Insurer Participation in Rural Health Insurance Marketplaces: Are Some Markets Intrinsically More Competitive Than Others?

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Purpose

Recent policies aiming to improve existing individual insurance markets have relied on market competition. However, the success of such an approach depends on the presence of at least a handful of insurers in each local market. This brief reports on analyses of insurer participation data in three market-based health insurance programs (the Federal Employees Health Benefits Program [FEHBP], Medicare Advantage [MA], and Health Insurance Marketplaces [HIMs]) to assess the extent to which participation in HIMs may be associated with prior levels of local market competition, holding constant other relevant factors such as population measures.

Key Findings

- HIM market concentration in 2014 was generally lower as population density increased, i.e., rural markets were more concentrated. In 2017, the pattern continued to hold, with those counties that still attracted several insurers averaging the lowest prior-year FEHBP Herfindahl Index.

- In 2014-17, the number of HIM insurers was correlated with the level of FEHBP market concentration as measured by the Herfindahl Index (where 100 equals complete concentration). For example, among counties with fewer than 10 persons per square mile, the 2013 FEHBP Herfindahl Index averaged 45.5 for the counties that had only one firm participating in HIMs in 2014 but only 34.0 for the counties that had seven or more HIM insurers in 2014.

- Prior FEHBP market concentration is a significant predictor of low insurer participation in HIMs, holding other factors constant, with the magnitude of the effect increasing from 2014 to 2017. A county with a one-point greater FEHBP Herfindahl Index in 2016 was 3.4 percent more likely to have low participation in the 2017 HIMs, up from 1.8 percent in the 2014 HIMs. This finding suggests that an underlying level of competition, based upon historic and/or institutional factors, plays a role in HIMs' success or lack thereof in rural places.

Background

The Patient Protection and Affordable Care Act of 2010 established HIMs as a mechanism to improve the functioning of existing individual insurance markets. Standardizing coverage options and pricing across geographic rating areas was meant to encourage consumer engagement, which in turn would reward insurers who provided the best product at the lowest cost with increased market share. However, this model relies upon the presence of at least a handful of insurers from which beneficiaries in each local market can choose. Over the first five years of HIMs, rural counties have often struggled to attract sufficient numbers of HIM insurers.[1]

HIMs were modeled on the FEHBP, offering coverage for federal employees and retirees since 1965.[2] Although a few FEHBP plans operate at the national level (i.e., are available to all federal workers in every county in the United States), many more operate at a local or regional level. The latter,

known as state-specific plans, often pick and choose counties in which to offer plans in a manner that is similar to the current data on plans offered in HIMs.[3] The MA program, through which private insurers offer coverage to Medicare beneficiaries, has operated under various names since 1985 and currently serves about 30 percent of all Medicare beneficiaries.[4] However, there is an urban/rural gap in MA enrollment and availability, with people in rural counties typically having fewer options—and sometimes no options.[5]

While the evidence in all of these markets clearly points to rural places having less competition, it is less clear whether this is solely due to the limitations of small populations and low population density. We use data from all three markets to assess whether, apart from population measures, some markets may be intrinsically less competitive than others.

Data and Methods

To perform the analysis, several datasets for 2013-17 were combined: HIM plan availability files, MA availability and enrollment files, and FEHBP availability and enrollment files were merged at the county level. The HIM data on Federally Facilitated Marketplaces come from the Centers for Medicare & Medicaid Services (CMS),[7] supplemented by State-Based Marketplace data gathered by RUPRI. The MA data also come from CMS.[8] The FEHBP data were obtained through a Freedom of Information Act request. We also used the Area Health Resource File, 2015-16, to provide additional county-level information on population density and numbers of providers.[9]

The Herfindahl Index is a measure of competition, or lack thereof, in a given market (see box). We calculated the Herfindahl Index for MA and FEHBP markets for each county in 2013-16.

Descriptive methods were used to characterize insurer participation in HIMs, augmented by logistic regression analysis. In previous research, we determined that the level of competition needed to have a significant effect in terms of restraining premium growth is at least three firms.[10] Hence, we analyzed the factors that may impact a county's chances of having at least three firms in the market.

> **THE HERFINDAHL INDEX of COMPETITION**
> The term Herfindahl Index refers to the "Herfindahl–Hirschman Index," a common measure of market concentration calculated by squaring the market share of each firm and then summing the resulting numbers. For example, for a market consisting of four firms with shares of 30, 30, 20, and 20 percent, the index is .26 ($.30^2 + .30^2 + .20^2 + .20^2 = .26$), multiplied by 100 in this brief for ease of reporting to become 26. The index takes into account the relative size distribution of the firms in a market, approaching zero when a market is occupied by a large number of firms of roughly equal size and reaching a maximum of 100 when a market is controlled by a single firm. **The Herfindahl Index increases both as the number of firms in the market decreases and as the disparity in size among those firms increases**. Thus, it rises as markets become less competitive.[6]

Logistic regression allows the reporting of odds ratios for each variable tested; these values convey the change in odds of the outcome (low HIM participation) if county characteristics change. The following variables were tested: prior-year Herfindahl Indices for FEHBP and MA markets, metropolitan status of the county (based upon Urban Influence Codes[11]), population density of the county, total population of the county, number of primary care physicians per capita, and number of specialist physicians per capita. The reason for incorporating several ways of measuring "rurality" is that theory points to different aspects of low population as being relevant to insurers' decisions: small overall populations suggest small risk pools, which may discourage insurers, while low population density specifically implies that formation of reasonable provider networks may be challenging. Low numbers of providers per capita would tend to magnify the latter problem.

Results

Over the first four years of HIM operation, 2014-17, there was significant entry and exit of insurers in both urban and rural counties.[12] In 2017, data began to show signs of weakening insurer participation, especially in rural counties and in states that did not implement Medicaid expansion.[1] Because the areas of concern are nearly always counties with lower populations (although there was still heterogeneity in insurer participation within this group) we focused descriptive analysis on those

Table 1. Prior Market Concentration in Low-Population-Density Counties, 2014 and 2017, by HIM Insurer Participation

	Number of firms	0 to <10 persons per sq.mi.		10 to <25 persons per sq.mi.		25 to <50 persons per sq.mi.		50 to <100 persons per sq.mi.	
		Number of counties	Prior FEHBP Herf. Index	Number of counties	Prior FEHBP Herf. Index	Number of counties	Prior FEHBP Herf. Index	Number of counties	Prior FEHBP Herf. Index
2014	1 firm	29	45.5	100	41.3	128	39.5	115	37.9
	2 firms	197	42.7	167	32.9	192	33.6	143	32.8
	3-4 firms	278	40.0	185	34.1	283	35.3	282	34.1
	5-6 firms	44	30.4	20	29.7	27	31.4	26	32.3
	7+ firms	12	34.0	10	28.2	6	27.3	12	21.7
2017	1 firm	128	38.0	174	33.6	268	34.6	215	34.6
	2 firms	273	39.9	192	32.9	196	32.9	183	33.3
	3-4 firms	141	35.8	111	31.7	157	32.4	165	30.2
	5-6 firms	18	33.7	5	28.7	14	27.2	15	22.0
	TOTAL	560		482		636		578	

counties with population densities below 100 persons per square mile, because these areas represent the most sparsely populated rural areas. Table 1 shows that, within a given population density category, the number of insurers was correlated with the level of FEHBP market concentration. For example, among counties with fewer than 10 persons per square mile, the 2013 FEHBP Herfindahl Index was 45.5 on average for the 29 counties that had only one firm participating in HIMs in 2014, but the index was only 34.0 on average for the 12 counties that had seven or more insurers in 2014. Note, also, that market concentration was generally lower as population density increased. In 2017, the pattern continued to hold, with those counties that still attracted several insurers averaging the lowest prior-year FEHBP Herfindahl index. The descriptive findings are useful, but regression analysis is needed to estimate the impact of each specific variable while controlling for others. Specifically, we estimate a model that also controls for various population measures in order to help identify which aspects of rural places may be most related to insurer participation challenges.

Table 2. County Characteristics Associated with Low Insurer Participation in HIMs

	Odds of Low (<3) Insurer Participation in HIMs Associated with Characteristic				
County Characteristic	**2014**	**2015**	**2016**	**2017**	**Interpretation (for 2017 Value)**
County is metropolitan	**0.788**	**0.594**	**0.678**	**0.655**	A metro county was 65.5% as likely (34.5% less likely) to have few (1 or 2) firms compared to a nonmetro county.
Prior-year FEHBP Herfindahl Index (0-100) for county	**1.018**	**1.022**	**1.039**	**1.034**	A county with a one-point greater FEHBP Herfindahl Index (more market concentration) was 103.4% as likely to have few firms in HIMs.
Prior-year low availability of FEHBP state-specific plans	**1.394**	1.109	**1.283**	**1.586**	A county with few (<4) state-specific FEHBP plans in 2013 was 158.6% as likely to have few firms compared to a county with 4+ state specific FEHBP plans.
County population, in thousands	**0.999**	0.998	**0.997**	**0.999**	A county with 1000 more residents was 99.9% as likely (0.01% less likely) to have few firms compared to the county with a smaller population.
County population density, in thousands per square mile	0.812	0.321	0.972	**0.829**	A county with 1000 additional people per square mile was 82.9% as likely (17.1% less likely) to have few firms compared to the county with lower population density.
Primary care physicians per 1000 population in county	0.905	0.895	**0.763**	**0.742**	A county with one additional primary care physician per 1000 population was 74.2% as likely (25.8% less likely) to have few firms in the HIMs.

Note: Bold odds ratios are statistically significant.

We found that many of the population measures were in fact significant in their own right, as expected (Table 2). Furthermore, even when controlling for these measures, prior FEHBP market concentration was a significant predictor of low insurer participation in HIMs. In addition, as the initial uncertainties of HIMs began to resolve, from 2014 to 2017, the magnitude of the effect increased. A county with a one-point greater FEHBP Herfindahl Index in 2016 was 3.4 percent more likely to have low participation in the 2017 HIMs, up from 1.8 percent in the 2014 HIMs. This finding suggests that an underlying level of competition, based upon historic and/or institutional factors, plays a role in HIMs' success or lack thereof in rural places.

Two variables were not significant factors in any of the four years: neither the prior-year MA Herfindahl Index nor the county-level number of specialist physicians per capita was associated with a change in the odds that a county would have low HIM insurer participation.

Discussion

Years of evidence across three market-based health insurance programs clearly indicates that rural places are less competitive. Our findings suggest that while this is due in part to the limitations of small populations, low population density, and fewer available providers, other factors are also at work. The FEHBP Herfindahl Index is a proxy for a multitude of historical factors that may relate to the presence and type of hospital systems, the policy environment at the state level, the entrenchment of certain insurers who were early entrants to the private market,[13] the payer mix, and even the specific geography in terms of terrain and infrastructure.

The lack of a relationship between the MA market and the HIMs is also notable. This may be partly explained by the fact that these two markets are almost entirely separated in terms of enrollment: MA primarily enrolls adults aged 65 years and older, while HIMs enroll anyone younger than 65. Furthermore, the payment mechanism and risk adjustment are quite different, with MA insurers able to bid against a known benchmark and receive significant adjustments to payment to account for a riskier-than-expected set of enrollees. Consumers making decisions already have the majority, if not all, of their premium covered by Medicare, which weakens their price-shopping behavior. These differences likely make MA more attractive for insurer participation, compared to a more lean design.

This work has some limitations. In particular, using the FEHBP Herfindahl measure of competition to describe prior levels of competition or market concentration does not account for the fact that federal employees are not distributed uniformly in the country, so some areas that attract significant competition in the FEHBP should not be expected to perform similarly in HIMs. Future research is needed to better understand the underlying issues that are driving these findings as well as their potential to be addressed through changes in State or Federal policy. It may be that the answers are different in different rural places, and a better understanding of this nuance is needed as well.

Notes

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