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Consumer Governance and the Provision of Enabling Services that Facilitate Access to Care at Community Health Centers

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Abstract

Background—Federally qualified health centers (FQHCs) are primary care clinics, governed by a consumer majority, which accept patients regardless of ability to pay and provide non-clinical enabling services that facilitate patients' access to care. Understanding how FQHCs decide which services to provide is important, because enabling services are not typically reimbursed.

Objective—To model enabling service provision as a function of FQHC board composition.

Methods—FQHC-level data were drawn from multiple years of the Uniform Data System (2002 – 2007), and merged with county-level data from the Area Resource File (2002 – 2007) and board data from FQHC grant applications (2003 – 2006). The scope and volume of enabling services an FQHC provides are modeled as a function of board composition, executive committee composition, the interaction between them, general time trends, and other FQHC and county-level controls.

Results—The proportion of consumers on the *board* does not affect the scope of enabling services, but the proportion of descriptive consumers (who resemble typical FQHC patients) on the *executive committee* is associated with a significant increase in the scope of enabling services a health center provides. Neither the proportion of consumers on the board nor the proportion of consumers on the executive committee affected the volume of enabling services provided.

Conclusions—Consumer governance, specifically on the executive committee, plays a small role in determining which enabling services an FQHC provides, but more work is needed to identify factors associated with variation in the scope and volume of enabling services across FQHCs.

Keywords

Community Health Centers; Governing Board; Access to Health Care; Enabling Services

Introduction

Federally qualified health centers (FQHCs) are primary care clinics, serving predominantly underserved populations. Today, 1,200 FQHCs provide care for approximately 20 million patients, nearly 72% of whom are in poverty and either uninsured (37.5%) or enrolled in

Medicaid (38.5%).¹ FQHCs accept all patients regardless of ability to pay and provide enabling services that reduce barriers to health care access. Enabling services, which include transportation, on-site child care, case management, and translation services among others, provide economic, health and social benefits to recipients,² but are poorly reimbursed by public or private insurance³ and frequently eliminated when resources are limited.⁴⁻⁷ Therefore, understanding how FQHCs decide which enabling services to provide is important. By law, the FQHC governing board makes such decisions.

FQHC governing boards must consist of at least 51% FQHC consumers, which has long been assumed to make FQHCs more responsive to their patients' needs.⁸⁻¹⁰ According to representation theory, descriptive representation (representatives sharing salient traits with those they represent) may lead to substantive representation (representatives advocating for those they represent).¹¹⁻¹⁴ Thus, assuming patients value enabling services, consumer governance should be positively associated with FQHCs providing them. However, while governance is a widely studied topic, the relationship between consumer governance and outcomes has not been studied.¹⁵⁻¹⁹

This study examines the relationship between the proportion of consumers on the board and the scope and volume of enabling services provided by the FQHC. The percentage of board members who are descriptive consumers (who resemble the typical FQHC patient) is expected to be positively associated with enabling service provision. Furthermore, executive committee composition may moderate this relationship.²⁰ While the executive committee (chair, vice chair, secretary, treasurer) is comprised of board members, this group is authorized to act on behalf of the full board, typically runs board meetings, and decides which agenda items to include (or exclude). Consumers on the executive committee may enhance, while their absence may limit, the influence of other consumer board members.

Methods

Data Sources

FQHC-level data were drawn from years 2002 – 2007 of the Uniform Data System (UDS), which is collected annually by the Health Resources and Services Administration (HRSA). The UDS contains data on FQHC patient demographics, staffing, scope and volume of services, number of delivery sites, caseload, and finances. Since 2005, select variables were deemed proprietary and no longer released. However, complete UDS data through 2007 were obtained through a data use agreement with the George Washington University under the authority of Congressman Henry Waxman.

HRSA also compiles data from a variety of sources to create the Area Resource File (ARF). The ARF contains county-level data on health care supply and community characteristics. ARF data for years 2002 – 2007 were merged with the UDS data using Federal Information Processing Standard codes.

Finally, board member data from years 2003 – 2006 of FQHC grant applications were merged using UDS identification numbers. These data, obtained by Freedom of Information Act request, contain board members' names, consumer status, board tenure, board office

held, and occupation. Using their consumer status and occupation, in conjunction with occupational wage data from the Bureau of Labor Statistics, consumers were differentiated into two groups on the basis of the average income level for their occupation. Those with incomes exceeding 200% of poverty were classified as non-descriptive consumers (who do not resemble the typical FQHC patient). All others, including those whose occupation could not be classified (approximately 10% of the sample), were considered descriptive consumers (who resemble the typical FQHC patient). The methods for categorizing board members into these groups are described in more detail elsewhere.²¹ The data were collapsed to the FQHC level yielding the percentage of board members comprised of non-consumers, non-descriptive consumers, and descriptive consumers.

Exclusion Criteria and Missing Data

FQHCs include community health centers (CHCs) and migrant health, health care for the homeless, public housing, and school-based health center grantees. Grantees are eligible for a waiver of the consumer governance requirement if, and only if, they receive no CHC funding.²² Waiver-eligible FQHCs were excluded from this study, while CHC grantees with other FQHC funding were retained and flagged to indicate additional funding sources. The analysis was limited to fully operational federally-funded FQHCs by excluding centers without at least 1 full-time medical provider, at least 1 full-time administrative staff person, and at least 5,000 annual patient encounters.²³ FQHCs in the U.S. Territories were also excluded.

Using these criteria, 952 FQHC-Year observations were excluded, leaving a starting sample of 4,716 FQHC-Years representing 907 unique FQHCs. However, as Table 1 shows, the sample is constrained by the grant application data, which were received for 71.4% of FQHCs.

An analysis of missing data indicated that the sample was largely representative. However, FQHCs missing data are likely to be more financially efficient, have lower costs relative to revenues, and derive a greater share of revenue from grant funding.

Analysis

Using these data, the scope and volume of enabling services an FQHC provides are modeled as a function of board composition, executive committee composition, the interaction between them, general time trends, and other FQHC-level and county-level factors, and can be represented by Y in the equation:

Main Regression Equation

$$Y_{ijt} = \alpha_0 + \text{Consumer}_{i(t-1)}\beta + \text{Office}_{i(t-1)}\chi + \text{Consumer} * \text{Office}_{i(t-1)}\delta + W_{it}\gamma + T_t\lambda + \mu_i + \varepsilon_{it}$$

where j designates the scope or volume of enabling services, i identifies the health center and $t=1, \dots, T$ indicates the year between 2004 and 2007. *Consumer* is a matrix containing the categorical measure of the proportion of the board consisting of descriptive consumers, non-

descriptive consumers, and non-consumers (reference group). *Office* is a matrix of 2 variables indicating the number of (a) descriptive and (b) non-descriptive consumer board members on the executive committee. *Consumer*Office* is a matrix containing 4 interaction terms between the variables represented by *Consumer* and *Office* to estimate the potential moderating effect of executive committee composition on the link between board composition and substantive outcomes. *W* is a matrix of FQHC-level and county-level controls, *T* is a matrix of binary year indicators, μ is a matrix of FQHC-level fixed effects, and ϵ represents the unobserved time-varying error. Expecting a delay between board composition and outcomes resulting from board decision-making, all board composition variables are lagged by 1 year.

The first model estimates the scope of enabling services, defined as the number of enabling services an FQHC offers of the 15 services reported by the UDS. These include: case management, child care, discharge planning, eligibility assistance, environmental health risk reduction, health education, interpretation/translation services, nursing home and assisted-living placement, outreach, transportation, out stationed eligibility workers, home visiting, parenting education, special education programs, and “other.” The measure captures the variety of enabling services an FQHC provides or refers and pays for. Services for which the FQHC provides referral without payment are excluded. Values of this variable range from 0 to 14 with a mean of 8.2. Because this variable cannot be negative and the data were *underdispersed*, Poisson regression is preferred as confirmed by the results of a goodness-of-fit test ($\chi^2(1352) = 137.43$, $p = 1.000$).²⁴ Because unobserved time-invariant FQHC-level characteristics may predict FQHC outcomes,²⁵ dummy variables for each FQHC were included. Finally, because Poisson models are heteroskedastic by definition, and a Wooldridge test for serial correlation in panel data^{26,27} confirmed the presence of autocorrelation, robust FQHC-clustered standard errors were used.

The second model estimates the volume of enabling services, defined as a continuous variable equal to the number of enabling service encounters an FQHC has per year standardized per 1,000 unique patients. This measure complements the scope of enabling services by focusing on the quantity of services provided. Values of this variable range from 0 to 7,560 with a mean of 245.8, which is the equivalent of providing 1 enabling service a year to 25% of patients. A series of specification tests confirmed that an FQHC-level fixed effects model was preferred over OLS ($F(816, 1354) = 15.67$, $p < 0.0001$) and random effects ($\chi^2(41) = 92.28$, $p < 0.0001$). The results of a White test indicated that the model was heteroskedastic ($\chi^2(45) = 115.08$, $p = 4.67e-08$) and the Wooldridge test for serial correlation in panel data^{26,27} identified autocorrelation. Robust FQHC-clustered standard errors are used to improve efficiency.

At the county level, both models control for metropolitan area, the per capita number of active non-federal office-based physicians, the number of short term general hospitals and the number of FQHCs, which may drive demand for enabling services and represent competition for the FQHC. Both models also control for several measures of county demographics (% male, % non-white, % Hispanic) and socioeconomic status (per capita income, % uninsured, % unemployed), which are positively associated with the amount of enabling services FQHCs provide.²³

At the FQHC level, controls include caseload and aggregate case-mix by age, gender, % non-white, income level, insurance status, and chronic disease burden (% of encounters for diabetes, asthma, and/or hypertension), which are likely to be associated with demand for enabling services and to directly affect organizational outcomes. The model also controls for board size, which has been negatively associated with consumer influence,²⁸ the number of delivery sites an FQHC operates, the number of full-time equivalent staff, and physicians as a percentage of total staff, which have been associated with organizational performance.²³ A binary variable indicating the presence of at least one physician on the board is included, because boards with physicians may operate differently. Various specifications of several variables (physician on the board, executive committee composition, board size, and site count) were modeled, and the specification with the greatest explanatory power was used in the final models. Pairwise correlations of all explanatory variables revealed no perfect collinearity and the relationships observed were as expected.

Endogeneity is a concern as unobserved factor(s) may be associated with board composition and enabling service provision. For example, a powerful CEO might influence board member selection and determine which enabling services are provided.²⁹ One approach is to use instrumental variables to conduct two-stage least squares (2SLS). However, identifying strong and valid instruments is difficult, especially with panel data, where the instrument must predict variation over time. Several potential instruments were identified, and their strength determined in a series of first stage regressions, but none of them were very strong. Given the problems with using weak instruments, the 2SLS approach was abandoned.³⁰

Lastly, while board composition is assumed to determine organizational performance, organizational performance may determine board composition.³¹⁻³³ This issue was tested using a cross-lagged regression technique³²⁻³⁴ to estimate board composition in year 2 as a function of organizational outcomes in year 1. The results suggested that organizational outcomes do not predict board composition.

Results

Sample descriptive statistics appear in Table 2. During the study period, an average FQHC with a staff of just over 100 employees working at 1 of 6 delivery sites, saw almost 16,000 patients for nearly 62,000 encounters annually. Of these, 70% were either uninsured or enrolled in Medicaid, almost half (48%) had asthma, diabetes, or hypertension and two-thirds (66%) had incomes below 200% of poverty.

The average board was comprised of 26.5% descriptive consumers (standard deviation 16.8) and 42.6% non-descriptive consumers (standard deviation 21.6). The average executive committee was comprised of 18.5% descriptive consumers (standard deviation 21.0) and 45% non-descriptive consumers (standard deviation 28.9). Table 3 reveals significant variation between FQHCs in the types of enabling services provided.

Scope of Enabling Services

Table 4 provides the results of the model predicting the scope of enabling services. While the proportion of descriptive consumers on the board is not significant, the results of a Wald

test ($\chi^2(3)=8.17$, $p = 0.0426$) indicate that the construct of descriptive consumer board composition, which includes interactions with executive committee composition, is significantly associated with the scope of enabling services provided. However, at the mean, the marginal effect (-0.00068) is trivial. Similarly, while the proportion of non-descriptive consumers on the board is not significant, the results of a Wald test ($\chi^2(3)=9.27$, $p = 0.0259$) indicate that the construct of non-descriptive consumer board composition is also significantly associated with the scope of enabling services provided. Again, at the mean, the marginal effect (-0.00059) is trivial.

The significance of the constructs seems driven by the number of descriptive consumers on the board's executive committee, which is positively associated with the scope of enabling services. Because this is a non-linear model, the marginal effect depends on both the variable and the cross-derivative of its interaction with the proportion of descriptive and non-descriptive consumers on the board. The results of a Wald test ($\chi^2(3) = 9.85$, $p = 0.0199$) confirmed that the three terms were jointly significant. Conversely, the Wald test for the number of non-descriptive consumers on the executive committee indicates that they are not jointly significant ($\chi^2(3)=3.35$, $p = 0.3405$). Interaction effects in non-linear models can be difficult to interpret.³⁵ Generating differences in average predicted values to obtain incremental effects is more straightforward.

A change from 0 to 1 descriptive consumer on the executive committee increased the predicted scope of enabling services by 0.42 additional services. As more descriptive consumers sat on the executive committee, this incremental effect increased slightly, such that a change from 3 to 4 descriptive consumers on the executive committee was associated with an increase of 0.49 in the predicted number of enabling services. An FQHC with an executive committee composed entirely of descriptive consumers provides 1.4 additional enabling services compared to an FQHC with no descriptive consumers on its executive committee.

Using the average of the probabilities method, the incremental and marginal effects of other significant variables in the model are calculated. Compared to FQHCs that receive solely CHC funding, FQHCs that also receive migrant health center funding provide an average of 0.77 additional enabling services. The unemployment rate in the county where the FQHC is located is positively associated with the scope of enabling services. Each 1 percentage point increase in the unemployment rate is associated with an FQHC providing 0.1 additional enabling services. Therefore, a 10 percentage point increase in county unemployment translates into an FQHC offering 1 additional enabling service. FQHCs are providing an increasing scope of enabling services over time, although the effect is slight. From 2004 to 2007, the scope of enabling services increased by 0.39 additional services. At this rate, the average FQHC would add an additional enabling service every 8 years.

Volume of Enabling Services

Table 5 provides the results of the model predicting the volume of enabling services. The results of 2 F-tests indicate that neither the proportion of descriptive consumers ($F(3, 818)=1.57$, $p = 0.196$) nor the proportion of non-descriptive consumers ($F(3, 818)=2.09$, $p =$

0.101) on the board is significantly associated with the volume of enabling services provided. The t-tests on the individual coefficients are also insignificant.

Furthermore, while the coefficient for the number of descriptive consumers on the board's executive committee is significant ($t = 2.36$, $p = 0.019$), the full construct, which includes interaction terms, is not jointly significant ($F(3, 818) = 2.03$, $p = 0.108$). Because the marginal effect of the number of descriptive consumers partially depends on both the proportion of descriptive and non-descriptive consumers on the board, and because the proportion of descriptive consumers cannot equal 0 if there is at least 1 descriptive consumer on the executive committee, it makes no sense to interpret the lone significant coefficient independently.

Several of the control variables in the model are significant. The total number of encounters, the proportion of patients ages 5 to 18, staff size, the proportion of staff who are physicians, and the number of general hospitals in the area were all significant predictors of the volume of enabling services per 1,000 patients. Specifically, each 1,000 additional encounters an FQHC has in a given year is associated with an increase of 5.7 additional enabling service encounters provided. Conversely, each 1 percentage point increase in the proportion of patients ages 5 to 18 is associated with a decrease of 5.5 enabling service encounters provided.

FQHCs with larger staffs and where more of the staff are physicians tend to provide a lower volume of enabling services. Each additional FTE staff person is associated with a decrease of 2.2 enabling service encounters, while each percentage point increase in the proportion of staff who are physicians is associated with a decrease of 13.8 enabling service encounters. Finally, each additional general hospital operating in the FQHC's county is associated with the FQHC providing 49.2 more enabling services per 1,000 patients.

Discussion

While consumer governance has been unsuccessfully incorporated into other elements of the health care system and subsequently abandoned,³⁶⁻⁴¹ there remains interest in direct citizen participation in health care.⁴² Simultaneously, demand for enabling services persists. Under the Affordable Care Act, FQHCs will play an expanded role as many newly insured individuals will depend on the unique services that FQHCs provide. Even after the Affordable Care Act is fully implemented, as many as 1 in 5 Americans will face non-financial barriers causing them to delay or forgo needed care.⁴³ Without enabling services, many of these individuals will lack access to primary care.

The results of this study suggest that consumer governance at FQHCs will have a limited impact on the provision of enabling services. While the proportion of consumers on the *board* does not have a significant effect on the provision of enabling services, the proportion of descriptive consumers on the *executive committee* is a significant factor in FQHCs providing a greater variety of enabling services. By contrast, neither the proportion of consumers on the board nor the proportion of consumers on the executive committee had any significant effect on the volume of enabling services provided.

It seems reasonable to conclude that the scope of enabling services is affected because the types of services to be offered are initiated by board decisions, while the volume of enabling services is not affected because volume is driven by demand-side factors. However, having consumers on the board is not enough. Rather, consumers must be empowered to set the agenda and influence the board by serving on the executive committee. Thus, policies strengthening the consumer governance provision—perhaps mandating that at least one descriptive consumer sit on the executive committee—should be considered.

Limitations

This study has several limitations. First, the UDS data are self-reported and unaudited. However, they remain the only comprehensive data available on FQHCs. Second, the UDS data can be misleading regarding the extent of service provision. An FQHC may report providing a certain enabling service, but at an FQHC with multiple delivery sites, this does not mean that all sites provide that service. HRSA should consider monitoring FQHC service provision by delivery site.⁴⁴ This limitation is addressed by modeling both the scope and volume of enabling services, and controlling for the number of delivery sites per FQHC grantee.

Third, grant application data were not received for all FQHCs. While systematic differences between missing and non-missing data were minimal, and there were no statistically significant differences in the scope or volume of enabling services, this may still limit the ability to generalize the results of this study to settings other than those described here. FQHCs in the sample were slightly more likely to have a lower operating margin, but it is difficult to know whether this is a determinant or a result of enabling service provision.

Fourth, while county-level factors are controlled for using ARF data, counties and FQHC service areas are not necessarily synonymous. For smaller FQHCs with a single delivery site, the service area may be only a portion of a county. For large, multi-site FQHCs, the service area may span multiple counties or cross state lines. Consequently, some county-level factors affecting delivery sites lying outside the grantee's county may not be controlled for in the study. To the extent that those factors are time-invariant, the fixed effects models will control for them. Still, time-varying factors may persist and future studies should consider alternative ways to account for the diversity of settings in which large FQHCs with multiple delivery sites operate.

Lastly, consumer governance may have less of an effect than expected for two reasons. First, the community's needs may be widely known. If everyone knows what the patients need, then including consumers on the board adds nothing to identifying the community's needs.^{45,46} Second, the law sets a high threshold at 51%. If 1 or 2 consumers on the board are sufficient to make the board responsive to the community, then any variation above 51% will be of no added value. A study similar to this one, comparing FQHCs to other safety net providers without consumer governance (e.g., free clinics, hospital emergency rooms, etc.) could determine whether consumer governance truly matters.

Conclusion

Going forward, many questions remain about how to effectively integrate FQHCs into the broader health care system in the wake of the Affordable Care Act. Enabling services are critical to maximizing access to care for underserved populations. The results of this study show that consumer governance, specifically within the executive committee, has the potential to play a role in determining which enabling services an FQHC provides, but more work is needed to identify factors, other than consumer governance, which are associated with the scope and volume of enabling services across FQHCs.

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Table 1
Annual Number of FQHCs in Operation, 2002 – 2007

Year	Total FQHC Grantees	Excluded	FQHC Sample	Total Grant Applications
2002	843	156	687	Not Requested
2003	890	154	736	397 (54%)
2004	914	146	768	297 (39%)
2005	952	155	797	767 (96%)
2006	1,002	160	842	784 (93%)
2007	1,067	181	886	Not Requested
Total	5,668	952	4,716	2,245

Table 2

Mean Descriptive Statistics for FQHCs in Study Sample by Year

Variable	2003	2004	2005	2006	Overall
Scope of Enabling Services	8.3 (2.2)	7.9 (2.2)	8.2 (2.1)	8.2 (2.1)	8.2 (2.2)
Volume of Enabling Services	270.3 (438.6)	209.0 (382.9)	254.3 (480.3)	239.2 (403.4)	245.8 (434.9)
Board Size	12.6 (3.1)	12.4 (2.9)	12.6 (3.3)	12.4 (3.0)	12.5 (3.1)
% Descriptive Consumers on Board	27.8 (16.9)	27.5 (18.3)	26.7 (16.1)	25.4 (16.8)	26.5 (16.8)
% Non-Descriptive Consumers on Board	40.8 (22.4)	41.0 (21.0)	42.7 (21.6)	43.9 (21.4)	42.6 (21.6)
# of Desc. Consumers, Exec Cmte	0.7 (0.8)	0.8 (0.9)	0.7 (0.8)	0.7 (0.9)	0.7 (0.8)
# of Non-Desc. Consumers, Exec Cmte	1.7 (1.2)	1.8 (1.2)	1.8 (1.2)	1.9 (1.1)	1.8 (1.2)
% of Boards with at least one Physician	33.5 (47.3)	30.3 (46.0)	32.6 (46.9)	30.5 (46.1)	31.7 (46.5)
# of Delivery Sites per FQHC	5.9 (6.1)	4.8 (4.2)	5.8 (5.8)	6.0 (5.9)	5.7 (5.7)
# of Unique Patients	16,707 (14,158)	12,590 (10,561)	16,258 (16,145)	16,214 (14,892)	15,837 (14,768)
# of Unique Encounters	65,234 (59,504)	49,150 (44,447)	63,472 (64,324)	63,487 (63,141)	61,894 (60,944)
# of Total FTEs (clinical + admin.)	106.4 (104.2)	80.3 (72.4)	103.9 (104.6)	105.7 (106.9)	101.9 (102.0)
Physicians as % of Staff	8.3 (3.4)	8.3 (4.7)	8.2 (3.5)	8.0 (3.4)	8.2 (3.6)
% of Patients < 200% FPL	66.7 (25.3)	66.0 (26.4)	66.1 (26.1)	65.1 (26.4)	65.8 (26.1)
% of Patients FPL Unknown	24.1 (26.7)	26.0 (27.3)	26.7 (26.9)	28.3 (27.5)	26.7 (27.1)
% of Patients, Male	40.7 (5.2)	40.2 (5.8)	40.6 (5.5)	40.4 (5.5)	40.5 (5.5)
% of Patients, Non-White	54.6 (32.9)	55.1 (31.9)	56.0 (32.3)	55.4 (32.1)	55.4 (32.3)
% of Patients, Chronic Illness	45.3 (20.8)	48.1 (23.0)	48.9 (22.7)	48.6 (22.0)	48.0 (22.2)
FQHC Patients by Insurance Status					
% Uninsured	37.8 (17.9)	38.2 (16.6)	39.2 (17.6)	39.1 (17.2)	38.8 (17.4)
% Medicaid	31.6 (14.1)	33.7 (15.3)	31.9 (14.2)	31.3 (14.2)	31.9 (14.3)
% Medicare	8.8 (5.9)	8.8 (6.1)	9.0 (6.0)	9.2 (6.0)	9.0 (6.0)
% Other Public	2.2 (4.0)	1.7 (3.8)	1.8 (4.0)	1.8 (3.9)	1.8 (4.0)
% Private	19.5 (14.3)	17.6 (13.2)	18.2 (13.7)	18.7 (13.9)	18.5 (13.8)
Other Grantee Types					
% Migrant Health Center	18.4 (38.8)	8.1 (27.3)	13.2 (33.8)	12.9 (33.5)	13.3 (34.0)
% Healthcare for the Homeless	13.4 (34.1)	6.7 (25.1)	11.6 (32.0)	11.6 (32.1)	11.3 (31.6)
% Public Housing	3.8 (19.1)	1.3 (11.5)	3.3 (17.8)	3.2 (17.6)	3.1 (17.3)

Variable	2003	2004	2005	2006	Overall
% School Based Health Center	8.8 (28.4)	5.1 (21.9)	8.2 (27.5)	7.5 (26.4)	7.7 (26.6)
FQHCs by Region					
% in South	35.3 (47.8)	36.4 (48.2)	36.5 (48.2)	36.5 (48.2)	36.3 (48.1)
% in Midwest	21.9 (41.4)	19.5 (39.7)	19.7 (39.8)	19.9 (39.9)	20.1 (40.1)
% in West	23.9 (42.7)	27.9 (44.9)	25.6 (43.6)	25.6 (43.7)	25.6 (43.7)
% in Northeast	18.9 (39.2)	16.2 (36.9)	18.3 (38.7)	18.0 (38.4)	18.0 (38.4)
# of Hospitals in County	7.7 (15.4)	6.4 (12.3)	7.4 (14.5)	7.2 (14.0)	7.3 (14.2)
# of FQHCs in County	6.7 (11.1)	6.8 (13.5)	8.3 (14.2)	8.8 (15.1)	8.0 (14.0)
Physicians per 1,000 County Pop.	1.7 (1.0)	1.7 (1.1)	1.8 (1.2)	1.8 (1.1)	1.8 (1.1)
% in Metro Area	65.0 (47.8)	64.3 (48.0)	66.5 (47.2)	66.2 (47.3)	65.8 (47.4)
% Population Male	49.1 (1.6)	49.4 (2.2)	49.3 (1.9)	49.3 (1.8)	49.3 (1.9)
% Population Non-White	19.8 (17.5)	23.6 (21.2)	21.8 (18.9)	21.9 (18.8)	21.7 (19.0)
% Population Hispanic	12.9 (18.6)	11.5 (15.8)	13.3 (17.7)	13.0 (17.5)	12.9 (17.6)
% Population Uninsured	15.3 (5.1)	15.7 (4.8)	15.5 (4.9)	15.4 (4.9)	15.5 (4.9)
% Population Unemployed	6.9 (2.5)	6.6 (3.1)	5.8 (1.9)	5.2 (1.8)	5.9 (2.3)
Per Capita Income in County (\$)	28,837 (9,459)	29,815 (10,112)	31,771 (10,982)	33,829 (12,592)	31,712 (11,370)
Observations (N)	397	297	767	784	2245

Table 3
Frequency of Enabling Service Provision at FQHCs by Type of Service

Enabling Service	% of FQHCs in Sample Offering Service	Standard Deviation
Case management	90.8	28.9
On-site child care	11.0	31.2
Discharge planning	55.1	49.8
Eligibility assistance	90.6	29.1
Environmental risk reduction	32.2	46.7
Health education	98.4	12.6
Translation services	91.6	27.7
Nursing home placement	38.9	48.8
Outreach services	92.2	26.7
Transportation services	68.5	46.5
Out-stationed eligibility workers	43.1	49.5
Home visits	0.0	0.0
Parental education	73.7	44.0
Special education	17.3	37.8
Other services	13.6	34.3

Table 4
Results of a Fixed Effect Poisson Model to Predict Scope of Enabling Services at FQHCs
(N=819)

	Coefficient (Robust Std. Error)
FQHC-Level Factors	
<i>Board Composition (Lagged One Year)</i>	
% Descriptive Consumers	−0.000980 (0.000890)
% Non-Descriptive Consumers	−0.000167 (0.000756)
Board Size	0.000722 (0.00138)
Physician on Board	−0.0104 (0.0135)
# Descript. Consumers on Exec. Cmte.	0.0522 * (0.0225)
# Non-Descript. Consumers on Exec. Cmte.	−0.00400 (0.0192)
(% Descript. Consumers) × (# Descript. Consumers on Exec. Cmte.)	−0.000459 (0.000403)
(% Descript. Consumers) × (# Non-Descript. Consumers on Exec. Cmte.)	0.000353 (0.000343)
(% Non-Descript. Consumers) × (# Descript. Consumers on Exec. Cmte.)	−0.000726 * (0.000330)
(% Non-Descript. Consumers) × (# Non-Descript. Consumers on Exec. Cmte.)	5.88e-05 (0.000269)
<i>FQHC Staffing</i>	
Total FTEs	0.000495 (0.000276)
Physicians as % of Staff	−0.00181 (0.00298)
<i>Funding Source</i>	
Migrant Grantee	0.0881 * (0.0393)
Homeless Grantee	0.0371 (0.0271)
Public Housing Grantee	0.0200 (0.0332)
School-Based Grantee	0.250 (0.239)
# Delivery Sites	−0.00321 (0.00215)
# Annual Patient Encounters	−4.72e-07 (4.27e-07)
Metro Area	0.311 (0.254)
<i>Geographic Region (Northeast Omitted)</i>	
South	−1.928 (1.269)
Midwest	0.228 (0.302)
West	−0.397 (0.267)
<i>Patients by Age (19– 64 Omitted)</i>	
% Age < 5	−0.000626 (0.00205)
% Age 5 – 18	0.00164 (0.00156)
% Age 65	−0.000782 (0.00375)
<i>Patients by Other Characteristics</i>	
% Male	0.00108 (0.00222)
% Non-White	0.000888 (0.000520)
% with Chronic Illness	−0.000479 (0.000369)
<i>Patients by Poverty Status (% Unknown Omitted)</i>	
% with Income 100% FPL	−8.75e-05 (0.000354)
% with Income 101 – 150% FPL	−0.00111 (0.000646)

	Coefficient (Robust Std. Error)
% with Income 151 – 200% FPL	–0.000294 (0.000911)
% with Income 201% FPL	0.000646 (0.000618)
<i>Patients by Insurance Status (% Private Omitted)</i>	
% Uninsured	0.00111 (0.00105)
% Medicaid	0.000265 (0.00113)
% Medicare	0.000391 (0.00298)
% Other Public Insurance	–0.000418 (0.00276)
County-Level Factors	
<i>Health Care Supply</i>	
# Hospitals	–0.00816 (0.00813)
Physicians per capita	–0.00301 (0.0272)
#FQHCs	–0.00187 (0.00128)
<i>Population Characteristics</i>	
% Male	0.000484 (0.0122)
% Non-White	–0.00135 (0.00644)
% Hispanic	–0.00816 (0.00889)
Per Capita Income	–2.11e-06 (1.32e-06)
% Uninsured	0.0730 (0.0636)
% Unemployed	0.0127 ** (0.00430)
<i>Time Trends (Year 2004 Omitted)</i>	
Year 2005	0.0173 (0.0101)
Year 2006	0.0306 * (0.0120)
Year 2007	0.0446 ** (0.0151)
Constant	0.924 (1.249)
Fixed-Effects	N = 819
Pseudo-R2	0.1218
Observations	2230
*** p<0.001,	
** p<0.01,	
* p<0.05	

Table 5
Results of a Fixed Effect OLS Model to Predict Volume of Enabling Services at FQHCs
(N=819)

	Coefficient (Robust Std. Error)
FQHC-Level Factors	
<i>Board Composition (Lagged One Year)</i>	
% Descriptive Consumers	1.791 (1.265)
% Non-Descriptive Consumers	1.410 (1.123)
Board Size	0.282 (2.034)
Physician on Board	-2.373 (11.87)
# Descript. Consumers on Exec. Cmte.	98.27* (41.64)
# Non-Descript. Consumers on Exec. Cmte.	25.97 (20.98)
(% Descript. Consumers) × (# Descript. Consumers on Exec. Cmte.)	-1.366 (0.719)
(% Descript. Consumers) × (# Non-Descript. Consumers on Exec. Cmte.)	-0.721 (0.463)
(% Non-Descript. Consumers) × (# Descript. Consumers on Exec. Cmte.)	-1.525* (0.669)
(% Non-Descript. Consumers) × (# Non-Descript. Consumers on Exec. Cmte.)	-0.347 (0.334)
<i>FQHC Staffing</i>	
Total FTEs	-2.204*** (0.476)
Physicians as % of Staff	-13.77** (4.186)
<i>Funding Source</i>	
Migrant Grantee	-20.27 (29.97)
Homeless Grantee	23.68 (33.35)
Public Housing Grantee	-245.6 (170.9)
# Delivery Sites	6.000 (6.811)
# Delivery Sites Squared	0.247 (0.160)
# Annual Patient Encounters	0.00569*** (0.00133)
Metro Area	104.3 (147.6)
<i>Patients by Age (19–64 Omitted)</i>	
% Age < 5	0.291 (2.711)
% Age 5–18	-5.532* (2.602)
% Age 65	-0.302 (5.273)
<i>Patients by Other Characteristics</i>	
% Male	1.098 (2.746)
% Non-White	0.197 (0.543)
% with Chronic Illness	0.586 (0.466)
<i>Patients by Poverty Status (% Unknown Omitted)</i>	
% with Income 100% FPL	0.470 (0.417)
% with Income 101–150% FPL	1.293 (1.512)
% with Income 151–200% FPL	0.370 (1.046)
% with Income 201% FPL	-0.403 (0.486)
<i>Patients by Insurance Status (% Private Omitted)</i>	

	Coefficient (Robust Std. Error)
% Uninsured	2.080 (1.293)
% Medicaid	1.226 (1.388)
% Medicare	3.100 (3.721)
% Other Public Insurance	−0.944 (2.257)
County-Level Factors	
<i>Health Care Supply</i>	
# Hospitals	49.16 ** (16.63)
Physicians per capita	−64.20 (47.08)
# FQHCs	−4.912 (2.787)
<i>Population Characteristics</i>	
% Male	2.539 (12.22)
% Non-White	6.093 (7.610)
% Hispanic	−16.99 (14.55)
Per Capita Income	0.00567 (0.00619)
% Uninsured	4.513 (34.96)
% Unemployed	8.558 (6.285)
<i>Time Trends (Year 2004 Omitted)</i>	
Year 2005	−34.62 (19.39)
Year 2006	−30.63 (24.30)
Year 2007	−28.03 (27.47)
Constant	−608.7 (755.3)
Fixed-Effects	N = 819
R ²	0.129
Observations	2230
*** p<0.001,	
** p<0.01,	
* p<0.05	