



Health insurer market power and primary care consolidation



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HIGHLIGHTS

- We examine health insurer market concentration and primary care physician practices.
- Increasing insurer concentration alters the structure of a primary care practice.
- Increasing insurer concentration raises the number of physicians at a practice.
- Increasing insurer concentration reduces a practice's competitive position.
- Increasing insurer concentration leads to hospital ownership in physician practices.

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ABSTRACT

This paper analyzes how health insurance market concentration impacts the market structure of primary care physicians. In more concentrated insurance markets, physicians are found to work in larger practices and their practices are more likely to have a hospital with an ownership interest. Physicians are also less likely to report being in a competitive physician market, consistent with practice consolidation. Our results suggest that consolidation in insurance markets impacts the competitive structure of physician markets.

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1. Introduction

Economists are interested in how firms alter their market structure to gain pricing power and bargaining leverage. Such behavior was observed in the health care industry which underwent consolidation after the introduced managed care in the 1990s (Feldman et al., 1999; Robinson, 2004). Through negotiations and contracts with preferred hospitals, insurers with managed care arrangements were able negotiate lower hospital prices (Morrisey, 2001; Wu, 2009). Hospitals found that they could counter-act insurer market power with fewer competing hospitals (Melnick et al.,

1992; Dranove et al., 2008) resulting in a wave of hospital consolidation (Vogt and Town, 2006).¹ While the early years of managed care focused on the interaction of insurers and hospitals, in the past decade, insurer consolidation has become a concern of physicians who exert substantially less negotiating leverage over prices than hospitals, often placing them on the losing end of negotiations (Foreman, 2003).

Outside the hospital industry, little is known about the relationship between insurer concentration and provider behavior. Early work by Baker and Brown (1999) found that insurer concentration led to consolidation among mammography providers. For physician markets, greater consolidation is associated

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¹ For examples, see Capps and Dranove (2004), Dafny (2009) and Moriya et al. (2010).

with an increase in reimbursement mechanisms that reduce physician financial risk, generate larger revenues, and overall increase negotiated prices for physician services (Town et al., 2011; Baker et al., 2013). While physician consolidation may counteract the market power of insurers and reduce the average cost of operations, there is deficiency in our knowledge of how insurer consolidation affects physician practices. Following the playbook from hospitals, physicians should be more likely to merge into larger practices or may affiliate with hospitals when faced with greater insurer concentration. In this paper, we examine this hypothesis by examining how insurer concentration affects the market structure of primary care practices (PCPs).

2. Data

This study uses 2008 data from a nationally representative survey of PCPs, the 2008 Restricted Health Tracking Physician Survey (HTPS), which was administered to 4700 physicians and includes a broad range of questions about the organization and practice of medicine. The physicians examined in this study are solo and group practice physicians who spend the majority of their patient care time in a primary care specialty ($N = 1455$), with practice locations in metropolitan statistical areas (MSAs), and with complete data ($N = 1181$). Other data used in the analysis include: the 2008 health insurer market concentration data from the 2010 AMA Report on Competition in Health Insurance, contemporaneous area controls from the Area Resource File, and firm numbers and employment data from the Census Bureau. Given data availability and in keeping with existing studies the MSA is treated as the relevant geographic market (Pauly et al., 2002; Kopit, 2004; Bates and Santerre, 2008).

3. Methods

To evaluate the effects of insurer market concentration on physician practice structure, this study utilizes health insurance Herfindahl–Hirschman Indexes (HHIs) based on enrollment data in managed care (health maintenance organization and preferred provider organization plans) in MSAs for the 2008 calendar year.² The HHI is defined as the sum of squared market shares of health insurers within the market, ranging from 0 to 10,000 with 0 representing perfectly competitive insurers and 10,000 representing only one insurer. For all analysis, the HHI is log transformed for the ease of interpretation.

To evaluate whether insurer HHI alters PCP practice structure, three dependent variables are examined. The first dependent variable is the number of physicians working at the responding PCP's practice, coded as 1 through 8 or more. The second dependent variable is a binary for whether a hospital/hospital group has an ownership interest in the responding PCP's practice. The third dependent variable is a measure of the physician's perceived market power, namely, the responding PCP's description of the competitive situation their practice faces whether it is 'not at all competitive', 'somewhat competitive', or 'very competitive' (Town et al., 2011).

For our analysis, HHI is treated as endogenous because of measurement error and potential reverse causality. Evaluating data sources for insurer HHI available to researchers, Dafny et al. (2011) found substantial year to year volatility in HHI suggesting that they

are subject to measurement error. Without correction, the measurement error will lead to attenuation bias. In addition, we cannot rule out endogeneity from reverse causality between our outcome measures and insurer HHI because greater levels of physician consolidation and hospital affiliation will provide PCPs with greater negotiating leverage against insurers. Health care provider market power will in turn provide insurers with incentives to merge.

To correct for the endogeneity of HHI, this study uses logged MSA measures of the average number of employees per firm and the number of firms as simultaneous instruments. The number of firms in each MSA should be correlated with insurer HHI because the vast majority of insurance in the United States is employer based (61.6% in 2007 Cohen et al., 2009) and a larger number of employers provide a wider client base to support multiple insurers. Employees per firm as a measure of employer size should be positively correlated with insurer HHI, given that larger firms can negotiate premium concessions from insurers, reducing their profitability and incentives toward entry. Furthermore, we foresee no theoretical reason why each of these instruments should be related to or influence physician practice structure. These instruments pass weak instruments tests (F -tests) and similar measures are used as instruments or explanatory variables in studies examining insurer HHI and managed care penetration (Bates and Santerre, 2008; Dranove et al., 1998; Baker and Brown, 1999; Town et al., 2007) and are considered exogenous to measures of physician and hospital consolidation (Dranove et al., 2002).

Given the ordered nature of each outcome, they are evaluated with ordered logit models using two stage residual inclusion (2SRI) which accounts for the endogeneity in HHI (Terza et al., 2008):

$$P(Y_i > j) = \frac{e^{[\alpha_j + X_i\beta + \beta_1 r_i + \beta_2 \ln(\text{HHI}_i)]}}{1 + e^{[\alpha_j + X_i\beta + \beta_1 r_i + \beta_2 \ln(\text{HHI}_i)]}}, \quad j = 1, 2, \dots, M - 1$$

where i and j index the physician and outcome variable, respectively, X_i represents a vector of control variables, r_i represents the residual of the first stage OLS regression:

$$\ln(\text{HHI}_i) = X_i\gamma_0 + \gamma_1 \ln(\text{employees per firm}) + \gamma_2 \ln(\text{firms}) + r_i$$

and β_2 represents the key parameter of interest.³

Physician characteristics included in each model include the natural log of the PCP's years in practice, the PCP's gender and practice specialty (whether internal medicine, family/general practice, or pediatrics). To account for differences in practice structures which may be correlated with serviced populations, each model includes the health status of serviced patients through a set of binaries for whether the practice routinely treats patients with asthma, diabetes, depression, or chronic heart failure, and demographics for the percentage of minority patients. While existing studies indicate that PCP practices are typically unconcentrated ($\text{HHI} < 1500$) (Kleiner et al., 2012; Baker et al., 2013) and are unlikely to wield substantial market power against insurers, we include county level controls which should be associated with physician market power. Given that patients are extremely sensitive to distance to practice when choosing a care provider (Schultz et al., 2002), we include the number of physicians per capita, whether the entire county was designated as a health professional shortage area, and the county physician density. Additional control variables included in each model are the county percentage of Medicare and Medicaid eligibles, rural/urban continuum controls, and census regions.

When the dependent variable is the number of physicians, a positive and statistically significant coefficient for the log of insurer HHI would indicate that more concentrated insurance markets are associated with a larger number of physicians in a PCP's practice.

² Insurer mergers are announced and approved prior to the merger. This will give time for physicians to react to announcement of a merger prior to actual changes in HHI. Therefore, our main results are reported using contemporaneous HHI and physician survey responses.

³ Results for this first stage regression are reported in Appendix A-1 column 1.

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