

Appendix

Table I: Full Model Estimates of Table II: Practice Patterns in Incumbents and Entrants

Covariate	(1)Pr($10 \leq \text{Therapy Visit} \leq 13$)	(2)Pr(Recertification)
<i>Year Fixed Effects</i>		
(2001)		
2002	-.00052 (.00278)	.0139*** (.0024)
2003	.0140*** (.0032)	.0251*** (.0028)
2004	.0208*** (.0033)	.0397*** (.0038)
2005	.0258*** (.0033)	.0440*** (.0058)
2006	.0244*** (.0037)	.0533*** (.0074)
2007	.0262*** (.0042)	.0686*** (.0085)
<i>Agency Characteristics</i>		
Number of Employees		
# Nurses	.000000 (.000012)	.000020 (.000018)
# Physical Therapists	-.000258*** (.000067)	-.00032** (.00013)
# Home Health Aides	-.000013 (.000063)	.00025*** (.000073)
<i>Patient Characteristics</i>		
Before HH Admission		
(Acute Care Setting)		
Staying Home	.0087*** (.0025)	.1734*** (.0051)
Another Agency	-.0042 (.0039)	.1453*** (.0073)
Clinical Limitation		
(Min)		
Low	.0282*** (.0022)	-.0167*** (.0028)
Mod	.0521*** (.0031)	-.0160*** (.0045)
High	.0510*** (.0053)	.0532*** (.0053)

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Covariate	(1)Pr($10 \leq \text{Therapy Visit} \leq 13$)	(2)Pr(Recertification)
<i>Major Diagnoses</i>		
Diabetes	-.0072*** (.0017)	.0519*** (.0023)
Essential Hypertension	.0046** (.0018)	.0056** (.0025)
Other Heart Condition	-.0110*** (.0018)	.0601*** (.0029)
Chronic Ulcer of Skin	-.0404*** (.0041)	.0791*** (.0049)
Osteoarthritis	.0462*** (.0035)	-.0254*** (.0045)
Cardiac Dysrhythmia	-.0083*** (.0024)	.0191*** (.0031)
Arthritis	.0384*** (.0057)	.0841*** (.0064)
Cancer	-.0433*** (.0030)	.0229*** (.0032)
Mental Disorder	-.0154*** (.0025)	.0500*** (.0029)
Pneumonia	-.0112*** (.0031)	-.0541*** (.0029)
Stroke	-.0193*** (.0045)	-.0343*** (.0041)
Dementia	-.0232*** (.0049)	.0256*** (.0073)
Congest Heart Failure	-.0051* (.0026)	-.0087** (.0034)
<i>Seasonality</i>		
(First Quarter)		
Second Quarter	.0050*** (.0017)	-.0070*** (.0011)
Third Quarter	.0054*** (.0018)	.0104*** (.0012)
Fourth Quarter	.0025 (.0016)	.0074*** (.0014)
Observations	550,460	1,140,543

Note: This table shows estimates of control variables not presented in Table II. Equations are estimated using an ordinary least squares regression. Standard errors shown in parenthesis are clustered on hospital referral region. In Column (1), we restrict the sample to episodes that provided 1 to 20 therapy visits.

* $p \leq 0.1$, ** $p \leq 0.05$, *** $p \leq 0.01$

Table II: Practice Patterns in Incumbents and Entrants

Covariate	(1)Pr(7≤Visit≤9)	(2)Pr(Visit=10)	(3)Pr(10≤Visit≤11)	(4)Pr(10≤Visit≤12)
Non-Profit (vs For-Profit)	.0219*** (.0035)	−.0086*** (.0026)	−.0196*** (.0036)	−.0348*** (.0050)
Entry under PPS	−.0177*** (.0038)	.0299*** (.0056)	.0467*** (.0087)	.0626*** (.0099)
Entry under PPS × Non-Profit	−.0017 (.0077)	−.0157 (.0095)	−.0099 (0.130)	−.011 (.015)
Observations	550,460	550,460	550,460	550,460

Note: Other control variables include patient characteristics (age, age-squared, race, gender, participation in Medicare Buy-In Program, indicators for where each patient stayed right before the home health admission, major health conditions, and level of functional and clinical limitation), agency characteristics (number of registered nurses, physical therapists, and home health aides, years of operation, and facility-based status), agency-level Herfindahl-Hirschman Index, seasonality, and HRR and year fixed effects. Equations are estimated using an ordinary least squares regression. Standard errors shown in parenthesis are clustered on hospital referral region. In regressions of Column (1) to (4), we restrict the sample to episodes that provided 1 to 20 therapy visits.

*p≤0.1, **p≤0.05, ***p≤0.01

Agency-Level HHI Calculation

We use a measure of concentration similar to what Zwanziger and Melnick (1988) and many other used (Burgess, Carey and Young, 2005; Keeler, Melnick and Zwanziger, 1999). We called it as agency-level HHI (which measures concentration at an agency-level). To calculate agency-level HHI, we made one modification from Zwanziger and Melnick (1988)’s approach: we used county-level HHI, instead of zip-code level HHI, to calculate the provider-level HHI. More specifically, we used the following standard method for the calculation of agency-level HHI:

$$AgencyLevelHHI_j = \sum_{c=1}^C \frac{n_{jc}}{N_j} \times HHI_c \quad (1)$$

where n_{jc} refers to number of patients seen by agency j in county c . N_j refers to number of total patients seen by agency j . HHI_c denotes county-level HHI.

References

- Burgess, J. F., Carey, K. and Young, G. J. (2005). The effect of network arrangements on hospital pricing behavior, *Journal of Health Economics* **24**: 391–405.
- Keeler, E. B., Melnick, G. and Zwanziger, J. (1999). The changing effects of competition on non-profit and for-profit hospital pricing behavior, *Journal of Health Economics* **18**: 69–86.
- Zwanziger, J. and Melnick, G. (1988). The effects of hospital competition and the medicare PPS program on hospital cost behavior in california, *Journal of Health Economics* **7**(4): 301–320.