Residency Education

Barriers to Training Family Medicine Residents in Community Health Centers

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Background and Objectives: *Training partnerships between family medicine residencies (FMRs) and community health centers (CHCs) are a potential solution to the chronic problem of health workforce shortages in CHCs. We conducted a national survey to identify the barriers to training family medicine residents in CHCs.* Methods: *We asked US family medicine residency directors to identify barriers to training residents in CHCs. Using grounded theory, three coders grouped responses by theme. We examined differences in barriers between residency programs that currently train in CHCs with programs that do not currently train in CHCs.* Results: *A total of 51% (226/439) of residency program directors responded. Of these, 29% cited governance as a barrier to affiliation, 26% cited administrative complexity, 24% cited financial considerations, 21% cited leadership, and 18% cited access. Programs that trained in CHCs were more likely to cite financial considerations and administrative complexity than programs that did not train in CHCs.* Conclusions: *Governance and administrative complexity are the most commonly cited barriers to effective CHC-FMR partnerships. Financial consideration and leadership issues are also common barriers.*

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Since their inception in 1965, community health centers (CHCs) have been important primary care access points for low-income, minority, and other underserved populations.[1-4] With the passage of the 2002 Federal Health Center Growth initiative, the number and scope of CHCs has greatly expanded.[5-7] To keep up with this expansion, CHCs will need to expand their health provider workforce.[8,9]

Meeting the physician workforce demands has been a chronic challenge for CHCs.[9-14] Specifically, recruitment and retention of family physicians is the greatest workforce need in CHCs. Family physicians are the most common provider type (48.1% of CHC care providers), and the average family physician vacancy rate is 13.3%.[11] Although there are a number of programs designed to address this workforce problem, the CHC workforce shortage persists.[15-20]

Training resident physicians in underserved areas is one way to address the physician workforce shortage in these areas. It is based on the concept that training health care providers in areas of need will produce a workforce with the unique skills necessary to care for underserved populations.[21-23] As a workforce solution, this idea builds in part on work that has shown a positive correlation between the location of where residents train and where they eventually practice.[14,22,24] This is consistent with other studies that show a correlation between depth of exposure to underserved settings and recruitment and retention to these areas following graduation.[18,25-27]

Linkages between family medicine residencies (FMRs) and CHCs date back to the 1980s. Unfortunately, only one in five FMRs has any affiliation with a CHC, and just one of every 10 family medicine residencies maintains a continuity clinic within a CHC.[34]

The lack of growth in CHC-FMR affiliations can be better understood by examining barriers to forming such partnerships. Previously cited barriers to affiliation include cost, restrictions imposed by governing bodies, and managing the administrative complexity of these partnerships.[21,22,30,34,37-44] These studies, however, have been limited to individual programs and a single regional analysis. This study examines barriers to CHC-FMR affiliation using a national sample.

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Methods

Survey

In 2007, the University of Washington's WWAMI Rural Health Research Center surveyed all US family medicine residency program directors. A 21-item questionnaire identified residency characteristics, evaluated the type and amount of training within CHCs, and assessed barriers and benefits to CHC affiliation.

The survey was a follow-up questionnaire on residency training activities in rural areas performed in 2000.[45] Questions regarding CHC affiliation were added to the 2007 survey. The CHC portion was piloted with FMR directors within the WWAMI FMR Network.

We obtained a mailing list of all family medicine residency programs and their directors from the American Academy of Family Physicians. Three mailings were made, followed by up to four attempts (via phone, e-mail or fax) to reach nonresponding program directors. Programs excluded from the study were those that had closed, military programs, or programs that were located in Puerto Rico. The University of Washington Human Subjects Board approved this study with a Certification of Exemption.

Coding and Thematic Analysis

Our analysis was based on an open-ended question that asked respondents to list, in order of importance, up to three barriers to training residents in CHCs. The respondents were anonymously linked to their questionnaire, and the reported barriers were transcribed. Responses were then grouped into representative themes. Three of the authors (JS, CM, MK) were involved in the coding process, two (JS, MK) as independent coders, and one (CM) as an arbiter of unclear or disputed coding decisions.

A number of strategies were used to assure reliability and validity in the coding of responses. First, validated codes and themes from a previous qualitative study[34] of CHC-FMR barriers were utilized. Second, because the sample for this study was larger than in the previous study, we used grounded theory to expand the definitions of previous codes and themes and to create new ones. Grounded theory is an iterative, qualitative research process in which the definitions of codes and themes are refined throughout the analytic process.[46] Third, to minimize coder bias, multiple coders were used to refine thematic and coding definitions as well as to assess interrater reliability. Finally, a fourth investigator, who was familiar with CHC-FMR affiliations, performed an external audit on the resultant codes and themes.

The first independent coder transcribed, thematically organized, and coded the survey responses in groups of 100. Responses were grouped, by code, into themes. A theme represents a collection of similar conceptual codes. Between groups of 100 surveys, scheduled meetings were held in which two coders discussed unclear responses and resolved codes that merited further consideration. A coding key was then used to train the second independent coder to validate the coding scheme.

A similar iterative process was used with the second independent coder. Like the first round of coding, the second independent coder coded responses in groups of 100 surveys. Between these groups of 100 surveys, the authors held regular meetings to refine the coding key and to resolve coding discrepancies between the two independent coders. Final decisions about the coding key and coding were arrived at by consensus, and when this was not possible, an arbiter made the final decision. Responses from the final 100 surveys were not discussed at meetings with all three coders present.

Validation

To test the validity of the coding scheme, responses from the last 100 residencies were coded independently using the final, consensus-derived coding key, and a kappa score was calculated. Kappa is a measure of interrater agreement beyond chance. The calculated kappa score for the two independent coders was 0.78 ($P<.001$). Finally, to assess whether our findings, interpretations, and conclusions were supported by our data, an external audit was performed by another author, a researcher familiar with CHC-FMR affiliations, yet who was not involved in our study design.

Quantitative Analysis

Although there are inherent limitations with qualitative data, we attempted to quantify the responses. We performed frequency calculations of each theme and bivariate comparisons between CHC-affiliated versus non-affiliated FMRs. Categorical variables were evaluated using a chi-square test, with an alpha of 0.05. Data analysis was done with Stata, Version 10.0 (StataCorp, College Station, TX).

Results

We sent out 460 surveys. Twenty-one residency programs met the exclusion criteria, leaving 439 eligible programs. Of these, 354 returned a usable survey. A total of 226 of these program directors answered the open-ended survey item about barriers, giving a response rate of 51% (226/439).

On average, program directors identified 1.78 barriers. Barrier frequencies (Table 1) and the comparative analysis (Table 2) were limited to residencies that responded to the open-ended survey item regarding barriers.

Qualitative Analysis

What follows are the explanations of the derived codes, and their themes, organized in descending order by frequency—that is, by the number of FMRs that cited the barrier as an obstacle to affiliation. Residency

Table 1

Barriers to Training Family Medicine Resident Physicians in Community Health Centers

Barriers	*# of Residencies Citing (%)**	*# of Residencies Citing as #1 (%)***
Governance	65 (29%)	40 (18%)
Administrative complexity	59 (26%)	37 (16%)
Financial considerations	54 (24%)	27 (12%)
Leadership	48 (21%)	41 (18%)
Access	41 (18%)	31 (14%)
Mission	21 (9%)	10 (4%)
Other	21 (9%)	5 (2%)

* Percentages do not add to 100 because residencies could list up to three barriers; residencies listing a barrier more than once were counted once. Denominator=226 (# of residencies who answered survey item).

** Barriers listed first were considered #1 barriers; percentages add up to 100 as each residency by definition can have only one #1 barrier. (Denominator=225, due to one illegible #1 response)

Table 2

Barriers to Training Family Medicine Resident Physicians in Health Centers, Comparing CHC-affiliated FMRs to Non-CHC-affiliated FMRs

	CHC-affiliated FMR (n=67)	*Non-affiliated FMR (n=156)*	*P Value**
Governance	30%	29%	.880
Administrative complexity	42%	20%	.001
Financial considerations	40%	17%	<.001
Leadership	3%	29%	<.001
Access	12%	21%	.126
Mission	19%	5%	.001

CHC—community health center
FMR—family medicine residency

* Chi-squared result

programs that cited a barrier multiple times, for example by giving two separate responses that fell under the same theme, were counted once. Representative quotes are included in the explanations and in Table 3.

Governance. We defined governance as a barrier that was associated with a governing body or its rules, guidelines, or requirements. The largest number of residency directors (65/226, 29%) reported governance as a barrier to training in CHCs. Requirements by various governing bodies were commonly cited as barriers to affiliation. Representative examples of this type of governance barrier include "letter of agreement to satisfy Review Committee (RC)," and "continuity requirements of RC/Accreditation Council of Graduate Medical Education (ACGME)." In addition, among this group of residencies, difficulty in "getting a Federally-qualified Health Center (FQHC) designation" was commonly cited as a barrier to affiliation. Finally, many residency directors cited concerns regarding the loss of residency control, due to the addition of the CHC board, as a barrier to affiliation: "governance structure of FQHCs not being favorable to residency control of education" and "loss of control of office setting with additional board."

Administrative Complexity. The administrative complexity theme included the following codes: extra responsibilities required in a CHC-FMR partnership, staffing problems, prohibitive realities of CHC practice, and poor communication between residency and CHC. Additional duties related to affiliation were cited commonly as barriers, for example, "extra duties transferred…" Additionally, among this group, many residency directors expressed concerns over staffing issues of their local CHCs that precluded affiliation. These concerns were related to "inadequate staffing levels" and extended to reservations about CHC clinical staff: "physicians on staff at local FQHC—not satisfying as faculty."

Financial Considerations. The financial considerations theme included codes related to remuneration, loss of CHC revenues due to resident training costs, and deficiencies in CHC infrastructure. Often these constraints were related to remuneration: "no money to fund faculty supervisory time there," is representative of this type of response. Program directors also commonly cited "unreimbursed lost revenue" and related financial losses due to training time with residents as barriers to affiliation.

Leadership. The leadership theme encompassed codes related to a failure to initiate a partnership, a lack of knowledge about CHC-FMR partnerships, and a perceived shortcoming of local health center management. Interestingly, leadership was cited most frequently as the most important barrier to affiliation (ie, entered first in the open-ended survey item, which asked for barriers to be listed in order of importance). Most commonly, leadership problems were related to residency directors who "haven't tried" to affiliate with local CHCs.

Table 3

Barriers to Training Family Physician Residents in Health Centers: Themes and Codes

Theme *Code*	Definition*	Quotes
Governance		
Governing body and associated rules	Rules of governing bodies are barriers to affiliation	"Concerns about dual compliance to RC versus NACHC regulations"
FQHC designation	Difficulty acquiring FQHC designation	"Difficulty qualifying as a FQHC"
Residency curriculum	Residency curriculum is full; no time/room to train in CHC	"Not available within structure of curriculum"
Board control	Loss of residency control due to incorporation of separate CHC board	"Sponsoring institution losing 'control' of the residency"
Negotiations	Negotiations between hospital/residency and CHC preclude affiliation	"Agreements between FQHC and hospital"
Production	HC and resident physicians unable to see enough patients to satisfy CHC requirements.	"Their concern re: resident productivity"
Administrative complexity		
Extra/additional responsibilities	Additional work associated with dual complexity of affiliation	"Extra duties transferred (Tx of inpatients)"
HC practice	Realities of clinical practice that are perceived as barriers	"Language—many patients require interpreters"
Staffing	CHC staffing/scheduling concerns	"Inadequate staffing levels"
Communication	Communication problems between FMR and CHC	"Communication with center"
Financial considerations		
Remuneration	Payment to faculty and residents	"Compensating CHC for teaching/education costs"
Loss of CHC revenues	Loss of productivity/revenues due to required teaching	"Perceived concern by FQHC of lost productivity"
Costs/deficiencies of CHC infrastructure	HC infrastructure seen as a barrier to affiliation	"Facility not updated—infrastructure/equipment"
Leadership		
Failure to initiate partnership	Residency hasn't tried to affiliate with local CHC	"Haven't tried to train in a FQHC"
Lack of information	Residencies unaware of how to affiliate	"Don't know how to go about doing this."
Perceived CHC management shortcoming	Perceived problem with CHC management is barrier to affiliation	"Local FQHC is very poorly managed"
Access	CHC inaccessible to residency	"No FQHC in area"
Mission	Lack of shared mission; conflict between CHC's goal of service/solvency and residency's mission of education.	"Different goals (patient service vs. education)"
Other	Response that did not fit into an above code	"Recruiting residents w/ dedication to underserved"

RC—Review Committee
NACHC—National Association of Community Health Centers
FQHC—federally qualified health center
CHC—community health center

In addition, many directors lacked information about affiliating with CHCs: "Don't know how to go about doing this."

Access. The access theme described program directors who stated that CHCs were inaccessible to their residency programs. Most commonly, this was due to "no immediate access" to a health center or because travel or "drive time" was too onerous to reach the nearest CHC.

Mission. The mission theme describes a lack of a shared mission between the CHC and the residency: that is, between the CHC's goal of service and solvency and the

residency program's mission of education. This barrier was often related to a belief by residency directors that CHCs have "different goals…" and that education was not a part of the CHC mission: "Medical education is not a priority of FQHC."

No Barriers. Thirty-eight responses indicated that there were no barriers to training in CHCs or that the program had no interest in expanding their training in CHCs. Because of the nature of these responses, these codes were not categorized as a theme.

Quantitative Analysis

The comparative analysis focused on residency programs that train with health centers (ie, CHC-affiliated FMRs) and those who do not (non-affiliated FMRs). Moreover, the analysis was restricted to programs that answered the open-ended survey item and whose affiliation status could be identified (n=223) (Table 2). The barriers of mission, financial considerations, and administrative complexity were associated with being a CHC-affiliated FMR (P values ≤ 0.001). Conversely, there was a statistically significant association between the leadership barrier and non-affiliated residencies ($P<.001$).

Discussion

From a nationwide survey of family medicine residency directors, we found that barriers related to governance and administrative complexity were the most frequently cited obstacles to family medicine residency training in CHCs. In addition, we found that leadership was the most important barrier to residency training in CHCs.

Governance was the barrier cited most frequently and equally by programs that were and were not training in CHCs. In other words, in addition to being cited the most overall, it appears that the governance barrier impedes partnerships between FMRs and CHCs and continues to be a barrier even when these affiliations are successful. Governance is an intimidating issue for independent organizations such as residencies and CHCs, particularly for CHCs who have truly unique governing structures. The idea of merging two independent organizations is likely perceived as a daunting undertaking and precludes and challenges affiliation.

In contrast, residency programs that actually have experience teaching in CHCs reported administrative complexity, financial considerations, and mission as barriers to affiliation much more frequently than FMRs that are not training in CHCs. These barriers may be important to these programs because they have actually dealt with the logistical details of working through the administration and financing of these partnerships.

This study also identified new barriers to CHC-FMR training partnerships that were not previously found. Issues of access to CHCs for forming partnerships, as well as a lack of barriers, have not been previously identified. Despite the number and breadth of CHC access points nationwide, these responses indicate that there are a number of areas throughout the country in which collaboration is not possible due to CHC inaccessibility.

Despite these barriers, CHCs and FMRs share common ground. Even though the CHC perspective was beyond the scope of this study, others have found that CHCs and FMRs share certain core principles.[47] These include beliefs in the importance of service, education, clinical quality, fair reimbursement, and maintaining secure institutional funding streams. Starting from this common ground is a critical step to overcoming these barriers.

In light of this common ground, our results suggest that policies addressing governance and financing of CHC-FMR partnerships would be welcome to FMRs considering affiliation. As it happens, such solutions are currently underway. Indeed, the model of a Medicare-funded "Teaching Health Center," wherein resident physicians are trained in federally funded health center residency programs, is attracting interest in health reform discussions and is even part of health care legislation before Congress as of the date of this report.[48,49]

Strengths and Limitations

This study is the first national study of family medicine residency program directors' experiences with CHCs. Those who responded represent a diverse group of residency programs—CHC affiliated, non-affiliated, urban, rural, community, and university. Even though the sample was only slightly more than half of all US FMRs, we feel the diversity of respondents make our findings reasonably generalizable.

Another strength of this analysis was the effort to make the coding rigorous and reproducible. Use of the literature for previous codes, the use of independent coders, an external audit, and consensus building were all integral components of the research process. The results of these efforts are seen in the kappa score, which confirms the strength of the coding scheme.

Finally, the findings of this study should be helpful for policy makers, CHCs, and FMRs with interest in forming CHC-FMR partnerships. Having representative barrier data from the perspectives of CHC-affiliated and non-affiliated FMRs will be helpful for stakeholders currently trying to affiliate and for those considering a CHC-FMR partnership in the future.

There are limitations to our study. Short answers from a survey limit the depth of a qualitative analysis, but we evaluated those answers using a rigorous methodology and feel that our analysis is robust. Nonrespondents to the survey and survey respondents who

failed to answer the question on barriers potentially influenced our results. Also, because the responses were only from FMR directors, the conclusions of the study may not be generalized to the perspective of CHCs. Finally, the use of previously identified codes and themes has the potential to bias coding. However, using a set of codes and themes designed to describe CHC-FMR affiliations could potentially strengthen the coding strategy. To limit bias, an iterative process was used that expanded and created new codes and themes. This was done to characterize responses that did not fit into previously identified codes and themes.

Conclusions

The workforce shortage in CHCs is worsening. Our study illustrates that there are a number of barriers that prevent CHC-FMR partnerships and that these barriers differ by FMR affiliation status. Further research is needed to understand barriers to CHC-FMR affiliation from the health center perspective. Our results suggest that CHC and FMR governing bodies should reflect on how their policies lead family medicine residencies to perceive them as significant barriers to CHC-FMR training partnerships.

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