section. Wakely Consulting Group, LLC, July 2013.

¹⁰ D. Lipson, M. Dominiak, M. Herman Soper, and B. Ensslin. "Developing Capitation Rates for Medicaid Managed Long-Term Services and Supports Programs: State Considerations." Center for Health Care Strategies, January 2016. Available at: <http://www.chcs.org/resource/developing-capitation-rates-medicaid-managed-long-term-services-supports-programs-state-considerations/>.

¹¹ R. Winkelman and S. Mehmud. "A Comparative Analysis of Claims-Based Tools for Health Risk Assessment." Report prepared for the Society of Actuaries. Denver, CO: Milliman, April 20, 2007.

¹² Dreyfus and Davidson, op. cit.