# Satisfaction of Family Physicians Working in Community Health Centers

Allison Marion Cole

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Committee:

Mark P Doescher, MD, MSPH

William R. Phillips, MD, MPH

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Dedicated to Ajai, Evan and William

Many thanks to William R. Phillip for his constant counsel and guidance.

TABLE OF CONTENTS

List of Tables:

University of Washington

Abstract

Allison Marion Cole

Chair of supervisory committee: Mark Doescher, MD, MSPH

Associate Professor, Department of Family Medicine

**Title**: Satisfaction of Family Physicians Working in Community Health Centers

**Context:** Community Health Centers (CHCs) receive $2.9 billion in federal funding to provide primary care to 20 million people annually, and these numbers are increasing. Understanding of physician satisfaction in CHCs may help guide recruitment and retention efforts aimed at expanding CHC programs.

**Objective**: Contrast satisfaction of family physicians working in CHCs to satisfaction of family physicians working in other practice settings.

**Methods:** Analysis of four cross-sectional surveys of recent residency graduates from the WWAMI Family Medicine Residency Network. Surveys conducted approximately every three years, 2000-2010.

**Main outcome measures:** Self-reported satisfaction with residency training, practice and specialty on a 1=low to 5=high scale.

**Results:** 893 family physician respondents (response rate 61%). 129 CHC physicians and 764 non-CHC physicians. Compared to non-CHC physicians, higher proportions of CHC physicians reported being highly satisfied with their residency training (79% vs. 61%, $p<0.01$) and choice of specialty (74% vs. 60%, $p<0.01$). In contrast lower proportions of CHC physicians were highly satisfied with their employers

(32% vs. 39%, p=0.05). There were no differences in satisfaction with practice partners, income, practice location, or work hours. After adjustment for physician, practice and community characteristics, CHC physicians were more likely to be highly satisfied with their residency training (OR 2.6, p=0.001) and their choice of specialty (OR 1.7, p=0.03). CHC physicians were less likely to be highly satisfied with their employers (OR 0.5, p<0.01).

## Introduction

In the face of the current primary care workforce shortage, many Community Health Centers (CHCs) are struggling to recruit and retain qualified physicians. CHCs are federally funded primary care clinics that provide care for medically underserved populations (1, 2). They received almost $2.9 billion in federal funding in 2010, and increases in future funding are being considered (3). However, only 43% of CHC executive and medical directors report adequate physician supplies (4). Family physicians account for almost half of primary care physicians employed by CHCs (5), and an estimated 13% of family physician positions at CHCs are unfilled (5). CHCs will need to recruit an additional 16,000 to 20,000 primary care providers to meet increasing patient demand (6). In addition to the need to recruit new physicians for expansion, CHCs have also faced problems retaining physicians (7). The cost of physician turnover is significant, estimated to be over $200,000 per physician (8). Without adequate physician staffing, CHCs will be unable to meet the increasing demand for their services.

To improve understanding of physician workforce and plan for future physician workforce needs, consideration of physician satisfaction is important. The Price Mueller model of job satisfaction shows that the primary predictor of job turnover is job satisfaction (9). Differences in job satisfaction would be expected to lead to differences in job turnover. Research has shown that physician dissatisfaction is associated with intention to leave a practice (8, 10). In particular, physician satisfaction with colleagues (11) and physician satisfaction with employers (12) have both been shown to be negatively correlated with intention to leave a practice.

Physician job satisfaction is also associated with patient outcomes. Higher physician satisfaction is associated with higher patient satisfaction (13) and patient-reported quality of care (14). Physician dissatisfaction is also associated with increased rates of prescription of non-recommended medications (15). Practice characteristics that are associated with physician

job satisfaction include job control or autonomy and satisfaction with income (16-18). Physician characteristics, such as race and gender, have not been demonstrated to be strongly associated with job satisfaction (18).

Because of the unique mission and structure of CHCs, it is reasonable to hypothesize that the satisfaction of physicians working there may be different than in other practice settings. Knowledge of CHC physician satisfaction may suggest areas for intervention to improve CHC physician satisfaction, potentially improving the quality of care provided in CHCs and reducing costs associated with physician turnover. In this study our primary aim is to contrast satisfaction of family physicians working in CHCs to satisfaction of family physicians working in other practice settings.

**Methods**

Study design and data sources:

We conducted mailed surveys of all 1472 physicians who graduated over the 13 years from 1997 -2009 from family practice residency programs affiliated with the University of Washington Family Practice Residency Network (the Network). Surveys were conducted in 2000, 2003, 2006 and 2010. We excluded 23 physicians and exclusion criteria included: practicing <50% full time equivalent, practicing outside the United States, and practicing in a non-family medicine setting (urgent care, ER, etc.). 893 physicians were eligible (61% response rate). The Network includes eighteen programs in rural, urban, inner city, and military settings across the five-state WWAMI region of Washington, Wyoming, Alaska, Montana, and Idaho. Approximately 135 residents graduate from the Network each year. This study was reviewed and exempted by the Human Subjects Review Committee of the University of Washington

We mailed the questionnaires to all Network graduates. The survey instrument included items about demographic information, practice patterns, several realms of satisfaction, and adequacy of residency training for practice. It contained 120 items and was five pages in length. The questionnaire was mailed with a self-addressed, stamped return envelope to all graduates. If questionnaires were returned as undeliverable, current addresses were sought from residency programs and from the American Academy of Family Physicians membership database. A follow-up survey was sent to all nonrespondents two months later. All names and identifying information were removed from the data before analysis. Participants were asked about eight areas of career satisfaction: residency training (training), choice of specialty (specialty), relationship with employer (employer), relationship with partners (partners), work hours (hours), practice location (location) and income. Responses were given on a 1 to 5 likert-like scale, with 1 lowest and 5 highest (eTable 1). Early analysis showed the responses were

substantially skewed towards the high reported satisfaction (data not shown), so we made the decision to dichotomize our outcome, we dichotomized our outcome measures into "highly satisfied" (Likert value 5/5) vs. "not highly satisfied" (Likert value of 4/5 or less). This is consistent with methods used in other studies of physician satisfaction (17, 19, 24).

We determined participants' practice setting (Community Health Center vs. other) by self-report answer to the question: "Do you practice in any of the following underserved areas?" Response choices coded as Community Health Center included "Community Health Center" and "Migrant Health Center." We coded all other responses as "non-CHC." We combined Community Health Center and Migrant Health Centers because both are funded through the Federally Qualified Health Center program (20). We were unable to verify self-report of practice type. However, we coded response choices to the question for other underserved practice settings (Rural Health Clinic,Indian Health Clinic, Health Professional Shortage Area, and other underserved setting) as non-CHC to minimize misclassification bias.

Statistical methods:

We compared basic demographic, practice and community characteristics of CHC and non-CHC physicians using the $X^2$ test for categorical variables and *t*-tests for continuous variables. In bivariate analysis, we used the $X^2$ test to compare proportion of CHC and non-CHC physicians highly satisfied (rating satisfaction 5 out of 5) in each area. To test for secular trends that could have affected our conclusions, we used a linear test for trend for both CHC and non-CHC physicians in each area of satisfaction. For the multivariate analysis, we determined covariates used in the adjustment model *a priori*, and included physician gender, physician years in practice, physician teaching responsibility (yes/no), physician full time equivalent status (FTE), practice community size, practice community median income, physician

compensation method (salaried vs. other compensation structure), and patient volume (self-report of number of patients seen in eight hours). To account for potential clustering of our data by time or residency program, we used a multi-level mixed effect logistic regression model, adjusted for the covariates mentioned above, and with survey wave (year in which respondent completed the survey) as a fixed effect and residency program as a random effect. Models were estimated with Stata 11 statistical software (21). We assessed the statistical significance of odds ratios using Wald's test, with $p<0.05$ as the criterion for statistical significance. The goodness of fit for each model was tested with the Hosmer-Lemeshow test.

**Results**

A total of 893 family physicians completed the survey, 129 CHC physicians and 764 non-CHC physicians. The proportion of survey respondents practicing in CHCs was consistent across graduation years (data not shown). The characteristics of the physicians are shown in Table 1. There was a significantly lower proportion of males in the CHC physician group as compared to the non-CHC physician group. The proportion of physicians practicing in small towns (<10,000) was significantly higher in the non-CHC group. A lower proportion of CHC physicians compared to non-CHC physicians were paid by salary alone. The other physician, community and practice characteristics were similar between the two groups.

The results of bivariate analysis shown in Table 2 demonstrate several differences between CHC and non-CHC physicians. Compared to non-CHC physicians, significantly higher proportions of CHC physicians were highly satisfied with their residency training and choice of specialty. In contrast, significantly lower proportions of CHC physicians were highly satisfied with their employer and partners. No significant differences were seen in the proportions of physicians highly satisfied with their location, income or hours. We found no statistically significant linear trend (data not shown) in any area of satisfaction for either CHC or non-CHC physicians over the years included in the study ($p>0.1$ for all tests).

Table 3 shows the results of the logistic regression analysis, both the unadjusted and adjusted models. The adjusted models reflect the results of the mixed effect model, and control for physician gender, FTE, years in practice, teaching responsibility, community size, median household income of the practice community, physician reimbursement method and patient volume. CHC physicians were more likely than non-CHC physicians to be highly satisfied with their training (OR 2.56, $p<0.01$) and specialty (OR 1.71, $p=0.03$). In contrast, CHC physicians were less likely to be highly satisfied with their employers (OR 0.51, $p<0.01$). CHC physicians

were also less likely to be highly satisfied with their partners (OR 0.67, p=0.07), although this difference did not reach statistical significance. No significant differences in satisfaction were observed for CHC vs. non CHC physicians for income or location.

## Discussion

Compared to non-CHC physicians, after adjustment for covariates, CHC physicians were more likely to be highly satisfied with their residency training and choice of specialty, but less likely to be highly satisfied with their employers. These observations may have implications for physician workforce planning in CHC settings.

CHC physicians highly satisfied with their choice of specialty may reflect the congruence of their beliefs about the mission of Family Medicine with the mission of CHCs. CHCs began in the 1960s as part of the War on Poverty, with a mission to improve the health of poor and medically underserved communities (20). Family Medicine emerged as a specialty around the same time, with a commitment to provide accessible, affordable quality healthcare to everyone (22). CHC physicians may be more likely to see the mission of CHCs as an embodiment of the mission of Family Medicine. Further research to explore this is needed.

CHC physicians highly satisfied with their residency training may identify similarities between residency practices and CHC practices. The Network includes four residency sites affiliated with clinics that operate as CHCs or CHC look-alikes, and the mission of care for the underserved influences the curriculum in all of the affiliated residencies. More research is needed to confirm this possibility. This also supports the need for opportunities to train Family Medicine residents in CHC settings. The Teaching Health Center program is an example of a successful model that finances a structured relationship between residency programs and CHCs, allowing increased opportunities for resident training in CHC settings (23). Recent passage of the 2010 Affordable Care Act authorized grant funding to expand this model.

CHC and non-CHC physicians were equally likely to be highly satisfied with their practice locations, work hours and income. The lower proportion of CHC physicians paid by salary alone compared to non-CHC physicians may reflect the early career stage of

respondents. New physicians in private practice may be paid by salary while they build their practices, while many CHCs have begun to adopt incentive payment structures. Alternatively, the Medical Group Management Association reported that the percentage of medical practices that are physician owned has declined while the percentage of medical practices that are owned by hospitals or health systems has increased. The declining number of graduates chosing jobs in physician owned practices may be the cause of the observed differences in payment structure. However these differences in payment structure do not appear to be influencing physician satisfaction with income.

In contrast to the high proportion of CHC physicians highly satisfied with residency training and choice of specialty, CHC physicians were significantly less likely to be highly satisfied with their employers. Research on physician satisfaction emphasizes that autonomy and work control are strongly associated with physician satisfaction (16-18). Research has also shown a strong negative correlation between physician satisfaction with employer and intention to leave a practice (12). The finding that CHC and non-CHC physicians reported no significant differences in satisfaction with their incomes, hours and locations, suggests that satisfaction with employer is an element independent of these other practice characteristics. Because further study is needed to clarify exactly what is being measured with the employer satisfaction question used in this questionnaire, we are planning a qualitative study to investigate more thoroughly the relationship between physicians and employers in CHCs.

There was a nearly significant negative association between practicing in a CHC and being highly satisfied with practice partners. Given the magnitude of the point estimate, the lack of statistical significance may reflect inadequate sample size to have detected a true difference. Thus, evaluation of this potential negative association on a larger sample size is warranted. This is important because research has shown that physicians' relationships with colleagues are negatively associated with intention to leave a practice (11). Therefore, further investigation of

physician's relationships with their colleagues, in addition to a deeper understanding of the relationship between CHC physicians and their employers, may be useful in developing interventions to improve CHC physician satisfaction.

Strengths of our study include the high survey response rate and the broad geographic spread of our respondents over 44 states. However, our conclusions may be limited by the usual limitations of surveys, including the non-representativeness of our sample. All respondents graduated from one of 19 family medicine residency programs in the WWAMI region and may not accurately reflect the views or experiences of physicians trained in other areas of the country. Our study may also be subject to non-responder bias. Because of the design of the survey, we do not have any information about non-responders. If non-responders differed systematically from responders, this could affect our conclusions. However, our high survey response rate somewhat alleviates this concern.

The survey is conducted with physicians who recently (within 3 years) graduated from residency and are likely new to their practices. However, it may not accurately at predict these physicians' future career satisfaction or career plans. Also, our results report proportions of physicians highly satisfied in certain areas of their careers and practices. It is not known whether these measures are associated with turnover in the same way that levels of dissatisfaction have been (10). Because this was an observational study, we are unable to draw causal inferences from these results, and are unable to assess unmeasured confounding. To address these limitations, we are planning a follow up survey of these physicians to determine temporal changes in satisfaction as well as actual changes in practice settings. Another limitation to consider is that differences in satisfaction may be due to unmeasured factors rather than actual practice in a CHC or other practice setting. For example, CHC physicians may be more likely to be National Health Service Corps Scholars or J-1 visa recepients, either of which could impact satisfaction. Despite these limitations, given that

physician recruiting often occurs from the pool of recent residency graduates, an accurate understanding of this group is helpful in primary care workforce planning.

Our findings raise several concerning issues. CHCs are recruiting dedicated family physicians that are highly satisfied with their residency training and choice of specialty, yet are less likely to be highly satisfied with their employers and possibly also with partners. We wonder if the CHC work environment is contributing to this difference in satisfaction and potentially leading to physician turnover in CHCs. Future research should focus on a better understanding of the relationship between CHC physicians and their employers and their partners.

In conclusion, CHC physicians were more likely to be highly satisfied with their residency training and choice of specialty, and less likely to be highly satisfied with their employers. The lower level of satisfaction reported by CHC physicians has implications for workforce recruitment and retention in CHC settings. In an era of CHC growth, efforts to improve physician relationships with employers may be a potential target for enhancing the physician workforce in CHCs.

Table 1: Characteristics of respondent family physicians.

| Physician characteristics | Total (n=893) | CHC physicians (n=126) | Non-CHC physicians (n=764) | p-value |
|---|---|---|---|---|
| Percent Male | 48% | 31% | 50% | <0.01* |
| Years since residency graduation (mean) | 1.75 | 1.74 | 1.77 | 0.70 |
| FTE (mean) | 0.92 | 0.91 | 0.92 | 0.63 |
| Percent involved in teaching | 83% | 83% | 83% | 0.85 |
| Community Characteristics | | | | |
| Percent practicing in town <10,000 | 27% | 18% | 27% | 0.02* |
| Median household income of practice community (mean) | $42,037 | $43,256 | $41,843 | 0.30 |
| Percent of practice community that is African American (mean) | 5.0% | 4.5% | 5.1% | 0.49 |
| Percent of practice community that is Hispanic (mean) | 8.1% | 8.9% | 8.0% | 0.41 |
| Practice Characteristics | | | | |
| Patients seen in 8 hours (mean) | 20.6 | 20.5 | 20.6 | 0.82 |
| Proportion paid by salary alone | 42% | 29% | 44% | <0.01* |

*p<0.05, Chi2

Table 2: Proportions of physician respondents highly satisfied (5 out of 5) in selected dimensions.

| **Proportion of physicians highly satisfied with:** | Total | CHC physicians | Non-CHC physicians | p-value |
|---|---|---|---|---|
| Training | 63.1% | 75.9% | 61.0% | <0.01* |
| Specialty | 62.6% | 74.4% | 60.6% | <0.01* |
| Employer | 71.6% | 61.7% | 73.2% | 0.01* |
| Partners | 56.7% | 48.1% | 58.1% | 0.03* |
| Location | 49.5% | 44.4% | 50.3% | 0.20 |
| Income | 29.1% | 30.1% | 28.9% | 0.79 |
| Hours | 38.7% | 39.1% | 38.6% | 0.92 |

*p<0.05, Chi2 test

Table 3: Unadjusted and adjusted odds ratios and goodness of fit for each model describing the association between CHC-physicians and being highly satisfied in specific areas.

| | Unadjusted OR | Adjusted OR* | Hosmer-Lemeshow Chi2(p-value) for adjusted model |
|---|---|---|---|
| Training | 2.02, p<0.01 | 2.56 (1.50, 4.36) p<0.01** | 10.8 (p=0.3) |
| Specialty | 1.89, p<0.01 | 1.71 (1.04, 2.79) p=0.03** | 9.7 (p=0.4) |
| Employer | 0.59, p<0.01 | 0.51 (0.32, 0.82) p=0.01** | 9.4 (p=0.4) |
| Partners | 0.67, p=0.03 | 0.67 (0.43, 1.04) p=0.07 | 7.7 (p=0.6) |
| Location | 0.79, p=0.20 | 0.80 (0.52, 1.24) p=0.31 | 7.2 (p=0.6) |
| Income | 1.06, p=0.79 | 1.17 (0.73, 1.89) p=0.50 | 6.3 (p=0.7) |
| Hours | 1.02, p=0.92 | 1.23 (0.79, 1.92) p=0.36 | 15.4 (p=0.1) |

*Adjusted using mixed effect models for gender, years in practice, FTE, teaching responsibility‡, community size, median income of practice community, reimbursement method‡, patient volume, survey year (fixed effect) and residency program (random effect)

** p<0.05, Wald's test

‡ variables in the mixed effect model that were associated with satisfaction

eFigure 1: Instrument used to assess physician satisfaction

Please circle the number that indicates your satisfaction level with your principal practice

| | Unsatisfied | | | | Highly Satisfied |
|---|---|---|---|---|---|
| Location | 1 | 2 | 3 | 4 | 5 |
| Partners | 1 | 2 | 3 | 4 | 5 |
| Employer | 1 | 2 | 3 | 4 | 5 |
| Hours | 1 | 2 | 3 | 4 | 5 |
| Income | 1 | 2 | 3 | 4 | 5 |

How satisfied are you with your choice of specialty? Please circle one.

| Unsatisfied | | | | Highly Satisfied |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

How satisfied are you with your residency training? Please circle one.

| Unsatisfied | | | | Highly Satisfied |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

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