Recruitment and Retention of Primary Care Physicians at Community Health Centers: A Survey of Massachusetts Physicians

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MassAHEC Network
University of Massachusetts Medical School

As part of the University of Massachusetts Medical School and the Center for Health Policy and Research, the MassAHEC Network reduces health disparities throughout the Commonwealth by enhancing the skills and diversity of the health care workforce and improving access to quality care.

With AHEC Centers in Pittsfield, Springfield, Worcester, Lawrence, Boston and Brockton, the MassAHEC Network connects students to careers, professionals to communities and communities to better health. MassAHEC inspires, trains, recruits and retains a diverse and broad range of health professionals to practice in communities where the need is greatest.

Primary Care Office
Massachusetts Department of Public Health

The Massachusetts Primary Care Office (PCO), www.mass.gov/dph/primarycare promotes the health and well being of Massachusetts residents by increasing access to comprehensive primary care, in medically underserved areas and for underserved population groups. The PCO administers the state loan repayment and J-1 visa waiver programs, and is the state liaison with the National Health Service Corps, to enhance recruitment and retention of primary care providers in both urban and rural areas.

Massachusetts League of Community Health Centers

Established in 1972, the Massachusetts League of Community Health Centers ("the League") is a non-profit, statewide Primary Care Association representing and serving the needs of the state's community health centers. The League serves as an information source on community-based health care to policymakers, opinion leaders and the media and provides a wide range of technical assistance to its members and communities, including analysis of state and federal health regulatory and policy issues affecting health centers. www.massleague.org.

Center for Health Policy and Research
University of Massachusetts Medical School

The UMass Medical School’s Center for Health Policy and Research is dedicated to research, evaluation, and education initiatives that advance public health policy and outcomes worldwide. Our public service endeavors position us at the forefront of health care and scientific policy formulation. Our distinctive approach informs all our work, including researching and creating policy on public health services.

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Recruitment and Retention of Primary Care Physicians at Community Health Centers: A Survey of Massachusetts Physicians

Executive Summary

Background and Significance: The MassAHEC Network, the Massachusetts Department of Public Health (MDPH) and the Massachusetts League of Community Health Centers (MLCHC) with expertise from the Center for Health Policy and Research (CHPR), UMass Medical School, recently completed a statewide survey of primary care physicians (PCPs) to gain a greater understanding of the key factors influencing a physician’s choice to practice at a Massachusetts community health center (CHC) as well as continue to practice in a CHC in the future. The survey also focused on obtaining key demographics of the CHC primary care physician workforce and the direction in which to focus workforce development.

The literature is replete with documentation that limited access to primary care services and charity care provided by non safety net providers, to the most vulnerable of populations, increases emergency room visits for primary care preventable services. Today’s health care system, characterized by rising costs, diminished staffing levels, heavy utilization, and low compensation for primary care services, suffers from an unstable primary care pipeline. To confront these issues, states like Massachusetts are taking strategic steps to curb costs, provide greater health care access to all residents, and to incent innovations in the primary care delivery system.

As the backbone of the health care safety net system, CHCs function to provide access to innovative, quality health care services, yet contend with high provider turnover and chronically understaffed facilities. The increasing need for PCPs challenges CHCs to fill clinical staff vacancies and recruit and retain primary care staff. Some of the factors related to the challenge of recruiting and retaining primary care physicians at community health centers include: disproportionate staffing by family physicians limiting the scope of recruitment; limited CHC training opportunities; lack of income potential; and a lack of opportunities for professional experiences. Without the aid of recruitment and retention tools like the National Health Service Corps, state loan repayment programs, and the J-1 visa waiver program, CHC clinical personnel might be further reduced.

Methodology: The Massachusetts League of Community Health Centers produced email addresses for all primary care physicians (PCPs) working at one of 62 community health centers (CHCs) across the Commonwealth as of May, 2008. PCPs were included from the specialties of family medicine, internal medicine, pediatrics, medicine-pediatrics, and obstetrics/gynecology. The online survey elicited information about: physician and practice demographics, medical education training, participation in recruitment programs, the process of selecting a CHC practice setting, satisfaction with current practice arrangements, retention strategies with the CHC, and future practice plans. The data analysis assessed factors related to physician retention in a CHC environment in the next five years.

Results Highlights:
- A total of 294 surveys were completed and eligible for analysis - representing 46 of the 62 CHCs and a response/completion rate among eligible participants of 57.8%.
Respondents were predominantly female (60%), over the age of 40 (66%), white (75%), non-Hispanic (88%), and practicing in the Greater Boston area (51%). Nearly three-quarters (72%) reported currently working full-time, and one-half (55%) have been in practice 10 years or more. One-third (34%) were hired in the past three years. Almost two-thirds (61%) reported speaking at least one additional non-English language sufficiently to conduct a new patient history and physical exam. The largest percent of the PCPs were family physicians (39%), followed by internists (31%), pediatricians (27%) and OB/GYNs (3%).

Nearly one-half (48%) of the PCPs reported participating in visa and/or loan repayment programs; nearly one-third (29%) were former participants; and one in five (19%) were current participants.

The majority (55%) of physicians were trained in Massachusetts and New England/New York with 16% of the providers having attended an international medical school. An even larger percentage of physicians (69%) completed residencies in Massachusetts and New England/New York.

A total of 80% of physicians reported that their residency training prepared them for working with underserved populations and 75% reported being prepared to practice in a CHC; however, only 24% reported being prepared to work with an electronic medical record.

When queried about factors important in first considering a CHC for employment, 89% of physicians reported wanting to work for an organization whose mission they believed in. Also important was visiting the health center, understanding the community served, meeting the health care team and responding to professional development needs (in excess of 80% reporting these factors as important).

The decision to join their current health center practice was noted to be based on impressions of the importance of: the mission and goals of the CHC (90% of respondents), the administration’s support for clinical practice goals (79%), and the CHC model of care with an inter-professional team (78%).

Physicians reported being most satisfied in their current CHC with numerous factors: the mission and goals of the CHC (82%), the diversity of patients (82%), the CHC model of inter-professional care teams (63%), and the opportunity to teach medical students and residents (61%).

Continuing to practice in a CHC in Massachusetts was rated most high in relation to: work/life balances (94%), support and operational staff (85%), support for professional development (82%), and compensation (80%).

While the majority of physicians plan to continue working with underserved populations (87%), remaining in Massachusetts (83%), remaining in their current CHC (66%), or remaining in a CHC practice somewhere (66%) over the next five years, 52% predict being ‘somewhere else’ in 10 years.

When factoring all of these variables together, physicians who were more likely to report that they were planning on remaining in a CHC environment in the next five years were more likely to be female, practicing in an urban setting, and having been in practice for 10 years or more. They were also more likely to report being very prepared to practice in this setting at the end of their residency training and that the interview process was important in making a decision to joining their CHC. Higher levels of satisfaction with their current compensation package was significantly related to being more likely to remain in the CHC setting as was increased satisfaction with the mission and goals of the CHC and the diversity of patients being seen.
Conclusions: Massachusetts has often been at the forefront of advancing the importance of community health centers and their mission. The feedback and insights from practicing primary care physicians in community health centers in Massachusetts can inform community health center advocates, executive leadership, policy makers and educators nationally as they design and implement primary care training, workforce initiatives, and practice redesign.

It is clear that the responding physicians value the mission of community health centers and the diversity of the patients served. Exposure to community health practice early on and throughout training fosters a social commitment; innovative initiatives including courses in community health, clinical rotations at health centers, and seminars presented by CHC physicians must convey the passion of providers and unique advantages of this setting.

Given the specific characteristics identified as important recruitment and retention factors, CHC executives and community boards should review policies and practice to ensure a fit between job benefits and applicants. Health centers must orient applicants to the health center, to the clinical team and to the community during the recruitment process to ensure fit and foster interest. Once physicians are engaged in community health, it is incumbent upon policy reformers and executive leadership to develop and sustain efficient clinical operations. Physicians recognized that their success, i.e. their retention, was in part dependent on a competent inter-professional clinical support team skilled in primary care delivery. It is also clear that retention efforts must offer a menu of options including teaching, policy and procedure development and, to a lesser extent, research, as well as fringe benefits and continuing professional development opportunities.

The CHC primary care workforce is at a critical juncture and much opportunity exists to guide the physician pipeline into community-based practice sites. States embarking upon health care reform, particularly reform that includes practice transformation through the patient-centered medical home model concurrent with payment reform, are fertile sites for innovative training, recruitment, and retention initiatives.
Recruitment and Retention of Primary Care Physicians at Community Health Centers: A Survey of Massachusetts Physicians

Background and Significance

The volatile U.S. health care environment is characterized by rising costs, diminished staffing levels, heavy utilization, and low compensation for primary care services, coupled with an unstable primary care pipeline. For the medically disenfranchised, limited access to primary care services and charity care provided by non-safety net providers increases emergency room visits for primary care preventable services (Cunningham, 2007). To confront these issues, states such as Massachusetts are taking strategic steps to curb costs and provide greater health care access to all residents. In addition, they are developing innovations in the primary care delivery system. The patient centered medical home has evolved as a unifying construct that addresses several of these issues.

In this environment, community health centers (CHCs), as the backbone of the health care safety net system (Hurley, Felland, & Lauer, December, 2007), function to provide access to innovative, quality health care services, yet contend with high provider turnover and chronically understaffed facilities. A predicted rise in the numbers of underserved and uninsured, coupled with increasing needs for primary care physicians (Cassil, 2007), challenge CHCs to fill clinical staff vacancies and recruit and retain primary care staff.

Factors related to the challenge of recruiting and retaining primary care physicians (PCPs) at community health centers have been noted in multiple studies. These include: disproportionate staffing of family physicians limiting the scope of recruitment (Rosenblatt, Andrilla, Curtin, & Hart, 2006); limited CHC training opportunities while research shows that completing a residency in a CHC influences the decision to ultimately practice in that setting (Ferguson, Cashman, Savageau, & Lasser, 2009; Morris, Johnson, Kim, & Chen, 2008); and lack of income potential, opportunity for professional experiences, facility characteristics, and sufficient work to support oneself and family (Daniels, VanLeit, Skipper, Sanders, & Rhyne, 2007). Without the aid of recruitment and retention tools such as the National Health Service Corps, state loan repayment programs, and the J-1 visa waiver program, CHC clinical personnel might be further reduced (Rosenblatt, et al., 2006).

Massachusetts has long been a catalyst of change for the nation’s health care system, from the inception of the first community health center in 1965 in Boston to the recent universal care health reform (Ku, Jones, Finnegan, Shin, & Rosenbaum, 2009; Pelletier, February 2009). In a state with a media-purported large supply of primary care physicians, Massachusetts health reform has demonstrated a clear imbalance of primary care access (Ku, et al., 2009). The strain is felt in health care facilities in and around Boston, as well as western Massachusetts. Community Health Connections health centers in Fitchburg, Leominster, and Gardner saw an increase of 200 to 300 patients per month alone following health care reform (Perez-Brennan, 2008). Across the board, Massachusetts CHCs suffer with PCP vacancy rates upwards of 10%. Exploring ways to improve PCP recruitment and retention at these facilities is at a crucial level of importance (Ku, et al., 2009).
The MassAHEC Network and the Massachusetts Department of Public Health’s Primary Care Office, in partnership with the Massachusetts League of Community Health Centers and with expertise from the Center for Health Policy and Research at the University of Massachusetts Medical School, conducted a survey of primary care physicians in Massachusetts' community health centers. Our aim was to gain a greater understanding of the key factors influencing a physician’s choice to practice initially as well as into the future at a health center. The survey included key demographics of the CHC primary care physician workforce and the direction in which to focus workforce development.

**Methods**

The Massachusetts League of Community Health Centers (MLCHC) produced a listing of email addresses for all primary care physicians (PCPs) working at one of 62 community health centers\(^1\) (CHCs) across the Commonwealth as of May, 2008. Primary care physicians were defined as family medicine, internal medicine, pediatrics, medicine-pediatrics, and obstetrics/gynecology. Residents, nurse practitioners and physician assistants were excluded.

A 112-item questionnaire was constructed to elicit information about: physician and practice demographics, medical education training, participation in recruitment programs, the process of selecting a CHC practice setting, satisfaction with current practice arrangements, retention strategies with the CHC, and future practice plans. Survey questions were derived from relevant published literature (Hurley, et al., December, 2007; Landon, Reschovsky, Pham, & Blumenthal, 2006; Massachusetts Medical Society, 2008; Morris, et al., 2008; Rosenblatt, et al., 2006; Stenger, Cashman, & Savageau, 2008).

Using a web-based data collection software application (Snap Surveys Ltd., 2004) and accepted online survey methodology strategies (Sue & Ritter, 2007), an initial cover letter describing the purpose of the study and the survey link were emailed to a total of 569 PCPs. Guided by Dillman’s Total Design Method (Dillman, 2007), three reminder letters were emailed to non-respondents and a final reminder phone call was placed to the medical director at each health center by staff at the MLCHC. The study, which took 15-20 minutes to complete, was approved by the University of Massachusetts Institutional Review Board (IRB).

The recruitment, retention and preparedness variables in the survey instrument were originally queried using 5-point Likert scales from 1 being ‘very important’ (‘very satisfied’ or ‘very prepared’) to 5 being ‘not at all important’ (‘not at all satisfied’ or ‘not at all prepared’). Based on the distributions of these variables, responses were re-categorized into dichotomous variables with codes 1 or 2 (important, satisfied, prepared) versus codes 3, 4, or 5 (not important, not satisfied, not prepared). The exception to this was the final query about the likelihood of career changes in the next five years. Responses were categorized into ‘likely’ (codes 1 or 2), ‘uncertain’ (code 3) or ‘not likely’ (codes 4 or 5) thus allowing us to assess factors related to the likelihood of respondents remaining at their current CHC in the next five years.

Summary scores for several groups of variables (e.g., preparedness to practice upon completion of residency training, factors identified as important in decision-making about joining a CHC or remaining in a CHC setting in the future) were computed. For some of these variable groups, a summary score was computed for all of its components; for other groupings, factor

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\(^1\) MLCHC has 52 corporate CHC members with many care delivery sites. 62 CHC primary care delivery sites were identified for this study.
analyses identified a small number of independent factors representing the individual questions. Based on those results, a secondary factor analysis was computed to confirm whether an overarching single latent domain existed for each set of questions.

Frequency and percentile distributions were used to profile the demographic characteristics of the study population and responses to individual survey items. Bivariate analyses were conducted to assess relationships between key recruitment and retention variables and physician gender, years of practice (highly correlated with age of provider; \( r = .89; p < .0001 \)), year of hire, practice location, relevant medical education factors, and provider satisfaction. These analyses were used to select the independent variables for inclusion in the multivariate analyses.

A mixed model linear regression was performed assessing factors related to the domain of whether the provider expected to be working in a CHC environment in the next five years (the outcome variable). Mixed models were used (with the CHC being a ‘random effect’ variable) to incorporate variation due to clustering of physician respondents within health centers and the impact of this clustering on issues such as retention. Regressions were performed for the total population and then separate models were fit stratified by years of practice: < 10 years and 10+ years. Statistical analyses were performed using SAS V9.1.3 (SAS Institute Inc., 2002-2003).

Findings

Of the original 569 surveys emailed to PCPs, 60 were undeliverable, reflecting both turnover and technology issues. 360 electronic returns were received for a response rate of 63.3%. A total of 294 surveys were completed and eligible for analysis (e.g., some physicians did not describe themselves as primary care providers), representing 46 of the 62 CHCs and a response/completion rate among eligible participants of 57.8% (or 294 of 509 PCPs).

Limited data were available regarding the PCPs who did not respond. The PCP respondents were not significantly different by gender, location of medical school, or location of residency training than those that did not respond. Physicians in the Northeast and Central regions of the state were more likely to respond than those practicing in other areas \((X^2 = 14.01; p = .016)\). Family physicians as well as those in practice less than 10 years were also more likely to respond \((X^2 = 8.53; p = .036 \text{ and } X^2 = 4.98; p = .025, \text{ respectively})\).

The response rates per CHC ranged from 25% to 100%; these did not vary significantly by size of practice (i.e., the number of PCPs who were invited to participate in the study). Given the high variability within the CHCs with regard to response rates, this variable was included in the multivariate analyses; however, the results were not different after controlling for CHC response rates, so the presentation of findings excludes this variable from the analysis.

We analyzed CHC characteristics between practices where at least one physician responded and practices without any provider response. Assessing most recent numbers of unduplicated patients, annual medical visits, number of MD and midlevel FTEs, and ethnic/racial composition of the patient base at the health center, we found statistically significant differences only in the number of patients and number of medical visits. Those CHCs with at least one respondent to this survey had significantly higher numbers of unduplicated patients and medical visits annually.
Sociodemographic and Practice Characteristics

Table 1 and Figures 1-6 present the sociodemographic characteristics of the 294 study subjects. In summary:

- Respondents were predominantly female (60%; Figure 1), over the age of 40 (66%: 29% over the age of 50; Figure 1), white (75%; Figure 2), non-Hispanic (88%; Figure 2), and practicing in the Greater Boston area (51%; Figure 3).
- Nearly three-quarters (72%) reported currently working full-time (Figure 3), and one-half (55%) have been in practice 10 years or more (Figure 4). One-third (34%) were hired in the past three years (Figure 4).
- Nearly two-thirds (61%) reported speaking at least one additional non-English language; (15% of the 61% speaking at least two additional languages) sufficiently to conduct a new patient history and physical exam (Figure 5). Of the 15+ specific languages reported, 46% of the responding physicians spoke Spanish. Those PCPs hired since 2000 were significantly more likely to speak at least one additional non-English language in their medical practice ($X^2=6.06$, $p=.048$), but this was not the case for those hired in the most recent three years.
- The largest percent of responding PCPs were family physicians (39%), followed by internists (31%), pediatricians (27%; 7% of whom were med/peds providers) and OB/GYNs (3%; Figure 6).
- While nearly one-half (45.2%) of PCPs reported that their ‘typical week’ included 25+ hours of direct patient care, many providers reported 1-24 hours of time per week, on average, involved in a range of activities including: research, teaching, administration and consulting. Sixty-eight percent reported some level of involvement in teaching and 81% were engaged in administrative roles, while a majority reported no time devoted to research (85%) or any formal consultative activities (75%).

Practice location was not significantly associated with PCP age, gender, employment status, race, ethnicity, or year of hire. Age and gender were also not significantly associated with one another, regardless of CHC practice location or employment status (full-time versus part-time). Interestingly, there were only a few differences by age and gender when assessing the different provider activities that made up a typical work week. Providers in practice for 10+ years reported significantly less time doing full-time clinical work and more time doing administrative work than less seasoned PCPs ($X^2=7.26$; $p=.007$ and $X^2=4.80$; $p=.028$, respectively); there were no statistically significant differences by gender.

Not surprisingly, new hires in the CHC setting appear to be those most recently trained, especially those trained in the last 5 years, and not physicians moving to a CHC from another setting. The PCPs hired before 2000 were significantly more likely to have been in practice 10+ years ($X^2=83.28$, $p<.0001$).

Medical Education Training Characteristics

Table 1 shows that among the various visa and state/federal loan repayment recruitment programs:

- 52% of the PCPs reported not participating in any of these programs;
- nearly one-third (29%) were former participants; and
- one in five (19%) were current participants (Figure 7).

As expected, significantly more ‘current’ loan repayment participants (74%) were hired since 2004, and the majority of ‘former’ participants (91%) were hired prior to 2004 ($X^2=57.33$; $p<.0001$).
Medical education debt upon completion of medical school was far higher than ‘current’ medical education debt at the time of the survey.

- 26% of PCPs reported no debt at the end of medical school; 34% had debt under $50,000; 18% had debt between $50,000 and $100,000; and 22% had debt exceeding $100,000.
- At the time of the survey, nearly three-quarters (73%) of the PCPs reported no medical education debt; 10% had debt of less than $50,000; 8% reported debt between $50,000 and $100,000; and only 9% reported medical education debt in excess of $100,000.

Most respondents were trained in Massachusetts (31%) and New England/New York (24%) medical schools (Figure 8).

- Of the 115 medical schools attended, 16% of the respondents were international medical school graduates.
- Residency training sites, like the medical schools attended, were representative of all regions of the country. Among the 166 sites listed, 43% were in Massachusetts and an additional 26% were in New England or New York.
- Those trained in Massachusetts or a nearby state, were more likely to practice ‘locally’ (Figure 9).

Of note, those PCPs hired after 2000 were significantly less likely to have trained in Massachusetts (49%) compared to all other regions (range: 65%-72%) ($X^2=9.42; p=.051$). This same trend was seen for the most recently hired (since 2004), but it was not statistically significant.

**Factors Related to Preparedness to Practice in a CHC**

PCPs were asked to what extent they felt prepared for practice after completing their residency. Nearly two-thirds or more reported feeling ‘prepared’ for five of the six items queried:

- work with underserved populations (80%);
- work as a member of a multidisciplinary team (76%);
- to practice in a CHC (75%);
- work with non-English speaking patients (66%); and
- work with Medicaid insurance coverage (65%).

Only one-quarter (24%) of respondents felt prepared to work with an electronic medical record (EMR) at the completion of their residency training (Figure 10).

With the exception of the question on preparedness to work with an EMR, all other variables were consistently significantly related to length of time in practice; i.e., those in practice less than ten years were more likely to report being prepared (overall and often within each individual question; $X^2=5.94; p=.015$ for ‘preparedness’ overall). Of interest, among some of the specific questions on preparedness, family medicine providers were significantly more likely to report being prepared to practice in a CHC ($X^2=5.03; p=.081$, of borderline significance).

The majority of the other sociodemographic and practice characteristics (e.g., gender, employment status, and practice location) were not related to ‘preparedness’ to practice in a CHC.
Factors Related to Selecting a CHC Practice Setting

Nine different questions focused on employment considerations: “When you first considered the CHC where you are currently employed, to what extent was each of the following factors important to you?”

Wanting to ‘work for an organization whose mission I believe in’ was rated ‘important’ by 89% of the responding PCPs (Figure 11) and ranked the highest. This was followed by:

- wanting to serve in an area with severe medical need (67%);
- wanting to serve in a specific geographic region (63%);
- wanting to live near family (52%);
- wanting to serve a specific socioeconomic or ethnic population (51%); and
- wanting to provide health care to patients whose cultural or ethnic background differed from their own (42%).

Far fewer PCPs reported as ‘important’:

- wanting to serve at a site with which they were already familiar (20%);
- wanting to provide health care to patients whose cultural/ethnic background was similar to their own (19%);
- and serving out visa/loan repayment program obligations (10%).

Female PCPs were significantly more likely to consider ‘living near family’ important ($X^2=11.38; p<.001$), as were Family Physicians ($X^2=12.59; p=.002$) and those in practice for less than ten years ($X^2=6.54; p=.011$). Family medicine providers and those in practice for less than 10 years were also significantly more likely to want to ‘serve those with severe medical needs’ ($X^2=5.97; p=.050$ and $X^2=3.70; p=.054$, respectively). Family physicians, compared to pediatricians and internists, were significantly more likely to report they wanted to ‘serve a specific sociodemographic or ethnic population’ ($X^2=6.72; p=.035$). Those hired before 2004 were significantly more likely to consider important ‘serving in a specific geographic region’, and ‘belief in the CHC’s mission’ ($X^2=4.15; p=.042$, and $X^2=9.16; p=.002$, respectively).

Factors Related to Current CHC Practice

Among the seven questions asked about the interviewing process for a position at their current CHC (Figure 12), most factors were reported to be ‘important’ by at least 80% of respondents including:

- visiting the CHC (89%);
- finding a site that met most of their professional needs and goals (87%);
- meeting other members of the clinical team (85%);
- understanding the community of patients to be served (84%);
- and interviewing with other members of the clinical team (80%).

Only one-half (55%) of PCPs felt it important to tour the local community/neighborhood and significantly fewer (19%) felt that the willingness of the CHC to accept visa/loan repayment program participants was an important factor in selecting their current CHC site. With the exception of the question on visa/loan programs (as only a small percent of survey respondents were current participants), female providers ($t=2.24; p=.026$), those out of residency less than 10 years ($t=2.19; p=.030$), and those currently employed full-time ($t=1.78; p=.076$, of borderline significance) had significantly higher ‘important’ sum scores (collectively) for all six of these factors related to interviewing at the CHC when assessing the relationship between the importance of interviewing factors and provider sociodemographic and practice characteristics.
When asked about 12 different factors important in the decision to join their current practice arrangement (Figure 13), physicians rated as most important:
- the mission and goals of the CHC (90%);
- administration’s support for clinical practice goals (79%);
- the CHC model of care with an inter-professional team (78%);
- and the diversity of the patient population (73%).

Approximately one-half of physicians also thought the following were important:
- an opportunity to teach medical students and residents (60%);
- total compensation (58%);
- continuing medical education (52%);
- fringe benefits (51%);
- and an opportunity to participate in policy/procedure development at the CHC (49%).

Of lesser importance were:
- educational opportunities for children (32%);
- opportunity to participate in community-based research (26%);
- and professional opportunities for spouse (25%).

There were a number of interesting correlates of these factors when viewed by physician characteristics. For example, the most recently hired PCPs (both since 2000 and 2004) were significantly more likely to report as important factors: ‘model of care with an inter-professional team’ ($X^2=4.51; p=.034$ and $X^2=3.91; p=.048$, respectively) and ‘total compensation’ ($X^2=7.66; p=.006$ and $X^2=4.75; p=.029$, respectively). Only those hired since 2000 (but not 2004), however, rated ‘compensation’ as a very important factor in this cluster of questions ($X^2=6.83; p=.009$). Full-time PCPs rated as more important ‘participating in policy/procedure developments at CHC’ ($X^2=8.61; p=.003$). Family physicians and internists rated as more important the ‘CHC mission and goals’ ($X^2=6.73; p=.035$). Those in practice less than 10 years rated as more important ‘teaching students/residents’, ‘CME opportunities’, and ‘compensation’ ($X^2=6.86; p=.009$, $X^2=5.45; p=.020$, and $X^2=5.94; p=.015$, respectively).

**Retention Strategies**

PCPs were queried about their level of satisfaction with each of the 12 current practice satisfaction questions (Figure 14).

Physicians rated their highest satisfaction with the:
- mission and goals of the CHC (82%);
- diversity of patient population at the work site (82%);
- CHC model of care with an inter-professional team (63%); and
- opportunity to teach medical students and residents (61%).

One-half (or less) of PCPs rated as ‘satisfied’ the:
- administration’s support for clinical practice goals (52%);
- opportunity to participate in policy/procedure development at the CHC (50%);
- educational opportunities for children (46%);
- professional opportunities for spouse (45%);
- fringe benefits (42%);
- total compensation (42%);
- and continuing medical education benefits (41%); and
Recruitment and Retention of Primary Care Physicians at CHCs

• opportunity to participate in community-based research (36%).

PCPs hired more recently (both since 2000 and 2004) were more satisfied with the diversity of the CHC patient population ($X^2=6.67; p=.010$ and $X^2=8.06; p=.005$, respectively), the mission and goals of the CHC ($X^2=5.75; p=.016$ and $X^2=3.96; p=.047$, respectively), teaching opportunities ($X^2=7.96; p=.005$ and $X^2=9.24; p=.002$, respectively), and to a lesser extent opportunities for research and involvement in CHC policy development. Part-time PCPs reported more satisfaction with diversity of the CHC patient population ($X^2=4.37; p=.037$), total compensation ($X^2=3.82; p=.051$), and professional opportunities for spouse ($X^2=3.79; p=.051$).

Finally, PCPs were questioned regarding the extent to which 16 factors were important in their continuing to practice in a Massachusetts CHC (Figure 15).

Among those factors with the highest ratings were:
- work/life balance (94%);
- support staff or other operational support (85%);
- support for professional development (82%); and
- compensation (80%).

Additional factors rated as ‘important’ included:
- protected time for administrative responsibilities (75%);
- pension plan availability (75%);
- continued medical education reimbursement (74%);
- adjustments to clinical role/call schedule (68%);
- increases to paid time off (for vacation and sick time; 62%);
- proximity to family (61%);
- flex-time / job sharing (56%); and
- protected time for teaching (55%).

Of significantly less importance were:
- productivity incentives (43%);
- addition or increase in mid-level providers (41%);
- protected time for research (21%); and
- spousal/partner job assistance program (12%).

In assessing the characteristics of the physicians responding vis-à-vis factors important to remaining in their current practice environment, full-time PCPs were significantly more likely to report as important: compensation ($X^2=9.07; p=.003$), productivity incentives ($X^2=7.27; p=.007$), pension plan availability ($X^2=7.18; p=.007$), and protected time for administrative responsibilities ($X^2=6.69; p=.010$). Female PCPs were significantly more likely to rate as important: increases in paid time off ($X^2=12.42; p<.001$), flex-time/job sharing ($X^2=35.54; p<.0001$), additions to mid-level providers ($X^2=7.45; p=.006$), and adjustments to clinical role/call schedule ($X^2=14.72; p<.0001$). PCPs in practice fewer than ten years rated as significantly more important: productivity incentives ($X^2=8.96; p=.003$), flex-time/job sharing ($X^2=23.04; p<.0001$), protected time for teaching ($X^2=6.98; p=.008$), protected time for research ($X^2=8.73; p=.003$), and increases in mid-level providers ($X^2=3.76; p=.053$).
Factors Related to Future Shifts in Careers
PCPs were queried about the likelihood of changes in their current practice arrangements over the next five years (Figure 16).

PCPs reported being most ‘likely’ to:
- remain in their current discipline (90%);
- continue to work with an underserved population (87%);
- remain in Massachusetts (83%);
- remain in their present CHC (66%); and
- remain in a CHC somewhere (66%).

Figure 16 also displays the most ‘unlikely’ changes that PCPs expected including:
- retiring (87%);
- moving to private practice (75%);
- moving to a hospital setting (75%); and
- moving out of clinical practice to research or administration (68%).

While only 15% of PCPs thought it ‘likely’ that they would move out of clinical practice into a research or administrative position, 17% felt ‘uncertain’ about this type of move. And while one-third (32%) of providers felt it would be likely that they would move to a leadership position within the CHC, 27% of PCPs were ‘uncertain’ about whether they would make this change over the next five years. Additionally, nearly one in five PCPs felt ‘uncertain’ about their future direction with regard to: remaining in a CHC somewhere (19%), remaining in their current CHC (18%), moving to private practice (18%), and moving to a hospital setting (18%). Lastly, 16% of PCPs felt it was ‘unlikely’ that they would remain in their current CHC in the next five years and 14% reported it was ‘unlikely’ that they would remain in a CHC somewhere.

PCPs with 10+ years of experience and part-time PCPs reported being significantly more likely to ‘remain in current CHC’ (X²=19.43; p<.0001 and X²=13.84; p=.001, respectively) and ‘remain in MA’ (X²=18.26; p=.0001 and X²=6.47; p=.039, respectively). Full-time PCPs were significantly more likely to report a career change by ‘moving to a leadership role in CHC’ (X²=14.75; p<.001).

When asked “Where do you see yourself in 10 years?” nearly one-half of the PCPs reported ‘same place’ (48%) and the remaining (52%) reported ‘somewhere else’ (Figure 17). Female providers were significantly more likely to report an expectation that they would be in the same place in ten years (X²=5.95, p=.015) as were those in practice for more than ten years (X²=3.36, p=.067 – of borderline significance) and part-time providers (X²=8.02, p=.005).

Multivariate Analysis
Table 2 shows the mixed-model regression analyses identifying factors related to the likelihood of PCPs reporting an intention to continue working in a CHC environment and with underserved populations in the next five years. Physicians who were more likely to report that they were planning on remaining in a CHC environment in the next five years were more likely to be female, practice in a Boston-area CHC, and have been in practice for 10 years or more. Those more likely to remain in the CHC setting were also more likely to report being very prepared to practice in this setting at the end of their residency training, that the interview process was important, and that the compensation package was not important in their first consideration to join their current CHC.
Reporting higher levels of satisfaction with their current compensation package was significantly related to being more likely to remain in the CHC setting as was increased satisfaction with the mission and goals of the CHC and the diversity of patients being seen. Finally, those who reported a higher likelihood of retention were also more likely to report as less important opportunities for teaching and research as well as spousal job assistance (these likely being proxy measures for those newer to the CHC who were more likely to report plans to change their environment both in the next five years as well as be ‘somewhere else’ in the next ten years).

Since the bivariate analyses revealed that there were many significant differences between those in practice fewer than 10 years and those with more than 10 years experience at their current CHC, multivariate models were computed independently for the two subgroups of physicians based on years in practice.

When assessing factors related to retention among those providers with fewer than 10 years in practice, a different model emerges (Table 3). No longer are gender and region of practice important factors. Being prepared to practice in a CHC upon completion of residency training was a significant factor, with better preparation being associated with an increased likelihood of remaining in the CHC setting. Preparation to work with an electronic medical record (not seen with the full sample) was also a significant factor, but in the reverse direction; i.e., those physicians who reported being most likely to remain in the CHC setting reported EMR preparation was not a significant factor in their future career planning. Also unimportant was completing a visa/loan repayment obligation in terms of younger physicians’ likelihood of remaining in a CHC setting.

As with the full sample of physicians, the younger providers’ satisfaction with the CHC’s mission and goals was significantly related to their stated likelihood of remaining in a CHC. The mission and goals of the CHC was also a significant factor when newer physicians were first considering working in a CHC. The younger physicians reporting an increased likelihood of remaining in the CHC setting were also more likely to report higher satisfaction with opportunities for research, teaching, practice policy development and being part of an inter-professional team. However, their likelihood of remaining was inversely associated with current opportunities for research or teaching; i.e., those most likely to remain reported that these opportunities were significantly less important in their decision to remain at the CHC.

Among providers with at least 10 years of experience since completing residency training (summarized in Table 4), factors related to an increased likelihood of remaining in the CHC setting in the next five years included: female providers, those reporting as not important wanting to serve patients whose cultural/ethnic background was similar to their own when first considering a CHC setting, those who felt the interview process was important, as well as those currently satisfied both with their compensation and the mission and goals of the CHC where they currently practice. Table 5 provides a side-by-side comparison of these two independent models stratified by years in practice.

**Summary of PCP Reflections**

At the end of the survey, PCPs were asked to reflect on their own experiences with recruitment and retention factors in an open-ended fashion. A theme analysis of these qualitative comments revealed several categories summarizing comments received from over 80 providers. These categories included: administration, workload, compensation, support staff,
Recruitment and Retention of Primary Care Physicians at CHCs

mission, lifestyle, benefits, CHC structure and system, community involvement, and professional development.

PCPs in health centers, like PCPs in other settings, feel the impact of the troubled health care system though perhaps even more acutely then primary care practices in the private sector. They were articulate about these stresses while acknowledging the skills of their colleagues, the importance of their work, and the unique needs of their patients:

“I have worked at my site for 15 years part-time and I put in nearly 40 hours for a 15 hour clinical commitment. The amount of administrative work is much greater since much more falls onto primary care providers. I have found my job to become increasingly harder each year and making it hard to balance family and job. I am amazed by the quality of physicians I work with, but unless major changes to support providers in doing their jobs comes to these centers, I do not think that the community health centers will be able to retain the level of doctors they currently have.”

“The mission of health center is paramount to me in choosing the health center as a place to work; however, with my current experience in trying to recruit additional providers for our health center I think it is difficult to recruit …without commitments because money, benefits and lifestyle seem to be the primary concerns for most recent grads.”

“I like the people I work with - I really respect my colleagues and think they are smart, caring professionals. However, I feel that our systems are so broken; we have so many people/providers who have left…. I'm seeing patients in my administrative time …and I am STILL weeks behind on paperwork. I cannot continue to work this way, and I realize I do have choices.

“There are so many good people here but the system just doesn't work very well for them. And 15 minute visits are just totally unfair for providers and patients working across languages.”

“I love working at my CHC, we have a supportive administration and dynamic doctors. I wish more people knew about it.”

Discussion

The results of this survey can be instrumental in informing policy makers and community health center leaders about characteristics and opinions of current CHC physicians with respect to primary physician training, recruitment and retention. Moreover, the findings provide practical information that implies suggested best practices with respect to stabilizing the safety net physician workforce in CHCs. While some results will confirm impressions of leaders in the fields, others are somewhat surprising and are at odds with other studies describing the primary physician workforce.

Characteristics of Physician Responders

As in other primary care settings, women and family physicians were over-represented in the distribution of CHC physicians completing the survey. While the proportion of physicians underrepresented in medicine is higher than the national and state averages, the proportion does not match the racial and ethnic diversity of populations cared for in CHCs. The majority of
Recruitment and Retention of Primary Care Physicians at CHCs

physician responders report interest in CHCs because of the diversity of the patients served in these settings.

The lower average indebtedness of responders at the end of medical school relative to national averages likely reflects the large proportion of responders in practice for more than ten years, having attended college and medical school when tuition was substantially lower. Likewise, the respondents graduating from the University of Massachusetts Medical School, with low state tuition, and participation in the state’s learning contract for primary care, may have affected average indebtedness. With respect to current indebtedness of younger physicians, the large proportion of individuals with no debt was surprising. It is probably affected by the nearly half of responders who are participating now or previously in loan repayment or scholarship programs, which also affirms the importance of funding availability for loan repayment as a recruitment and retention strategy. Paradoxically, availability of loan forgiveness was not cited as an important recruitment factor and was negatively associated with physician retention. This may reflect the wide availability of loan forgiveness programs for those attracted to the mission of CHCs while physicians who did prioritize this benefit were attracted to practice in these settings for the short-term benefit of loan repayment and did not envision a long term career serving vulnerable populations.

The high proportion of responders who trained in Massachusetts and the Northeast is also consistent with other workforce studies indicating a higher likelihood of practice within some proximity to the site where residency training took place (Burfield, Hough, & Marder, 1986; Seifer, Vranizan, & Grumbach, 1995). While geographic region, practicing in a familiar setting or proximity to one’s family were not important criteria to selecting place of employment, the availability of many practice opportunities in CHCs in the region for primary care physicians may have made this a moot point. Of note, however, women and family physicians did rate proximity to family more highly than other responders. Interestingly, one other study concluded that women and family physicians are especially more likely to remain in the state where residency took place (Seifer, et al., 1995).

The large number of responders reporting facility with one or more languages other than English is also an unexpected finding and is of great advantage given the overrepresentation of patients with limited English proficiency seen in CHCs. However, the survey was not sufficiently detailed to assess the qualifications of physicians to practice in another language.

It is reassuring that most PCPs reported adequate training for practice with CHC populations. The higher proportion of those hired since 2000 who reported adequate preparation likely reflects changes in medical school and residency training, with more emphasis on cultural competence, relationship building and communication skills, as well as team management of chronic illnesses - all relevant in a CHC setting.

It was surprising that over half of the responders were hired before 2000, given reported turnover among the CHC physician workforce. However, this result, as well as this group’s reporting likely long term employment, is consistent with other studies reporting that turnover is much more common between three and five years of employment in a CHC (Rabinowitz, Diamond, Markham, & Hazelwood, 1999).

While 72% reported full-time employment, it is striking that only 45% of responders reported patient care duties of 25 hours or more each week. Thus, 40% of full-time responders see patients substantially less than full-time. This may be explained in part by 80% of responders involved in some administration duties and 60% reporting active teaching. Given the high
Recruitment and Retention of Primary Care Physicians at CHCs

salaries of physicians and high likelihood of lost revenue opportunity, however, it has important
implications for the financial health of CHCs.

**Recruitment Factors Important to Employment Decisions**

One of the most gratifying and validating findings of the study is the overwhelming importance of
CHC mission and service to diverse, underserved populations as the most important
contribution to the decision to practice in a CHC. Other factors relevant to CHC practice such
as the opportunity to be part of an interdisciplinary team were also important. It is interesting
that loan repayment was not a significant factor for most of the respondents to the survey and in
fact was negatively correlated with likelihood to remain at the site. Intuitively, it makes sense
that those most interested in loan repayment may not see the importance of mission and values
but see joining the health center practice as an opportunity to unburden themselves financially
and then move to other practice types.

Other important factors in the decision to join a practice have important implications for health
centers who are actively engaged in recruitment. In particular, applicants have a strong interest
in meeting their future peer physicians during the interview process and demonstrated ability of
the administration to support the clinical mission and ability of physicians to effect health center
policies were deemed important. The factors identified as most important during the recruitment
process are within the purview of the CHC and should be promoted during the recruitment
process.

**Retention Factors**

It is sobering that: 1) 16% of physicians reported that they were unlikely to remain in their site
for five years, and 2) that an additional 19% were uncertain about their short-term plans. The
results are even more startling in response to future plans ten years from the time of the survey;
one-half reported that they would be working someplace else.

Quality of life, compensation, role diversity with time, as well as supports for teaching and/or
administrative duties, were all important to retention. Of note, only half of those responding
were satisfied with administrative support for clinical practice and opportunities to have an
impact on policy decisions in the organization. Also important is adequate, trained support staff;
this may be less costly to achieve and is more important than additional mid-level practitioners
where much focus has been directed.

**Implications for Recruitment and Retention Practices**

Regarding recruiting physicians who are likely to develop their career at a CHC, health center
leaders should be particularly interested in physician applicants who emphasize shared mission
and values, and who express interest in being close to family. Physician applicants who
emphasize loan repayment opportunities and who are less likely to express a passion for the
work will be substantially less likely to remain at the CHC for more than five years.

With respect to planning for physician retention, the issues become more complex. Clearly,
respondents were a dedicated group of physicians who enthusiastically embrace the mission
and work of CHCs. They want to work in an environment that supports this, including support
from administration, skilled support staff and inter-professional teamwork. As physicians mature
in their CHCs, they desire a better lifestyle and more diverse duties beyond direct patient care,
while at the same time expecting better compensation and benefits and more practice supports.
Given that physicians generate the revenue for a practice, how can they engage in patient care
for fewer hours and still fund compensation, benefits and practice supports for more efficient
operations? Shared decision-making about practice management decisions is one strategy to empower physicians to remain committed to the organization. Strategies such as the teaching health center concept (Markuns, Culpepper, & Halpin Jr, 2009) may address two concerns by providing financial support for physicians who teach as well as providing successful and passionate role models for residents.

The need for fewer hours of patient care over time may reflect not only “burnout” due to the demands of managing complex care but also the emotional toll of working with populations in poverty with multiple health and human service needs. Moreover, communicating in other languages or using interpreters can also add a level of strain to the practice of medicine. Perhaps addressing these emotional needs more directly would have a positive impact on physician retention.

Lastly, from the open-ended comments emerges the importance of peer physicians to retention strategies. A strong group of talented physicians who share the health center’s mission and commitment to the population bonds them together. Time and time again, it is recognized that when key physicians leave an organization, it puts retention of the whole group at risk.

**Limitations**

While the response rate and distribution of responders was representative of those physicians practicing in Massachusetts CHCs, there is limited data on non-responders, raising the possibility of bias in the results. This is particularly true for results related to likelihood of continued practice in CHCs since newer physicians are more likely to report a greater likelihood of moving to other practice settings. Likewise, the results of this study may not be generalizable to other regions of the country since only physicians practicing in Massachusetts community health centers were surveyed. With respect to factors important to recruitment, it is possible that physicians with longer employment in the CHC may be inaccurate in their recollection of factors particularly important to their employment decisions. However, “big picture” factors relating to values and motivators for employment in a CHC are probably accurate. For example, the overwhelming importance of mission and service to underserved populations is likely to be an accurate representation even among physicians employed for longer than ten years in the CHC.

**Conclusion**

Massachusetts has often been at the forefront of advancing the importance of community health centers and their mission. While noting the limitations of this study, the feedback and insights from practicing primary care physicians in community health centers in Massachusetts can inform community health center advocates, executive leadership, policy makers and educators nationally as they design and implement primary care training, workforce initiatives, and practice redesign.

It is clear that the physicians surveyed value the mission of community health centers and the diversity of the patients served. Exposure to community health practice early on and throughout training fosters a social commitment; innovative initiatives including courses in community health, clinical rotations at health centers, and seminars presented by CHC physicians must convey the passion of providers and unique advantages of this setting.
This survey also underscores that the important role of family medicine physicians, of women, and increasingly, international medical graduates in the CHC workforce. CHC executives and community boards should review policies and practice to ensure a fit between job benefits and applicants. The national focus on loan repayment, while important, will not solely address the challenges of recruitment; health centers must orient applicants to the health center, to the clinical team and to the community during the recruitment process to ensure fit and nurture interest.

Once physicians are engaged in community health, it is incumbent upon policy reformers and executive leadership to develop and sustain efficient clinical operations. Physicians want to do the work they were trained to do. Physicians recognized that their success, i.e. their retention, was in part dependent on a competent inter-professional clinical support team skilled in primary care delivery.

As physicians mature in their practice, their needs and interests diverge and interest in their own career development increases. It is clear that retention efforts must offer a menu of options including teaching, policy and procedure development and, to a lesser extent, research, as well as fringe benefits and continuing professional development opportunities. These must be flexible and clearly supported by the health center’s administration. Retention of the physician workforce is dependent upon addressing these issues.

Importantly, this study shows that once a commitment is made to caring for underserved populations, working in community health centers and practicing in Massachusetts, if the commitment is sustained, retention is good. This reflects back on the importance of mission, a factor that was echoed repeatedly by the responding physicians.

The CHC primary care workforce is at a critical juncture and opportunity exists to guide the physician pipeline into community-based practice sites. States embarking upon health care reform, particularly reform that includes practice transformation through the patient-centered medical home model concurrent with payment reform, are fertile sites for innovative training, recruitment, and retention initiatives.
References


Appendix A: Figures 1-17

Figure 1: Gender and Age

The age range of responding PCPs was 30-73 years (Mean: 45; SD: 9)

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 2: Race and Ethnicity

Race
- White: 75%
- Asian: 15%
- Black or African American: 4%
- Decline to state: 6%

Ethnicity
- Not Hispanic/Latino: 88%
- Hispanic/Latino: 7%
- Decline to state: 5%

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 3: Location and Employment Status

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 4: Years in Practice

Years in practice (i.e., years out since residency) ranged from 1-42 years (Mean: 13; SD: 9)

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 5: Languages Spoken

<table>
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<tr>
<th>Languages Spoken</th>
<th>Percentage</th>
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<tr>
<td>None</td>
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<tr>
<td>Spanish</td>
<td>46%</td>
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<tr>
<td>French</td>
<td>7%</td>
</tr>
<tr>
<td>Hindi</td>
<td>5%</td>
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<tr>
<td>Portuguese</td>
<td>5%</td>
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<tr>
<td>Chinese</td>
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<tr>
<td>German</td>
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<tr>
<td>Gujarati</td>
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<tr>
<td>Urdu</td>
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<tr>
<td>Arabic</td>
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<tr>
<td>Vietnamese, Khmer, Russian</td>
<td>&lt;1%</td>
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<tr>
<td>Other</td>
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Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 6: Medical Specialty

<table>
<thead>
<tr>
<th>Specialty</th>
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<tbody>
<tr>
<td>Family Medicine</td>
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<td>Internal Medicine</td>
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<td>Pediatrics</td>
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<tr>
<td>FM - No prenatal care or OB</td>
<td>13%</td>
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<tr>
<td>FM - w/prenat</td>
<td>3%</td>
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</tbody>
</table>

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 7: Loan/Visa Program Participants

A number of PCPs participated in > 1 loan repayment program.

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 8: Medical School Training

Top 5 most frequently attended medical schools (of 115 listed):
UMass, Harvard, BU, Tufts, Albany Medical College

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 9: Residency Training

Top 5 most common residency training sites reported (of 166 listed):

- Boston Medical Center, UMass (unspecified) or UMass Family Practice, Greater Lawrence Family Health Center, Massachusetts General Hospital, Boston Children’s Hospital

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 10: Preparedness to Practice in a CHC

When you finished residency, to what extent were you prepared to:

- Practice in a CHC: 75% prepared, 25% not prepared
- Work with underserved: 80% prepared, 20% not prepared
- Work with non-English speaking pts: 66% prepared, 34% not prepared
- Work with EMR: 75% prepared, 25% not prepared
- Work with Medicaid: 65% prepared, 35% not prepared
- Work with interdisciplinary team: 76% prepared, 24% not prepared

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 11: When Considering a CHC

When first considering your current CHC, how important were the following factors:

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 12: When Interviewing at a CHC

When interviewing at your current CHC, how important were the following factors:

- Interview with team: 80% important, 20% not important
- Meet team: 85% important, 15% not important
- Understand patient community: 84% important, 16% not important
- Meet professional needs, goals: 87% important, 13% not important
- Visit CHC: 89% important, 11% not important
- Tour community: 55% important, 45% not important
- CHC accepts loan/visa: 19% important, 81% not important

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 13: When Joining a CHC

In deciding to join your current CHC, how important were the following factors:

- Fringe benefits: 49% important, 51% not important
- Continuing med educ: 52% important, 48% not important
- Total compensation: 58% important, 42% not important
- CHC model of care: 78% important, 22% not important
- Diversity of pts: 73% important, 27% not important
- CHC mission and goals: 90% important
- Administration’s support: 79% important
- Opportunity for research: 74% important, 26% not important
- Opportunity to teach: 60% important, 40% not important
- Opportunity for policy development: 49% important, 51% not important
- Prof. oppy’s - spouse: 25% important, 75% not important
- Educ oppy’s - children: 32% important, 68% not important

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 14: Satisfaction at Current CHC

At your current practice, how satisfied are you with the following factors:

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 15: Continuing to Practice in a CHC

How important are the following factors in continuing to practice in a CHC:

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 16: Likelihood of Career Changes

In the next five years, how likely is it that you will:

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Figure 17: Likelihood of Career Change

Where do you see yourself in 10 years?

Source: Statewide Survey of PCPs in MA CHCs; May, 2008; N=294
Appendix B: Tables 1–5

Table 1. Frequency, percent distributions and descriptive statistics of study sample sociodemographic, practice and medical education characteristics; N=294, 2008.

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 2000</td>
<td>113 (40.1%)</td>
<td></td>
</tr>
<tr>
<td>After 2000</td>
<td>169 (59.9%)</td>
<td></td>
</tr>
<tr>
<td>Before 2004</td>
<td>187 (66.3%)</td>
<td></td>
</tr>
<tr>
<td>After 2004</td>
<td>95 (33.7%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current employment status</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Part-time at this CHC (&lt; 25 hrs/wk)</td>
<td>81 (27.6%)</td>
<td></td>
</tr>
<tr>
<td>Full-time at this CHC (25+ hrs/wk)</td>
<td>212 (72.4%)</td>
<td></td>
</tr>
</tbody>
</table>

**Medical education training**

<table>
<thead>
<tr>
<th>Medical school location</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>88 (30.7%)</td>
<td></td>
</tr>
<tr>
<td>New England/New York</td>
<td>69 (24.0%)</td>
<td></td>
</tr>
<tr>
<td>Eastern U.S.</td>
<td>70 (24.4%)</td>
<td></td>
</tr>
<tr>
<td>Western U.S.</td>
<td>14 (4.9%)</td>
<td></td>
</tr>
<tr>
<td>International medical graduate</td>
<td>46 (16.0%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Residency training site location</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>120 (42.4%)</td>
<td></td>
</tr>
<tr>
<td>New England/New York</td>
<td>74 (26.1%)</td>
<td></td>
</tr>
<tr>
<td>Eastern U.S.</td>
<td>60 (21.2%)</td>
<td></td>
</tr>
<tr>
<td>Western U.S.</td>
<td>26 (9.2%)</td>
<td></td>
</tr>
<tr>
<td>International training site</td>
<td>3 (1.1%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical education debt at end of medical school</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>76 (26.0%)</td>
<td></td>
</tr>
<tr>
<td>$1-$50,000</td>
<td>100 (34.2%)</td>
<td></td>
</tr>
<tr>
<td>$50,001-$100,000</td>
<td>51 (17.5%)</td>
<td></td>
</tr>
<tr>
<td>$100,001-$150,000</td>
<td>29 (9.9%)</td>
<td></td>
</tr>
<tr>
<td>$150,001-$200,000</td>
<td>24 (8.2%)</td>
<td></td>
</tr>
<tr>
<td>$200,000+</td>
<td>12 (4.1%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current medical education debt</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>213 (72.7%)</td>
<td></td>
</tr>
<tr>
<td>$1-$50,000</td>
<td>29 (9.9%)</td>
<td></td>
</tr>
<tr>
<td>$50,001-$100,000</td>
<td>23 (7.8%)</td>
<td></td>
</tr>
<tr>
<td>$100,001-$150,000</td>
<td>15 (5.1%)</td>
<td></td>
</tr>
<tr>
<td>$150,001-$200,000</td>
<td>10 (3.4%)</td>
<td></td>
</tr>
<tr>
<td>$200,000+</td>
<td>3 (1.0%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Visa/Loan repayment program participation**</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>142 (52.0%)</td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>51 (18.7%)</td>
<td></td>
</tr>
<tr>
<td>Former</td>
<td>80 (29.3%)</td>
<td></td>
</tr>
</tbody>
</table>

* Study Sample: Some variables may not total to 294 because of sporadic missing data.

** Respondents may have been both ‘current’ and ‘former’ participants and some providers currently participate in more than one program; thus the total is less than 294.
Table 2. Mixed model regression* results assessing factors important to PCPs remaining in a CHC clinical setting in the next 5 years, N=294, 2008.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Beta estimate (SE)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Beta estimate</td>
<td>p value</td>
</tr>
<tr>
<td>Male</td>
<td>1.6502 (.4876)</td>
<td>.0008</td>
</tr>
<tr>
<td>Female</td>
<td>Referent group</td>
<td></td>
</tr>
<tr>
<td>Region of CHC</td>
<td>Beta estimate</td>
<td>p value</td>
</tr>
<tr>
<td>Boston</td>
<td>-0.8604 (.4620)</td>
<td>.0638</td>
</tr>
<tr>
<td>Non-Boston</td>
<td>Referent group</td>
<td></td>
</tr>
<tr>
<td>Years in practice</td>
<td>Beta estimate</td>
<td>p value</td>
</tr>
<tr>
<td>&lt; 10 Years</td>
<td>1.6779 (.5045)</td>
<td>.0010</td>
</tr>
<tr>
<td>10+ Years</td>
<td>Referent group</td>
<td></td>
</tr>
<tr>
<td>Prepared to practice in a CHC upon completing residency training</td>
<td>0.1551 (.0561)</td>
<td>.0062</td>
</tr>
<tr>
<td>Importance of factors when interviewing at CHC</td>
<td>0.2226 (.0600)</td>
<td>.0003</td>
</tr>
<tr>
<td>Importance of compensation when deciding to join CHC</td>
<td>-0.3331 (.0996)</td>
<td>.0010</td>
</tr>
<tr>
<td>Satisfaction with compensation in current CHC practice</td>
<td>0.3329 (.0888)</td>
<td>.0002</td>
</tr>
<tr>
<td>Satisfaction with mission and goals of current CHC practice</td>
<td>1.1455 (.1749)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Opportunities for research, teaching and family members as important for continuing to practice at CHC</td>
<td>-0.2228 (.0979)</td>
<td>.0237</td>
</tr>
</tbody>
</table>

* CHC was included in the model as a random effects variable.

Higher outcome scores denoted higher likelihood of leaving the CHC environment in the next five years; independent variables summed as domains were also scored such that a higher score denoted decreased reporting of ‘preparation’, ‘importance’, ‘satisfaction’ and ‘retention’.

a – Upon residency completion, prepared to: practice in a CHC, work with underserved populations, work with non-English speaking patients, work with Medicaid insurance coverage, and work in multidisciplinary teams

b – Importance of factors when interviewing at CHC: interviewing with members of the clinical team, meeting other members of the clinical team, understanding the community of patients to be served, finding a site that met professional needs and goals, visiting the CHC, and touring the local community

c – Importance of factors when deciding to join current CHC practice: total compensation, fringe benefits, and continuing medical education benefits

d – Level of satisfaction with current CHC practice arrangement: total compensation, fringe benefits, and continuing medical education benefits

e – Level of satisfaction with current CHC practice arrangement: mission and goals of the CHC, and diversity of the patient population at work site

f – Importance of factors in continuing to practice in a CHC in MA: protected time for research, protected time for teaching, and spousal/partner job assistance program
Table 3. Mixed model regression* results assessing factors important to PCPs remaining in a CHC clinical setting* in the next 5 years among those in practice < 10 years, N=132, 2008.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Beta estimate (SE)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared to practice in a CHC upon completing residency training&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.2052 (.0958)</td>
<td>.0345</td>
</tr>
<tr>
<td>Prepared to work with an electronic medical record</td>
<td>-0.4826 (.2176)</td>
<td>.0287</td>
</tr>
<tr>
<td>Needed to serve out a loan/visa obligation</td>
<td>-0.6258 (.2507)</td>
<td>.0141</td>
</tr>
<tr>
<td>Mission as an important factor when first considering CHC practice&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.3962 (.1137)</td>
<td>.0007</td>
</tr>
<tr>
<td>Satisfaction with mission and goals of current CHC practice&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.0175 (.2709)</td>
<td>.0003</td>
</tr>
<tr>
<td>Satisfaction with research, teaching, policy development participation and being part of interprofessional team&lt;sup&gt;d&lt;/sup&gt;</td>
<td>0.1906 (.0891)</td>
<td>.0348</td>
</tr>
<tr>
<td>Opportunities for research and teaching&lt;sup&gt;e&lt;/sup&gt;</td>
<td>-0.4036 (.1663)</td>
<td>.0169</td>
</tr>
</tbody>
</table>

* CHC was included in the model as a random effects variable.
* Higher outcome scores denoted higher likelihood of leaving the CHC environment in the next five years; independent variables summed as domains were also scored such that a higher score denoted decreased reporting of ‘preparation’, ‘importance’, ‘satisfaction’ and ‘retention’.

<sup>a</sup> – Upon residency completion, prepared to: practice in a CHC, work with underserved populations, work with non-English speaking patients, work with Medicaid insurance coverage, and work in multidisciplinary teams
<sup>b</sup> – When first considering CHC, importance of wanting to: work for an organization whose mission I believed in, serve in an area with severe medical need, serve a specific socioeconomic or ethnic population, and provide health care to patients whose cultural or ethnic background differed from my own
<sup>c</sup> – Level of satisfaction with current CHC practice arrangement: mission and goals of the CHC, and diversity of the patient population at work site
<sup>d</sup> – Level of satisfaction with current CHC practice arrangement: CHC model of care with interprofessional team, opportunity to participate in community-based research, opportunity to teach medical students/residents, opportunity to participate in policy/procedure development, and administration’s support for my clinical practice goals
<sup>e</sup> – Importance of factors in continuing to practice in a CHC in MA: protected time for research, and protected time for teaching
Table 4. Mixed model regression* results assessing factors important to PCPs remaining in a CHC clinical setting* in the next 5 years among those in practice 10+ years, N=158, 2008.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Beta estimate (SE)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.1526 (.5690)</td>
<td>.0002</td>
</tr>
<tr>
<td>Female</td>
<td>-0.6270 (.2555)</td>
<td>.0155</td>
</tr>
<tr>
<td>Importance of wanting to serve patients whose cultural/ethnic background was similar to provider’s own when first considering current CHC practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance of factors when interviewing at CHC</td>
<td>0.2595 (.0681)</td>
<td>.0002</td>
</tr>
<tr>
<td>Satisfaction with compensation at current CHC</td>
<td>0.4222 (.1111)</td>
<td>.0002</td>
</tr>
<tr>
<td>Satisfaction with mission and goals of current CHC practice</td>
<td>1.0571 (.2194)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

* CHC was included in the model as a random effects variable.
* Higher outcome scores denoted higher likelihood of leaving the CHC environment in the next five years; independent variables summed as domains were also scored such that a higher score denoted decreased reporting of ‘preparation’, ‘importance’, ‘satisfaction’ and ‘retention’.

a – Importance of factors when interviewing at CHC: interviewing with members of the clinical team, meeting other members of the clinical team, understanding the community of patients to be served, finding a site that met professional needs and goals, visiting the CHC, and touring the local community

b – Level of satisfaction with current CHC practice compensation: fringe benefits, continuing medical education benefits, and total compensation

c – Level of satisfaction with current CHC practice: mission and goals of the CHC, and diversity of the patient population at work site
Table 5. Mixed model regression* results assessing factors important to PCPs remaining in a CHC clinical setting* in the next 5 years comparing providers with < 10 yrs in practice (N=132) to those in practice 10+ years (N=158), 2008.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Providers in Practice &lt; 10 Years</th>
<th>Providers in Practice 10+ Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta estimate (SE)</td>
<td>p value</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.1526 (.5690)</td>
<td>.0002</td>
</tr>
<tr>
<td>Female</td>
<td>Referent group</td>
<td></td>
</tr>
<tr>
<td>Prepared to practice in a CHC upon completing residency training (a)</td>
<td>0.2052 (.0958)</td>
<td>.0345</td>
</tr>
<tr>
<td>Prepared to work with an electronic medical record</td>
<td>-0.4826 (.2176)</td>
<td>.0287</td>
</tr>
<tr>
<td>Needed to serve out a loan/visa obligation</td>
<td>-0.6258 (.2507)</td>
<td>.0141</td>
</tr>
<tr>
<td>Importance of wanting to serve patients whose cultural/ethnic background was similar to provider’s own when first considering current CHC practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mission as an important factor when first considering CHC practice (b)</td>
<td>0.3962 (.1137)</td>
<td>.0007</td>
</tr>
<tr>
<td>Importance of factors when interviewing at CHC (c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with mission and goals of current CHC practice (d)</td>
<td>1.0175 (.2709)</td>
<td>.0003</td>
</tr>
<tr>
<td>Satisfaction with compensation at current CHC (e)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with research, teaching, policy development participation and being part of interprofessional team (f)</td>
<td>0.1906 (.0891)</td>
<td>.0348</td>
</tr>
<tr>
<td>Opportunities for research and teaching (g)</td>
<td>-0.4036 (.1663)</td>
<td>.0169</td>
</tr>
</tbody>
</table>

* CHC was included in the model as a random effects variable.
* Higher outcome scores denoted higher likelihood of leaving the CHC environment in the next five years; independent variables summed as domains were also scored such that a higher score denoted decreased reporting of ‘preparation’, ‘importance’, ‘satisfaction’ and ‘retention’.

\(a\) – Upon residency completion, prepared to: practice in a CHC, work with underserved populations, work with non-English speaking patients, work with Medicaid insurance coverage, and work in multidisciplinary teams.
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c – Importance of factors when interviewing at CHC: interviewing with members of the clinical team, meeting other members of the clinical team, understanding the community of patients to be served, finding a site that met professional needs and goals, visiting the CHC, and touring the local community

d – Level of satisfaction with current CHC practice arrangement: mission and goals of the CHC, and diversity of the patient population at work site

e – Level of satisfaction with current CHC practice compensation: fringe benefits, continuing medical education benefits, and total compensation

f – Level of satisfaction with current CHC practice arrangement: CHC model of care with interprofessional team, opportunity to participate in community-based research, opportunity to teach medical students/ residents, opportunity to participate in policy/procedure development, and administration’s support for my clinical practice goals

g – Importance of factors in continuing to practice in a CHC in MA: protected time for research, and protected time for teaching
Recruitment and Retention of Primary Care Physicians at CHCs

For more information, please contact Judith Savageau at (508) 856-4333.