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Trexin Health Economics Series

Adjusting to Risk Adjustment

Competitive Advantage in a Post ACA World

Healthcare analytics have been conducted for decades in independent silos: actuaries, medical researchers, payers, regulators, pharmaceutical and device companies, and providers. This has resulted in a multiplication of George Bernard Shaw’s observation that “the United States and Great Britain are two countries separated by a common language.” Healthcare “risk” is coupled with “stratification,” “assessment,” “adjustment,” “standardization,” “sharing,” “capitation,” and many more. But, what risk? For actuaries, payers and many others, the risk is financial, with risk adjustment concerned with future resource use and “risk” is exposure to financial loss. For medical researchers “risk” is most often the probability of adverse outcomes like death or

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complication. Both of those concerns are natural and relevant. As we prepare for a post ACA world, a unified vision of risk adjustment can help us all improve individual health, quality of care and value, and competitive advantage goes to those who adapt more quickly.

What Should We Do with Uncertainty?

Risk adjustment attempts to remove uncertainty. Ordinary industrial production takes uniform inputs through a uniform process to a uniform outcome. Healthcare embodies a very different situation; varied inputs go through a varied process with a uniform output still the goal. Variation in a patient’s overall health state and different treatment options make it impossible to make a simple estimate of the probable cost and patient outcome. Population risk adjustment models are used to try to reduce uncertainty. They group people into any one of several hundred distinct groups to quantify and balance the risk of financial loss in an arbitrary population.

Successive generations of risk adjustment have shown improvement in the variation captured such that current models account for 10-15% of the variation. While this may be adequate for underwriting purposes, it points to the necessity of better models and better care, more than 80% of variation is unaccounted for and much of it could be reduced. The large residual variation coupled to much smaller sample sizes have made providers rightly suspect of the ability of current risk adjustment models to properly control for the risks they would accept in being assigned responsibility for the costs of patient care.

Understanding Uncertainty

Improving care, value and outcomes requires more than removing the chance of loss. It requires understanding uncertainty. Areas of greater variation represent opportunities for learning. A better understanding of variation in patient severity of illness can help us match the level of care to the patient. Models should encapsulate our best current understanding and point to areas for improvement. Those areas where the model fails are opportunities for learning. Statistical models are representations of some aspect of the physical world. We just

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need to choose what parts of the world to include in making predictions and what we try to predict. One of the great sources of variation in models for resource use is that we chose convenient rather than informative outcome measures. In traditional risk adjustment, yearly expenditure is a common outcome we choose to model. This is a convenient time frame for contracting but may be a poor choice in those areas where a single year does not represent a long enough exposure time to capture the course of illness.

Consider a simple example where a disease-related population has a 25% chance of hospitalization in any given year. Those hospitalized in a given year will be an order of magnitude more expensive than the others. And those others will over time take their turn in distorting the mean cost of care of the group. Over four years, most of the group will have been hospitalized and this time horizon will present a better, more informative, outcome perspective. If quality improvement were a goal here, models that tried to understand the risk of hospitalization in the group could be key. Other situations, like the risk of re-hospitalization, could help improve understanding of the population and lead to improved care. Outcomes other than cost, such as re-hospitalization in this example, could be additional important areas for risk adjustment models. We model situations with variation to understand them and use that knowledge to improve care and capture value.

The Opportunity

While we will continue to reduce the chance of loss that is the heart of traditional risk adjustment, improvements in value, health state and accountability can only come from improving our understanding of the variation in patient health state and needs. That variation

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in the process of care can then be used to achieve the desired uniform output but at a lower cost. Building smarter risk adjustment models with outcomes, time horizons and predictors that control for and reveal variation in the system are essential in the armamentarium of competitive advantage.



This TIP was written by Walter Linde-Zwirble, Chief Data Scientist, Health Economics. Walter welcomes comments and discussion on this topic and can be reached at walter.linde-zwirble@trexin.com. View Trexin's healthcare insights and expertise at www.trexin.com/healthcare.