



# Valuation of Care Management Vendors

By Ryan Coblentz and Rick Pawelski

Once upon a time, health insurance was relatively simple: policyholders went to the doctor or the hospital, and their insurer paid the bill; nothing more to it. Straight indemnity coverage was the way of the world. Rising medical costs changed that. As an increasing part of the U.S. gross domestic product and American workers' paychecks went to medical costs, it was in the national interest to do something about it. Individuals were not in a very good position to monitor cost trends across a range of procedures and providers or to negotiate their own prices, particularly when they were already in a doctor's office or a hospital bed. It fell to insurance companies to manage health costs on behalf of the patients, so as to provide the best value in terms of covered services and provider networks. The insurers called it managed care.

Managed care has been through many stages and iterations from the birth of the HMO to the determination of the Triple Aim, but the basic premise remains: it behooves the insurer to energetically manage the care delivered to its customers to make sure it is both medically effective and cost-effective. Meanwhile, the pace of medical change and innovation has only increased. It has become more difficult for any one organization to display best practices in the management of every type of medical care. It's hard enough to negotiate what is being paid for a typical trip to the doctor's office or a visit to each hospital in an insurer's network, let alone considering specialized segments of care delivery such as post-acute care, palliative care, treatment of end-stage renal disease, behavioral/medical comorbid diagnoses and so on. This landscape has prompted the growth of care management vendors, companies that specialize in measuring and managing the delivery of specific segments of medical treatment. These functions can be performed in-house, but insurers are also able to outsource such segments, bringing in

specialized expertise and processes that would otherwise take significant time and investment to develop internally.

Picture this: within a typical health insurance organization, a conversation is going on in a typical meeting room about an external vendor that may be hired—or has been hired—to manage a segment of care on behalf of the company. Two questions always come up:

- Will this drive a better clinical outcome for the member?
- How much money can we save by doing this?

We will leave the first question to the clinicians. The answer to the second question is often “I dunno, let's ask Actuarial,” which is a reasonable conclusion. With its expertise in claims and expense analysis, as well as modeling and projection, the typical actuarial department is uniquely prepared and positioned to answer this question, and that will be the focus of this article.

OK, Actuarial, what do you have for us?



## WHO ARE THOSE GUYS?

First, we have to figure out what to measure. Vendors can impact medical cost in a variety of ways. Examples include the following:

- **Utilization management.** The vendor manages a specific set of medical procedures, often delineated by listed procedure codes. Management may impact utilization based on medical necessity, appropriateness of the procedure for a specific diagnosis, medically redundant combinations of procedures or other scenarios. Changes in average utilization are measured in units per thousand members but, in the case of inpatient admissions, can also be measured in average length of stay. In the latter case, bundling claims, where a decrease in length of stay may not provide any dollar savings, should also be considered.
- **Site of care.** A vendor may shift specified types of care to less expensive venues. For example, if a certain procedure could be performed just as well at home or in the physician's office as in a hospital setting, management of that procedure could shift utilization from the most expensive place (the hospital) to one of the less expensive places.
- **Diagnosis or patient type.** Some vendor arrangements identify and manage patients receiving a certain type of care as determined by diagnosis, such as end-stage renal disease, pain management, medical/behavioral health comorbidity and so on. Savings are often measured based on all covered care provided to persons under management rather than for a limited set of specific procedures or diagnoses. The goal of these services is often to reduce unnecessary inpatient admissions or emergency department visits.
- **Severity/downcoding.** Some types of medical treatment are coded by severity levels, with higher payment made for greater severity. A vendor might identify and reverse inappropriate upcoding or "code creep," leading to a utilization shift from severe/expensive procedures to those that are less so.

The type of cost savings often determines how savings are quantified.

## THE BASICS

Measuring the effect of any medical savings initiative is pretty straightforward in theory: you take one group of people affected by the initiative and another group of people not affected by the initiative, then you measure the difference in total claim expenditures. All else being equal—and we'll get back to that assumption a bit later—the difference between the two groups is your savings.

Methods of various complexity may be used, often depending on the data available. These include:

- **Pre-/post-analysis.** A comparison of experience under the vendor arrangement (experience period) to a period of time before implementation (base period). In its most direct form, simple averages are calculated for each period, with an adjustment for trend between the periods. The primary shortcoming of this method of analysis is that adjustments for trend and other differences between the base period and the experience period introduce cumulative uncertainty over time, resulting in decreased confidence in measurements with each passing time period. At some point, another method may have to be used to measure savings accurately.
- **Participating/nonparticipating analysis.** Some initiatives do not affect all plausibly defined members. For example, some enrollment or opt-in process may be required, which not all members or groups will pursue. Other initiatives may be limited by region or some other category that does not affect members' risk or cost expectation. In this case one can define the control and test populations according to who is and who is not affected by the initiative. Again, in its most direct form, simple averages are used, and since both populations are measured in the same time period, trend is not an issue.
- **Regression/trend line analysis.** A more complex form of pre-/post-analysis in which a control population can be used to generate a formula, as with a regression formula; projected values are then compared to actual values and the difference between the two represents the savings.
- **Matched cohort analysis.** A more complex form of participating/nonparticipating analysis in which a number of variables that are expected to affect claims totals is generated and then used to match members of the test population to risk-equivalent members of the control population individually. The difference in costs between each matched pair represents the savings.
- **Propensity score matching.** A more advanced method of matching test and control members that estimates the predicted probability that each member receives a treatment based on observed characteristics. Bias from confounding variables is reduced, and dropped observations are minimized. However, a large sample size is required, and the selection of variables can affect the outcome.
- **Coarsened exact matching.** In this matching method, defining variables are coarsened into ranges or bins. This allows a greater degree of exact matches between test and control populations. The selection of variables is once again critical to the outcome of the exercise.

So that's it? No, I don't think so. Remember when we said, "all else being equal"? It's not. Not ever.

## ADJUSTMENTS

We actuaries sometimes seem to spend more time on the complicating factors than we do on the underlying problem. How many of you have read through any of the Actuarial Standards of Practice lately? Put your hands down, it was a rhetorical question. The point is, the devil is often in the details. When comparing two populations, material differences in risk between them must be considered. Accounting for these differences can be done through the adjustment of data or application of a neutralizing factor. When matching methods are applied, the selection of variables can account for those differences. There may also be changes in population or care management over the course of time. Material changes of this type must also be considered.

Such considerations include:

- **Scope.** When a vendor arrangement is defined by specific data, such as procedure codes, the definition of included procedures can change over time as new codes are added and others become obsolete. Such changes in scope must be documented regularly, and savings analysis must account for them.
- **Trend.** Over any significant period of time, changes in average cost per service must be accounted for. Changes in average utilization must also be considered—the effect of the vendor’s introduced care management should be removed by identifying market utilization based on nonparticipating membership, external benchmarks or some other source that is not significantly affected by the vendor.
- **Class of claims.** Will savings be measured in terms of billed dollars, allowed dollars, paid dollars or some combination? This may affect how calculations should be performed; for example, trend could have a higher impact on paid dollars than on allowed dollars due to copay leveraging.
- **Seasonality.** If data and/or projections do not comprise complete years, adjustments may have to be made for seasonal patterns in utilization.
- **Episodic care.** In some cases where a vendor’s activities are specific to a given set of procedures, there can be a corresponding effect on associated procedures not included in the vendor contract. For example, if specific types of surgery are managed, all other claims associated with the day of an outpatient surgery, or the admitted days of an inpatient surgery, should be considered in calculating savings.
- **Care shifting.** If an insurer is going to stop paying, or pay less, for a specific type of claim, it’s possible that provider behavior will respond by shifting care to other types of claims that have not been impacted by the vendor’s care management. For example, if the fictitious procedure HCPCS = AAAAA

has a near-equivalent procedure HCPCS = BBBBB, a certain amount of utilization that appears to have been prevented for AAAAA might simply shift to BBBBB. This possibility must be allowed for in savings projections.

- **Risk adjustment.** Average risk level may vary over time, between covered and noncovered populations, or between test and control populations. Where risk factors are available, they can be used to identify and adjust for such variance.
- **Overlap.** If multiple vendors or company initiatives affect the same types of claims for the same population, there is a risk of giving a vendor credit for savings generated, in whole or in part, by a different initiative.
- **Credibility.** Some vendor activities only affect a small number of people, or one might be analyzing a relatively short experience period. In either case, the credibility of the measured savings may be limited.
- **Delay in claim impact.** A care management initiative may not become fully effective upon implementation. It may take a while for providers’ practice patterns to reach full effectiveness or to build up a managed population when active enrollment in an initiative is required. This can have a pronounced effect on savings measurement in the first year and sometimes beyond that.

## YOU GET WHAT YOU PAY FOR—MAYBE

Once savings are determined for a care management arrangement, it is important to consider the price of that arrangement in determining its cost-effectiveness. Reimbursement to a vendor can take several forms, sometimes in combination:

- **Per member per month (PMPM) fee.** A fee paid for each eligible member for each month. Eligibility may be determined by line of business, participation in a program or any number of other methods.
- **Capitation.** Full risk for a specified population and/or specified types of care may be transferred from the payer to a vendor in return for a fixed payment PMPM. This payment model may limit the insurer’s realization of total savings, but calculation of those savings will help to determine the cost-effectiveness of the arrangement.

When comparing two populations, material differences in risk between them must be considered.

- **Risk share.** The vendor may be awarded a percentage of savings achieved. In this case, it is important for the savings formula to be agreed upon and contractually defined in sufficient detail to preclude disagreements over what the savings figure actually is.

External vendors are often measured in terms of return on investment—the ratio of savings divided by payments to the vendor. It is important to allow for all payments to the vendor in this calculation, preferably matching any values that appear on invoices.

Getting back to that typical meeting room in the typical health insurance organization, back on the first page of this article: when someone wants to know how a vendor program is doing, they may not fully understand the risk and complexity involved in answering that question. Without proper evaluation of the savings achieved by such programs, the prices paid to their vendors would be based on, well, the charity of strangers, perhaps? There would be no way of accurately quantifying the

impact of those programs on affected populations and therefore on the pricing of their insurance plans. Once quantified, that impact should feed into trending and forecasting discussions. These are all important functions for an insurer, and actuaries are uniquely positioned to participate in all of them. Consideration of the impacts, methods and considerations discussed here will help you if you're the one who picks up the phone when the people in that meeting room call. ■



Ryan Coblentz, FSA, MAAA, is a director of actuarial services focused on value-based care solutions for Highmark Health. He can be reached at [ryan.coblentz@highmarkhealth.org](mailto:ryan.coblentz@highmarkhealth.org).



Rick Pawelski, FSA, CERA, MAAA, is a manager of actuarial services focused on vendor financial management for Highmark Health. He can be reached at [rick.pawelski@highmarkhealth.org](mailto:rick.pawelski@highmarkhealth.org).