Functional-based risk adjustment for Medicaid Managed Long Term Services and Supports

Part 2: Development and implementation of functional-based risk adjustment[1]

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As the number of Medicaid Managed Long Term Services and Supports (MLTSS) programs has been increasing, significant momentum is also building around the development of tools to adjust managed care organization (MCO) payments using the functional, medical, and behavioral needs of their members. Such tools better match payment to risk and better align MCO and MLTSS program incentives. While the planning, development, and implementation needs of a functional-based risk adjustment (FBRA) mechanism are significant, the improvements realized in MLTSS programs are worth the effort.

FBRA improves payment structures based on location of care

The first FBRA paper in this series outlines several ways that adjusting MCO payments using FBRA can align MCO and MLTSS program incentives better than a payment mechanism based on members' locations of care. A primary objective of MLTSS programs is to improve member quality of life and reduce program costs by transitioning members from nursing homes to less costly home- or community-based care or by delaying admission into nursing homes as long as feasible. Medical necessity criteria and quality-of-care metrics help to ensure that appropriate care is provided to members regardless of the location of care.

Examples of better alignment of MCO and program incentives under FBRA include:

- Payments are better matched to member risk within a particular location of care level

- MCOs retain financial incentive to treat high functional needs members in the community

- Member transitions from institutional to community-based care are financially encouraged regardless of the timing of the transition

Currently, MLTSS programs in Wisconsin and New York incorporate FBRA models into their capitation payments. Both of these states apply FBRA to members eligible for a nursing facility level of care regardless of whether they are treated in the community or in the nursing facility. MCOs then retain the incentive to encourage care delivery in the most appropriate and cost-effective location of care specific to member needs regardless of the level of those needs.

While FBRA for these programs is only applied for members certified as requiring nursing facility level of care, it would also be possible to build an FBRA model for users of long-term services and supports (LTSS) not meeting nursing facility level of care criteria if a sufficient number of eligibles are covered under MLTSS.

Many LTSS programs utilize regular member assessments to determine service hour budgets for that member. Those assessment results can sometimes be useful to actuaries in making high-level adjustments in managed care capitation rate development, though such assessments may not be as well maintained or as predictive of costs once members enter a nursing facility.

FBRA model development process

There is a wide range of healthcare predictive modeling tools that vary in complexity and purpose. The two FBRA models actively used by MLTSS programs for MCO payment adjustment both have similar structures in that they are "additive" models applied on a prospective basis. That is, every modeled functional need or medical condition is assigned an additional cost factor. Then each member's risk score is calculated as the sum of those cost factors for any need or condition identified in a recent time period. An MCO's payment is adjusted by the aggregate risk score of its members, generally relative to other MCOs on a budget-neutral basis. The next section of this paper discusses model application in further detail.

Relative to other diagnosis-based model structures, this approach is straightforward to develop and easy to understand by program stakeholders. These models have also demonstrated high predictive power for users of LTSS in Wisconsin and New York FBRA model documentation, with R-squared values ranging from 35% to over 50%, depending on population. Following are two key considerations in the development of an FBRA model structure.

Consideration #1: What covered populations should have distinct models?
A large step toward improving the link between MCO payment and member risk may be achieved simply by developing separate payments by broad covered populations. For example, it would not be unusual for service costs for developmentally disabled, physically disabled, and frail elderly populations to be significantly different. This action can be taken even for a location of a care-based

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payment mechanism without implementing FBRA. However, care must be taken by actuaries to build resulting capitation rates that are consistent with the process and frequency actually used in assigning each member to a particular broad population group during the contract period.

Developing separate risk models for populations with materially different service utilization patterns will also leverage the effectiveness of FBRA in matching MCO payment to risk. For example, including an Alzheimer's diagnosis model factor for a frail elderly population and destructive behavioral factors for the developmentally disabled populations is likely to generate models with more predictive power than vice versa or relative to a single model.

It is worth noting, however, that a significant amount of data is required to develop a robust risk model, which limits the number of subpopulations that can feasibly have their own risk models. For example, the Wisconsin Family Care FBRA model utilizes the three population breaks outlined previously in this section, each of which has over 10,000 members from whose experience the three risk models are built.

Consideration #2: What variables should be part of the model?
Determining the variables that will be part of the risk model is an iterative process. Actuaries analyze historical data sources and service costs using statistical methods to determine which variables are most predictive of service costs. The least predictive variables are then typically eliminated from consideration, and the process is then repeated. The number of iterations ultimately completed depends on the desired trade-off between calculated predictive power and the size of the variable set. That being said, it is common for the predictive power of "the next best variable" to quickly drop off, with additional variables adding very little to the predictive power of the model. In addition, it is possible to "over-fit" a model to a particular data set by using a multitude of variables, which ultimately does not improve the predictive power of the model once a new data set is introduced.

Types of variables to be considered for inclusion in the model include:

- Functional needs such as activities of daily living (ADLs) and instrumental activities of daily living (IADLs). Model variables may be individuals' ADLs or they may be a count of applicable ADLs.

- Clinical service and care needs such as a skilled nursing level of care determination, ventilator dependency, or overnight care.

- Medical diagnoses such as Alzheimer's or mental illness.

- Potentially destructive behavioral patterns.

- Demographic factors such as gender or advanced age.

- Interaction terms between key variables that account for increased costs predicted when both variables are present beyond the sum of the costs associated with the individual variables.

- A constant "intercept" variable that represents the portion of predicted costs not assigned to any other variable.

FBRA model application
Part of the FBRA model development process includes analysis of how a potential model would affect program costs and individual MCO revenues. As mentioned previously, it is most common for Medicaid managed care programs to use risk adjustment on a budget-neutral basis so that total program costs are not affected. However, it is sometimes appropriate to also use risk adjustment to allow for uncertain future population care needs. This may occur for programs with voluntary member enrollment or changing eligibility requirements.

Budget-neutral risk adjustment mechanisms are generally applied on a prospective basis. That is, a risk score is calculated for each member using data from a time period prior to the contract period. Each MCO's individual member risk score is aggregated into a single risk score that is used in determining revenue adjustments for the contract period. The MCO risk scores are normalized to a 1.0 average risk score across MCOs in order to ensure budget neutrality to the program. A strong benefit of prospective risk adjustment is that each MCO generally will know its risk-adjusted capitation rates prior to the start of the contract.

A risk adjustment mechanism that includes consideration for changing population care needs is generally performed on a retrospective basis. While the process for determining MCO risk scores is similar to the prospective method, it is performed after the end of the contract period in order to incorporate actual population care needs. Such risk scores are not normalized to a 1.0 risk score. While this method captures the impact of changing population care needs, it has the negative consequence of MCOs and Medicaid agency staff not knowing what the ultimate MCO payment levels will be until after the end of the contract.

Regardless of the risk adjustment approach, it will need to be applied on a basis consistent with the capitation rate structure. That is, member risk scoring, aggregation, and normalization are applied for each MCO and rate cell combination. Because MLTSS programs typically will have few rate cells, this does not multiply work as much as it does in acute care programs with more rate cells.

Barriers to FBRA implementation

Implementing FBRA in an MLTSS program requires significant policy, process, and calculation efforts. Perhaps the largest potential implementation barrier is access to consistent and high-quality data for the risk adjustment process. Having sufficient access to detailed medical and pharmacy claims and eligibility records of sufficient quality is often not an issue for acute care risk adjustment. However, FBRA requires additional information on member functional and clinical needs that may not be stored in a manner that is easily accessible for frequent, system-wide analyses. In addition, member assessments may not be completed in the same time frame, in the same manner, or even with the same variables across MCOs.

Member assessments should be performed at least annually as well as any time there is a known, material change to member needs. This variability of and difficulty in access to member assessments is likely the single largest barrier to FBRA implementation.

As part of the planning for establishing FBRA, policies and processes need to be created to ensure consistent completion of member assessments among MCOs. This minimizes the potential for member needs level "upcoding," which generates inequities in member risk scores and, therefore, in how program revenue is distributed among MCOs. Policies that mitigate this issue include holding MCO staff training sessions, performing audits of MCO assessments, or requiring all assessments be performed by independent third parties. Requiring that member assessments are performed by government staff is a strong deterrent to inappropriate increases to member risk scores, both among MCOs and over time.

There are also significant technical efforts required for FBRA implementation. In addition to the model development and incorporation into the rate development process as described previously, best practice is to provide education to MCOs and Medicaid agency staff on the new risk adjustment mechanism. If regional or national MCOs administer the MLTSS program, they are likely already familiar with Medicaid managed care risk adjustment in acute care, which would ease the education efforts. There may also need to be Medicaid Management Information Systems (MMIS) changes if it does not have the capability to load separate MLTSS rates by MCO and rate cell.

Benefits of FBRA are worth the required effort

Developing an FBRA mechanism to adjust MLTSS capitation rates requires significant effort, and stakeholders may encounter difficult barriers to implementation. Indeed, there are many more nuances and considerations to take into account than are able to be addressed in this brief paper. Nonetheless, the improvements in program financial incentives and resulting member quality of life under FBRA are worth the required effort.

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