REFINING THE RISK-ADJUSTED CAPITATED PAYMENT METHODOLOGIES FOR MEDICARE PART C (CMS-HCC) AND PART D (CMS-RxHCC) PLANS USING THE MEDICATION EXPOSURE MEASURE (MEM)

Research Topic: Health Care Use and Policy Studies (HP)
Subtopic(s): Health Care Reimbursement (HR), Health Care Expenditure/Resource Use (HE)
Disease/Disorder: Multiple Diseases/No Specific Disease
Health Care Treatment: All Treatments or No Specific Treatment

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OBJECTIVES: The purpose of this study was to develop and test a measure of outpatient prescription medication utilization (medication exposure measure – MEM) that may be coupled with the CMS-HCC and CMS-RxHCC methodologies to improve CMS risk-adjusted capitated payments to Medicare Part C and Part D plans. The MEM should be more difficult for health plans and providers to manipulate compared with unique drug or prescription counts. MEM is operationalized as the average number of unique drugs that an individual possesses over a specified time period.

METHODS: The 5% Medicare national sample Parts A, B, & D (n=1,229,698) was used to estimate ordinary least squares regression models for prospective community payment to predict year-2 (2008) annualized medical (CMS-HCC) and pharmacy (CMS-RxHCC) expenditures from year-1 (2007) demographics, CMS model inputs, and the MEM. Gamma-distributed, log-linked generalized linear models were estimated for zero-inflated medical expenditure outcomes. OLS models were also estimated using truncated and log-transformed expenditures.

RESULTS: The CMS-HCC model (OLS $R^2=0.0698$) was only marginally improved by the addition of MEM ($R^2=0.0706$). The CMS-RxHCC model ($R^2=0.1485$; Grouped $R^2=0.3696$) was markedly improved by the addition of MEM ($R^2=0.2489$; Grouped $R^2=0.7692$). Further, the predictive ratios for pharmacy expenditure deciles show that the CMS-RxHCC+MEM model more accurately predicts in 8 out of 10 deciles compared to the CMS-RxHCC alone.

CONCLUSIONS: Although adding MEM to the CMS-HCC models used to predict medical expenditures does not appear to be a useful method of enhancing risk-adjusted payments, the MEM performed particularly well with the CMS-RxHCC model, predicting year-2 pharmacy expenditures. Pharmacy expenditures are generally less variable compared to medical expenditures, making improvements to prediction more difficult for medical models. Incorporating the MEM into Medicare Part D risk-adjustment models (CMS-RxHCC) would improve risk-adjusted capitated payments from both the perspectives of CMS and the health plans and mitigate adverse risk selection.

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