

## A Comparative Analysis of Claims-Based Tools for Health Risk Assessment 3M Comments

We appreciate the inclusion of Clinical Risk Groups (CRGs) in your evaluation of risk adjustment models. As you know, CRGs, a categorical clinical model, takes a very different approach to risk adjustment than do regression based models. Including the CRGs in a regression-based evaluation presented significant and not necessarily soluble analytic difficulties. We are pleased that despite the analytic challenges, the differences in results between the CRG approach and the regression based approaches were minor.

We did notice one counter intuitive result. Specifically, it is known that including prior cost improves predictions of future cost. This was true for the regression based models. However, when prior cost was added to the CRG model, its predictions did not improve. This implies that the information conveyed by prior service use is already contained in the CRG based prediction. We could understand this result if CRGs had a higher  $R^2$  than the regression based models. However, since the society did not find that CRGs had the highest  $R^2$ , the results from the addition of prior service use are counter intuitive.

The results of the various comparisons demonstrate that for both  $R^2$  and MAPE at the individual enrollee level the following:

1. The performance of all of the models is similar
2. As the  $R^2$  levels reported were on the order of 20 - 25%, the effectiveness of all of the models in reducing risk for health plans and insurers for individual beneficiaries, though improved since the first SOA report, is still low. In a study which quantified risk and related it to  $R^2$ , it was found that  $R^2$  levels of 80% or higher are required to effectively reduce risk (Vertrees, J. C., Tolley, D., & Manton, K. (1985). *Issues in capitation risk of financial ruin for providers and ways to control this risk*. Washington, DC: Health Program, Office of Technology Assessment, U.S. Congress.).
3. The MAPE results reinforce this point. The performance of the models is similar and the offered models have MAPE values, absent truncation, of 88% or higher.

In fact, if reducing risk (by matching payment to cost at an individual level) is the intent of these systems, none of them have a high enough  $R^2$ . This can be seen in the experience of the Medicare Advantage program which makes use of a regression based risk adjustment methodology to capitate health plans. When the program was first conceived, it was generally assumed that the incentives for cost control inherent in a capitated system would result in lower costs. However, Medicare Advantage payments now exceed what Medicare would expect to pay for the same beneficiary in the fee for service payment system.

We submit that failure to achieve cost control in the Medicare Advantage program is in large part due to the inadequacy of the risk adjustment methodology as a communication tool. Risk adjustment needs to do more than simply estimate risk. The problem that insurers, managed care plans, government payers, etc. face is how to use payments to improve performance along at least two dimensions, efficiency and quality. At the end of the day, these improvements require communication between managers and physicians. As stated in the Federal Register (May 4, 2001) effective communication of incentives is critical:

“The success of any payment system that is predicated on providing incentives for cost control is almost totally dependent on the effectiveness with which the incentives are communicated.”

Thus, the payment system needs to provide the foundation for effective communication if it is to be effective at cost control. Tools which can not easily and clearly communicate the financial impact of provider behavior will not be effective in changing that behavior.

The CRGs were developed to predict future service use and simultaneously to facilitate communication by providing a clinical language that is accessible to clinicians and non-clinicians. The ability to successfully communicate requires the use of mutually exclusive groups that define individuals and their severity of illness. Absent this, communication will be difficult as there will be no mutually understood framework to enable providers to respond to the incentives inherent in payments. A critical component in the evaluation of a risk adjustment system beyond statistical performance is its effectiveness as a communication tool.

Thank you again for including CRGs in the Society's evaluation.

