Using Predicted Therapy Visits in the Medicare Home Health Prospective Payment System

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Introduction

Under the Home Health Prospective Payment System (HHPPS), Medicare reimburses Home Health Agencies (HHAs) for each 60-day home health episode by providing a lump sum payment. The payment is case-mix adjusted for patient functional and health status and actual use of therapy services. The use of actual therapy services in determining payment may have incentivized the use of therapy services over other home health services.

Research Objective: To estimate a model that predicts therapy use based on patient and HHA characteristics rather than actual number of services, and to simulate payment using predicted therapy visits assuming all other components of the home health PPS remain the same. Estimating payment on predicted therapy utilization levels rather than actual visits would preserve the essential structure of the current payment system while addressing concerns about basing payment on the actual level of service provided.

Methods

Design and data sources: Secondary analysis of 100% of FFS home health claims representing normal episodes from 2012; linked to the Outcome and Assessment Information Set (OASIS), CMS Provider of Services (POS) file, and the CMS data from Chronic Condition Warehouse.

Study population: 5,554,520 home health episodes for 3,080,396 unique patients, provided by 5,728 HHAs (86 percent of all episodes).

Analytic approach:

- Two-part model separating the decision to provide any therapy visits (40 percent of all home health episodes do not include therapy).

- First stage used a logistic regression to estimate whether or not the episode provided therapy visits. Second stage used a truncated negative binomial regression (truncated at zero) to estimate the number of therapy visits conditional on providing any therapy.

- Characteristics included OASIS items and HHA characteristics, as covariates in both stages of the two-part model.

- Calculated simulated payments for each episode: mapped episodes into HHRs based on the predicted number of therapy visits instead of actual service use (retaining their 2013 functional and clinical levels and episode timing); mapped 2013 case mix weights to each episode’s actual and simulated HHRs; multiplied the payment weights by the 2013 base rate ($1397.73).

Results (N=5,554,520 Home Health Episodes)

- Therapy visits categorized into 9 groups
- Average HMA payment increases as more therapy services provided
- Spikes in percent of episodes around thresholds (6; 7-9; 16-17)

- ON average, predicted therapy visits are very similar to actual therapy visits, but there are large differences in therapy visits for some episodes
- 42% of episodes where actual versus predicted visits were in same category
- 31% of episodes moved to a higher therapy threshold
- Majority of episodes with 14+ therapy visits moved to a lower threshold

- Simulated episode payments higher for lower therapy episodes; lower for high therapy episodes
- Results in a difference of $1.178 billion (95% CI = $1.171 – $1.184), though ultimately changes in the payment system would be budget neutral, so only payment mix will change.

Conclusions/Limitations

- Home health payment could change substantially if reimbursement were not based on actual therapy services used.

- Prediction model did a poor job of predicting low and high levels of therapy (>1% of episodes were predicted to have 20+ therapy visits compared with 5.9% actually; the model predicted therapy visits for some episodes with zero therapy visits, which would result in Medicare paying for therapy when none was provided).

- Data used is based on system with current incentives in place and thus may not represent actual therapy needs.

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