The Inner Workings of the Patient-Center Medical Home Model

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This paper extends earlier work exploring the effect of Patient-Centered Medical Home (PCMH) reforms in primary care on healthcare utilization and outcomes along two important dimensions. First, we analyze data from primary care practices which adopted PCMH innovations between September 2008 and September 2012 and are able to follow patients between January 2008 and December 2013, resulting in a longer time series than has been available in other studies.

Additionally, previous studies have typically treated the PCMH model as an undifferentiated intervention, obscuring the fact that certification can be achieved through implementation of a wide variety of specific practice improvements, ranging from expanding office hours to improving patient monitoring IT. We employ granular data on the specific PCMH items adopted in order to assess the impact of specific components of the PCMH model, which have not previously been available to researchers.

However, the finest level of recognition data ("factors") is partitioned into 137 items on which practices were evaluated; because the treatment studied here is applied at the practice level, we encounter the problem that the number of regressors is nearly as large as (or in some specifications larger) than the number of clusters of observations (i.e. $k$ is larger than $n$). To address this, we use a hierarchical clustering approach to identify three broad categories of practices which adopted similar subsets of the PCMH factors. The first finding from the clustering exercise is that although each cluster of practices adopted different improvements, the average overall score in each cluster is similar and not statistically different. This suggests that the total score or level of recognition would serve as poor proxies for the inner workings of the PCMH model. Analyses using these indicators may obscure important differences between practices, masking the underlying mechanisms responsible for improvements in access, quality and cost of care.

We analyze claims data from Independence Blue Cross for patients enrolled in 134 primary care practices achieving PCMH certification between 2008 and 2012, totaling approximately 900,000 patients. The effect of a practice receiving National Committee for Quality Assurance (NCQA) PCMH recognition on enrolled patients’ primary care, specialist, outpatient and inpatient utilization, hospital readmissions, various cost categories and medication adherence is estimated for the various clusters using a difference-in-differences approach. All models control for time varying patient and practice characteristics and include either practice or patient fixed effects.

Preliminary results suggest that clusters emphasizing different areas of improvement yield benefits in these specific areas. For example, clinics investing in systems and processes for post-acute follow-up care reduce hospital readmission rates compared to practices who did not emphasize these PCMH factors. Similarly, practices invested in systems and processes for monitoring prescription drug use were relatively effective in increasing medication adherence for their patient population.

These findings suggest that early analyses of PCMH implementation may have missed improvements that took place in the years following initial recognition. Further, while the PMCH model has shown promise as a vehicle for improving primary care, its success may depend heavily on the specific attributes which practices choose to emphasize.