

**Recruitment and Retention in Designated Shortage Areas:  
The Effectiveness of Obligatory Health Care Recruitment Programs in the  
Recruitment and Retention of Health Care Service Providers in Delaware**

prepared for



*DELAWARE HEALTH AND SOCIAL SERVICES*

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Division of Public Health

by

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## **Introduction and Overview**

The shortage of primary care physicians, dentists and other mid-level health care professionals<sup>1</sup>, especially in rural areas, has been a challenge for state and local health departments throughout the United States. The lack of an adequate health care workforce is of concern due to its impact on individual access to care, the quality of care received and, in general, the health of persons living in areas with limited availability of necessary health care services. The State of Delaware, despite its limited size, is no exception to these challenges. To best meet the health care needs of at-risk communities and in areas which lack enough health care professionals or support staff (e.g., nurses), the state seeks to better understand recruitment and retention factors important in attracting and retaining an adequate health care workforce to those areas of the state with the greatest need.

Shortages in the health care workforce are the result of many factors. One of the primary factors is an aging workforce in areas of primary care and other medical professions (e.g., dental, mental health), coupled with high retirement eligibility. In addition, anecdotal evidence suggests that rural areas, in particular, face challenges in the lack of educational and training opportunities for medical professionals, lack of opportunities for career advancement and financial concerns including lower pay and limited benefits. Consequently, it has historically been more difficult to recruit and retain health care professionals in rural areas, resulting in high turnover and high vacancy rates.

A number of programs were developed at the state and federal levels to help alleviate shortages among health care professionals through recruitment and retention efforts; some provide financial incentives. These programs are obligatory in nature, generally requiring a commitment of the health care professional to serve in a designated health professional shortage area at a community health center, a private practice or a hospital for a predetermined length of time (usually a minimum of two years). There are four obligatory primary health care recruitment programs available for health care professionals wishing to practice in the state of Delaware. These include the Conrad State 30 / J-1 Visa Waiver Program, the National Health

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<sup>1</sup> For purposes herein, mid-level health care professionals primarily included physician's assistants, nurse practitioners, advanced practice nurses, clinical psychologists, clinical social workers, licensed mental health counselors, psychiatric nurse specialists and dental hygienists.

Service Corp Loan Repayment Program (NHSC-LRP), the National Health Service Corp Scholarship Program (NHSC-SP) and the Delaware State Loan Repayment Program (SLRP).<sup>2</sup> These programs are designed to recruit physicians, dentists and/or other health care professionals to areas of the state identified as being underserved. Some require placement in a Health Professional Shortage Area (HPSA), a Medically Underserved Area (MUA) or a Medically Underserved Population (MUP) (summarized in Appendix A).

To better understand the role obligatory health care recruitment programs play in the recruitment and retention of health care professionals in the state of Delaware, the Delaware Department of Health and Social Services, Division of Public Health engaged the Center for Applied Demography & Survey Research (CADSR) at the University of Delaware to administer a survey among health care professionals and health care facilities currently participating in, or who have previously participated in, one or more of these programs. The objectives of this study are three fold. The first objective is to gauge the types of health care professionals drawn to the state, with an emphasis on type of profession, demographic characteristics and background in working with underserved population groups. Second, the state seeks to understand the challenges faced by health care facilities in recruiting and retaining health care professionals to meet current and future demand for services. Finally, the state seeks to understand what factors draw health care professionals to Delaware and what factors contribute retaining those who participated in one or more obligatory health care recruitment programs.

This report has four primary sections. First to be presented is an overview of the utilization and success of obligatory health care recruitment programs in other states, as it pertains to recruitment and retention. The methodology used in this study follows. Results are then presented. Lastly, there is a discussion of the findings and what conclusions can be drawn from them.

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<sup>2</sup> Although private sponsorships are also available to health care professionals seeking to practice in the state, due to limited availability and source of funding, this type of incentive is not addressed in this report.

## Previous Studies

Previous studies suggest a positive correlation among obligatory health recruitment programs in recruitment efforts. However, retaining health care service providers still proves challenging. Those challenges will be explored and discussed in further detail below.

As mentioned previously, one of the programs designed to address shortages of healthcare professionals in underserved areas in Delaware is the Conrad State 30 / J-1 Visa Waiver Program (herein referred to as the J-1 Visa Waiver Program). This program is designed to recruit foreign medical school graduates, who have completed their medical education in the United States, to serve in areas designated as health professional shortage areas (HPSAs) or medically underserved areas (MUAs). Additionally, 10 slots per year may be used to place physicians in areas deemed underserved by the state.

In general, foreign students completing their medical education in the United States must return to their home country for a minimum of two years prior to returning to practice in the United States. However, the J-1 Visa Waiver Program provides for an exemption to this rule allowing an eligible physician to remain in the United States in exchange for agreeing to practice medicine full-time in a designated HSPA or MUA. At the end of their commitments, the individuals may apply for permanent residency status but are under no obligation to remain in the areas where they practiced or even the states themselves.

A number of studies examined the impact of the J-1 Visa Waiver Program in meeting healthcare needs in designated shortage areas within other states. Hagopian, et. al (2003) conducted a survey among J-1 Visa Waiver Program managers in each state and found that recruitment through this program effectively helped alleviate shortages in designated areas. However, the authors discovered that only a handful of states track the location of these physicians after completion of their commitment (~25 percent), therefore making it difficult to assess retention rates. Furthermore, only 15 percent of states conducted exit interviews to gauge satisfaction with the program and any intent of remaining within the area.

Another study compared retention rates of J-1 physicians and physicians participating in another placement program without J-1 Visa Waivers who were placed in rural HPSAs in Wisconsin. That study found a significantly lower retention rate among physicians participating



in the J-1 Visa Program compared to non J-1 physicians (Crouse & Munson, 2006). The authors found that the main factor in lower retention rates among J-1 physicians in rural areas is difficulty integrating into the communities in which they were placed. This finding supports the conclusions of previous studies (Cutchin, et. al., 1994; Cutchin, 1997) which suggest community characteristics and integration into a given community are strong correlates of physician retention in rural areas, with community integration being one of the most important factors.

The National Health Service Corps (NHSC) was created in the 1970s to improve the delivery of health care services to persons living in communities and areas of the United States where there were limited health care providers and/or services. Scholarships to offset medical school costs were offered as incentives to young doctors to relocate and work in locations determined to have an inadequate number of primary care physicians to meet the needs of the population. Loan repayment was introduced in the 1980s which provided variable loan repayment assistance based on length of a provider's service contract. With the growing awareness that quality of life encompasses more than just primary care services, the program's scope was expanded in the 1990s to include persons seeking to practice in the fields of dentistry and mental health. Similar to that of the J-1 Visa Waiver Program, retention may be an issue. Understanding the factors related to one's decision to stay in their initial placement site or community is imperative to continue to improve access to care and meet the healthcare needs of individuals living in designated health professional shortage areas and medically underserved areas.

Unlike the J-1 Visa Waiver program which recruits "generalists" and "specialists" alike, the NHSC programs specifically target "generalists" (in addition to dentists and mental health professionals) to meet the needs of federally designated HPSAs and MUAs. However, both programs face similar challenges in the retention of recruited physicians. In a comparative analysis of NHSC and non-physicians practicing in rural communities, Pathman, et. al. (1992) examined the retention rates of NHSC program participants versus non-participants over a period of nine years. The authors found that fewer NHSC physicians than non-NHSC physicians remained in their practice or in practice in another rural area. Retention rates were approximately 12 percent for NHSC physicians and 39 percent for non-NHSC physicians at their initial practice site and 29 percent versus 52 percent in rural practice.

NHSC program participants are often placed in Community Health Centers (CHCs). CHCs are often publicly funded practices located in rural areas, medically underserved areas or geographic locations where one or more medically underserved population group exist. These centers often rely on recruitment efforts through programs such as the NHSC to ensure adequate staffing. However, recruitment remains a major challenge as practitioners perceive such placements as being associated with lower salaries than private practices/clinics; and, in rural CHCs, isolation, lower quality schools, lack of adequate housing and lack of spousal job opportunities (Rosenblatt, et. al., 2006). These issues are correlated with the high turnover rates in CHCs as well. In an examination of NHSC and non-NHSC physicians who began their careers in community or migrant health centers, by the end of five years, roughly 17 percent of NHSC physicians were still working at the site compared to 36 percent of non-NHSC physicians (Singer, et. al., 1998). Although community characteristics appear to play a lesser role in the retention of NHSC program physicians than the J-1 Visa Waiver program, NHSC program participants have noted dissatisfaction with site placement and practice administration as reasons for relocation from rural practice (Sibbald, 1998).

Although recruitment and, to a greater extent, retention of NHSC physicians to HPSAs and MUAs pose significant challenges, a study conducted by Rabinowitz, et. al. (2001) suggests recruitment and retention in rural areas can be greatly improved by specifically targeting NHSC program applicants who seek to go into/remain in family practice and who grew up in a rural area or completed a preceptorship in a rural location. The authors found that just below 2 percent of the study cohort without these predictors remained in rural primary care practice.

In addition to the J-1 Visa Waiver program and National Health Service Corp's programs, Delaware also offers a state loan repayment program (SLRP), which is philosophically similar to the NHSC. The decision of the Delaware SLRP to offer student loan repayment is made on a case-by-case basis based on specific needs within given institutional/practice settings and budgetary limitations of the State. The SLRP is not an entitlement; is highly selective; and is used only to the extent necessary for effective recruitment and retention purposes to help offset physician and mid-level health care professional shortages in designated HPSAs and MUAs.

Overall, studies have found state programs to be successful. Pathman et. al. (2004), in a study examining 69 state programs throughout the United States, found that about half of

physicians placed in rural and other underserved areas under a state incentive program remained practicing in their placement site for over eight years. Further analysis revealed that physicians practicing under a state obligatory program were more satisfied with their practice site and communities than non-obligated physicians. These findings may be attributed to obligated physicians' desire to work in the specific state and/or community they sought to complete their service due to personal or familial reasons.

Despite the important role state loan repayment programs play in meeting the health care needs of persons in designated shortage areas, such programs are often overlooked (Pathman, et. al., 2000); and comparisons between the various incentive programs is limited as well. While the J-1 Visa Waiver program, NHSC programs and state loan repayment programs appear to be successful in recruiting health care practitioners to medically underserved areas and designated shortage areas, more research should be conducted to understand the reasons practitioners do not remain in these areas. Another important question is the true role these programs play in the recruitment of physicians to underserved areas. Although placement in underserved areas is high among participants in these financial incentive programs, there is little research examining whether participating physicians would have otherwise opted for a career in an underserved area.

## **Methodology**

The 2013 Health Care Provider Recruitment and Retention survey was conducted among all Delaware health care professionals who participated in an obligatory health care recruitment program in the past five years in Delaware. Of those, contact information was obtained for 85 participants and 44.7 percent completed the survey.

The 2013 Site Survey on Health Care Provider Recruitment and Retention was also administered to better understand from employers the role obligatory health care recruitment programs play in the recruitment and retention of health care professionals in their practices and the communities in which they are located. The 2013 Site Survey on Health Care Provider Recruitment and Retention was administered to 33 facilities. Only facilities identified as currently employing—or having previously employed—health care professionals recruited or retained through one or more obligatory health care recruitment programs in the past five years were included. Among these facilities, the response rate was 39.3 percent.

Given that the population of both health care professionals and practice sites included in this study are known, the surveys were administered via an email invitation and completed online utilizing Qualtrics Research Suite<sup>3</sup>. Pre-letters informed participants of the forthcoming study. The results of these studies are presented below.

It is important to understand the distribution of participation by discipline as well as the demographic characteristics of the health care providers who are drawn to work in Delaware to best determine the focus of future efforts. Included as a description of the types of providers we are attracting to the state, followed by practice site characteristics, as they pertain to the recruitment and retention of health care providers under the various programs. Also presented is information about what draws health care providers to practice and remain in Delaware; community characteristic preferences; and general employment and licensure issues.

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<sup>3</sup> Qualtrics Research Suite is a leading web-based software application that enables secure, encrypted, online data collection and analysis.

## Participation Rates

As shown in Table 1.1, the total number of obligatory health care recruitment program participants varies by program type and primary area of practice. Based on the results of the health care providers survey, in the previous five years the Conrad 30/J-1 Visa Waiver Program (J-1) and the State Loan Repayment Programs (SLRP) have each brought in about 40.6 percent of all obligatory health care recruitment program participant providers. In contrast, the National Health Service Corps (NHSC) programs combined contributed 18.75 percent of obligatory health care recruitment program participant providers over the same time period.

**Table 1.1 Obligatory Health Care Recruitment Program Participation Rates Among Survey Respondents by Primary Area of Practice**

Specialty Discipline	NHSC percent	SLRP percent	J-1 percent	Total percent
Family Medicine	83.33	15.38	7.69	25.00
Internal Medicine	0.00	7.69	46.15	21.88
Obstetrics and Gynecology	0.00	0.00	0.00	0.00
Osteopathic Practitioner	0.00	0.00	0.00	0.00
Pediatrics	0.00	30.77	0.00	12.50
Psychiatry	0.00	7.69	0.00	3.13
Certified Nurse Practitioner	0.00	15.38	0.00	6.25
Licensed Clinical Psychologist	0.00	0.00	0.00	0.00
Licensed Mental Health Counselor	16.67	0.00	0.00	3.13
Physicians' Assistant	0.00	0.00	0.00	0.00
Psychiatric Nurse Specialist	0.00	0.00	0.00	0.00
Pediatrics	0.00	0.00	0.00	0.00
General Practice Dentistry	0.00	23.08	0.00	9.38
Other	0.00	0.00	46.15	18.75

Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

The majority of obligatory health care professionals working in internal medicine came to the state through the J-1 program. Approximately 46 percent of health care professionals serving under the J-1 program work in internal medicine compared to just under 8 percent of SLRP recipients. The SLRP program appears to draw more pediatric specialists; almost 31 percent of health care professionals completing their obligation under SLRP are pediatricians. Finally,

although the SLRP program appears to be the only program responsible for recruiting and/or retaining more certified nurse practitioners, psychiatrists and general practice dentists, this appearance may be attributed to health care professionals in those fields not participating in the study.

As shown in Table 1.1 above, there are stark differences in the types of disciplines health care providers are practicing based on the type of obligatory health care recruitment program through which they were recruited. The NHSC programs have supported primarily physicians practicing in family medicine (83 percent) and licensed mental health counselors (17 percent). Comparatively, the number of SLRP program participants practicing family medicine is about 15 percent and J-1 participants just under 8 percent. The SLRP has not recruited (or retained) any Licensed Mental Health Counselors in the state of Delaware over the past five years.

## Health Care Professional Characteristics

As shown in Figure 2.1, persons serving under an obligatory health care recruitment program are between 25 and 54 years of age with minor variability between service programs. However, the State Loan Repayment Program is more likely to recruit and/or retain health care professionals in the 25 to 34 year age range than the other two programs. About 54 percent of health care professionals serving under the SLRP program are in this age range, compared to about 38 percent of persons in the J-1 program and 33 percent in one of the NHSC programs. By contrast, the NHSC and J-1 programs are more successful at recruiting and retaining health care professionals in the 35 to 44 year age range. This may be largely attributed to the years of schooling required by the practice types most commonly represented by these programs. Only a small percentage of health care professionals serving under an obligatory health care recruitment program are over the age of 45 (8.5 percent statewide). This suggests that if the state is able to retain health care professionals serving under an obligatory health care recruitment program, aging out should not be of great concern.

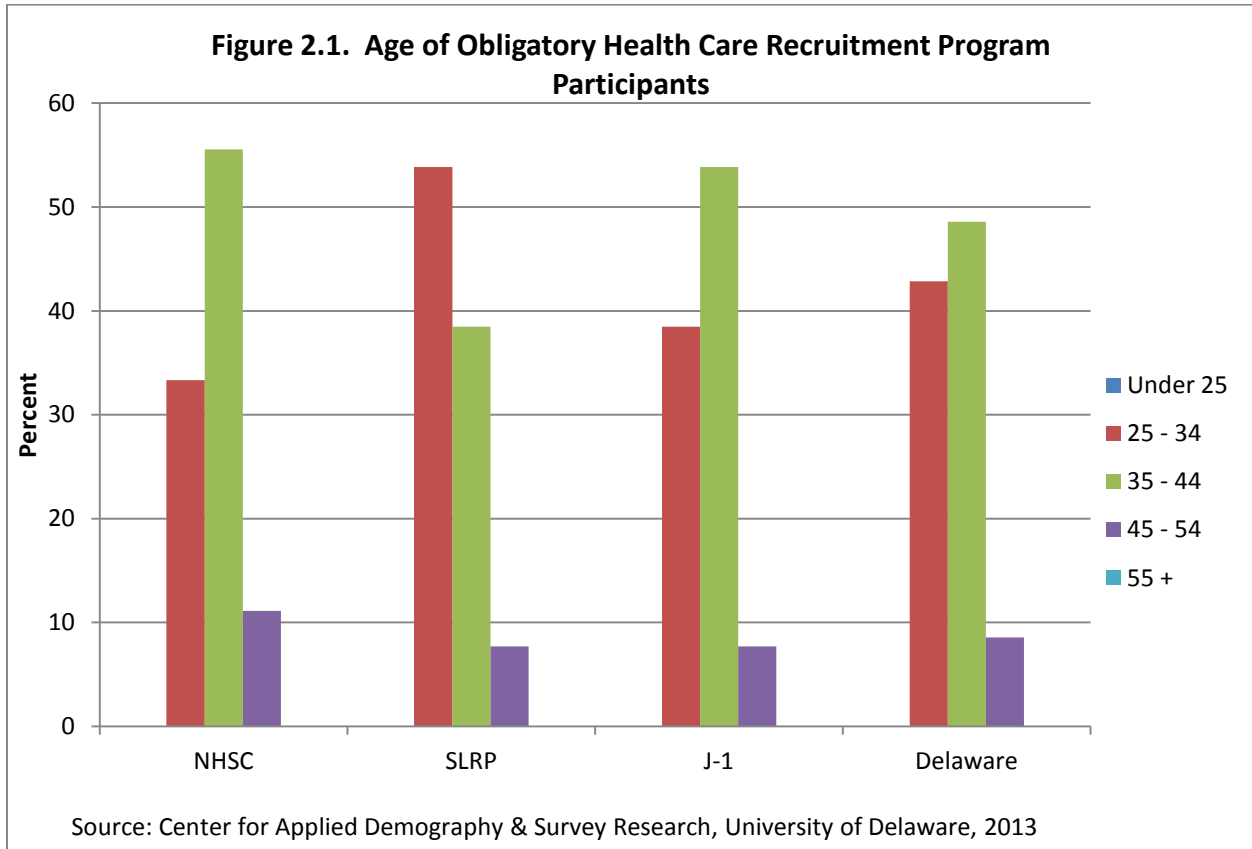
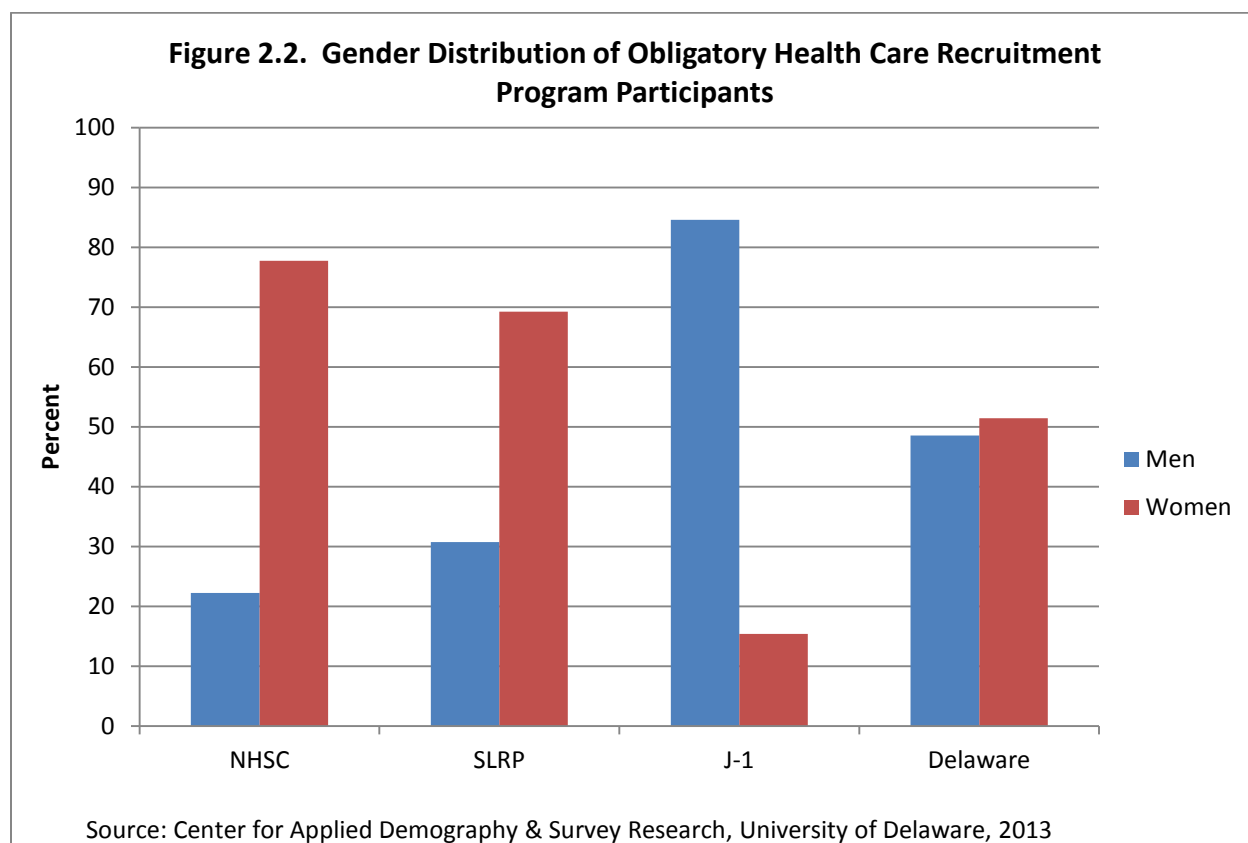


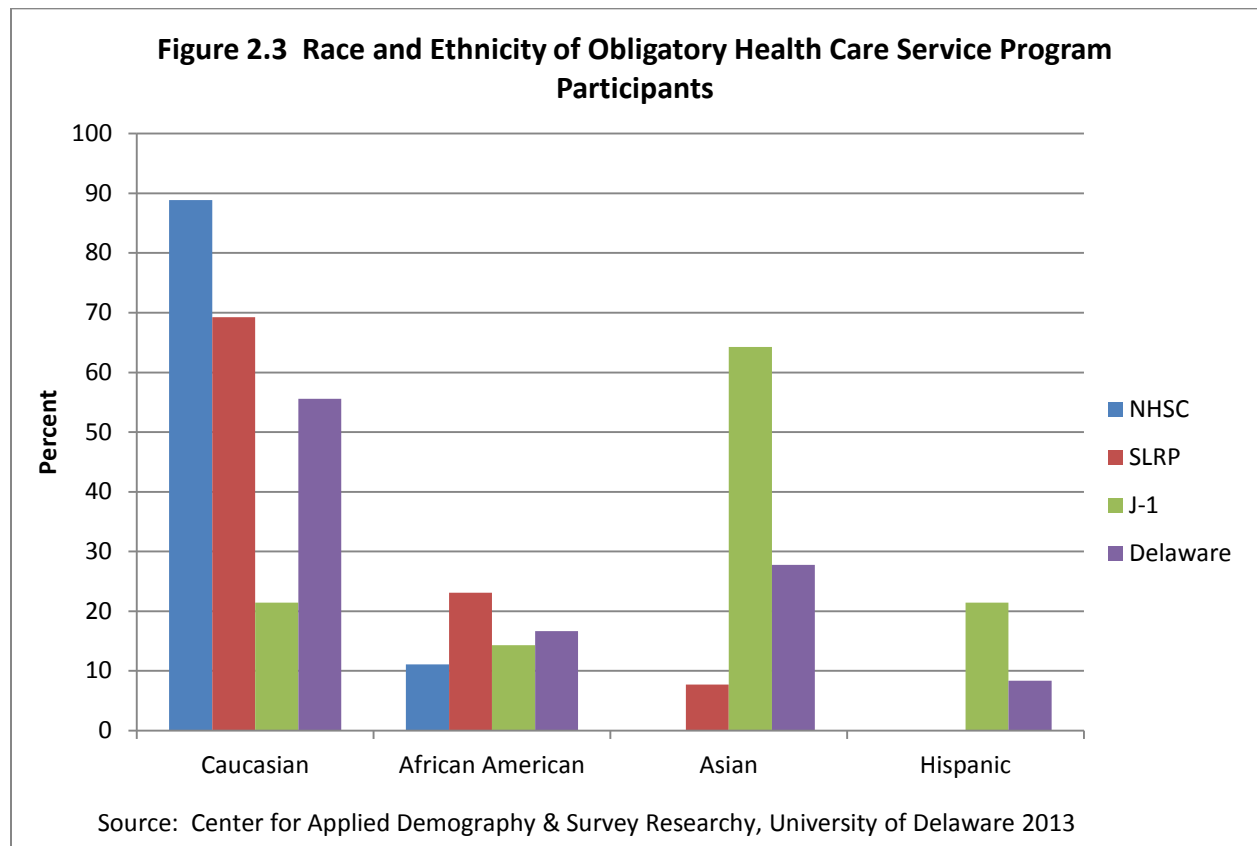
Figure 2.2 shows the gender distribution of health care professionals serving under an obligatory health care recruitment program. At the state level, the number of men and women practicing under one of these programs is nearly equal. However, there is considerable variation in the gender distribution by program type. Approximately 78 percent of health care professionals participating in one of the NHSC programs are women, compared to the 22 percent who are men. There is a similar recruitment and/or retention pattern seen by SLRP participants wherein more of these professionals are women (69 percent) than men (31 percent). The J-1 program, by contrast, recruits and/or retains more men health care professionals (85 percent) than women health care professionals (15 percent).



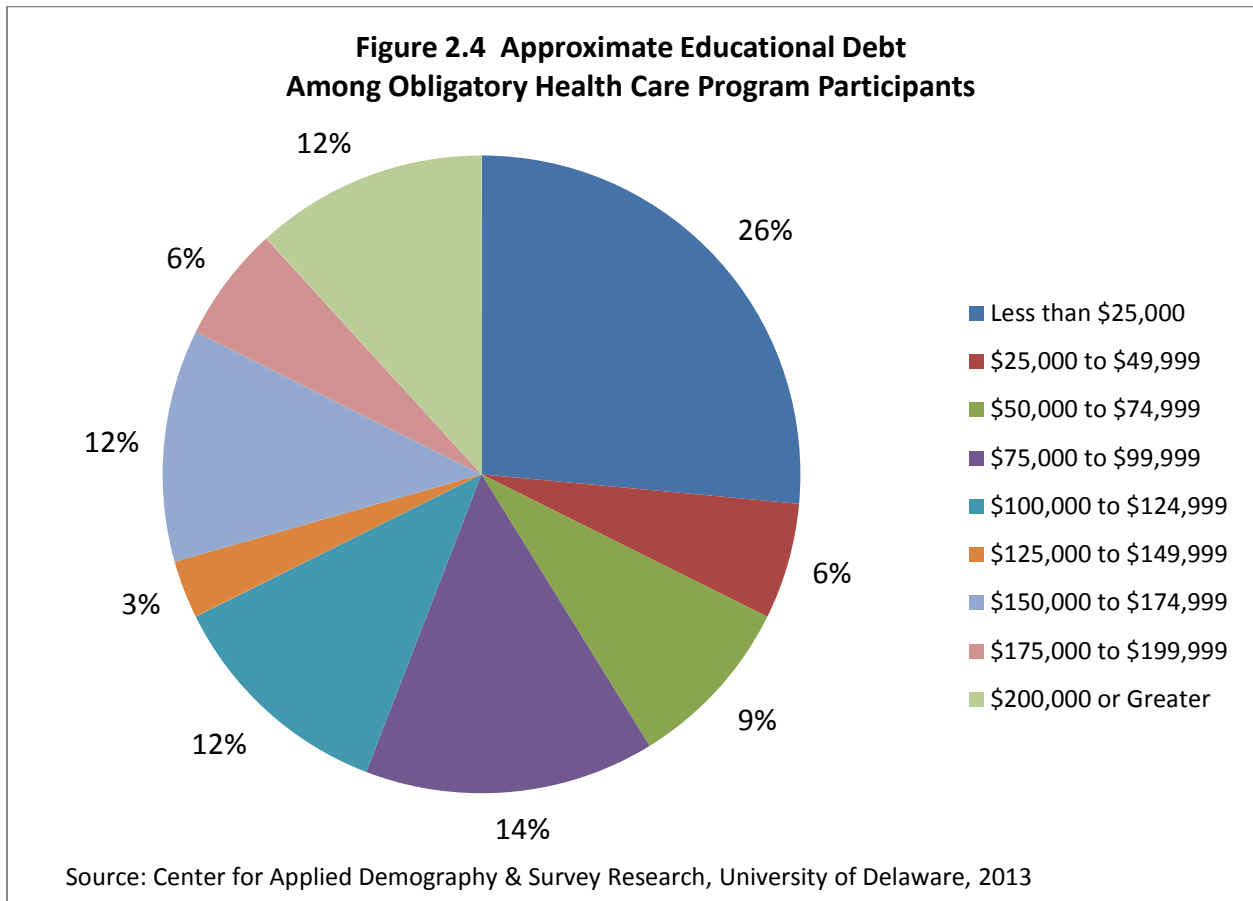
According to the survey results, the only racial groups serving under an obligatory health care recruitment program are Caucasian, African American and Asian (Figure 2.3). No health care service professionals responding to the survey identified themselves as American Indian or Pacific Islander. Some racial distribution differences surfaced. Among NHSC program participants, approximately 89 percent are Caucasian compared to 69 percent of SLRP



participants and roughly 21 percent of health care professionals serving their obligation under the J-1 Program. African Americans are more evenly distributed, with a slightly greater number being recruited and/or retained in the state among SLRP participants. Asian program participants are predominantly through the J-1 Program due to its international recruitment efforts. Finally, about 8 percent of all obligatory health care recruitment program participants serving in the state of Delaware are of Hispanic origin. All persons of Hispanic origin are serving under the J-1 Program and account for 21 percent of those program participants.



The current debt load of active and former obligatory health care recruitment program participants is important in understanding monetary participation motivations. As reflected in Figure 2.4 below, the majority of program participants owe \$75,000 or greater (60 percent) and 30 percent owe at least \$150,000. Debt load is indeed one of the driving factors for participating in an obligatory health care recruitment program to help offset such debt. (The J-1 Program does not have a debt reduction feature).



The next two sections explore how educational debt compares to other motivational factors to serve in Delaware, at current practice site, and in relation to training in an underserved, rural or at-risk area.

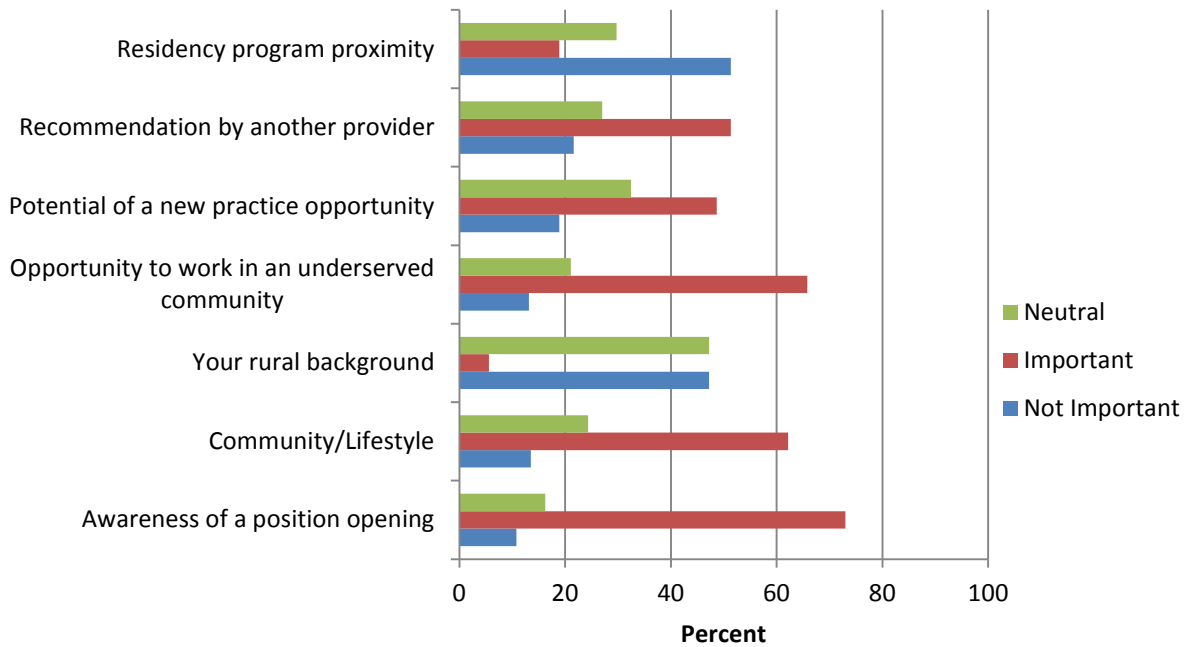
## **Practicing Health Care in Delaware**

Understanding why health care professionals choose to practice in Delaware and the types of sites they choose to practice is important to develop recruitment strategies. Refining such strategies occurs by gaining insight into their satisfaction with their primary practice site, coupled with personal and professional issues of importance in their decision to continue practicing in Delaware or to relocate.

As shown in Figure 3.1 below, health care professionals serving under an obligatory health care recruitment program considered a variety of factors upon choosing to practice in Delaware. Of greatest importance was an awareness of an opening; 73 percent indicated that this factored heavily into their decision to practice in Delaware. The second most influential factor was the opportunity to work in an underserved community (66 percent) followed by their perceptions of community/lifestyle Delaware has to offer (62 percent). Fifty-one percent considered a recommendation by another provider and 49 percent saw the potential of a new practice opportunity as playing an important role in their decision to practice in Delaware. Residency program proximity and the rural background of the health care professional were of least importance (19 percent and 6 percent respectively).

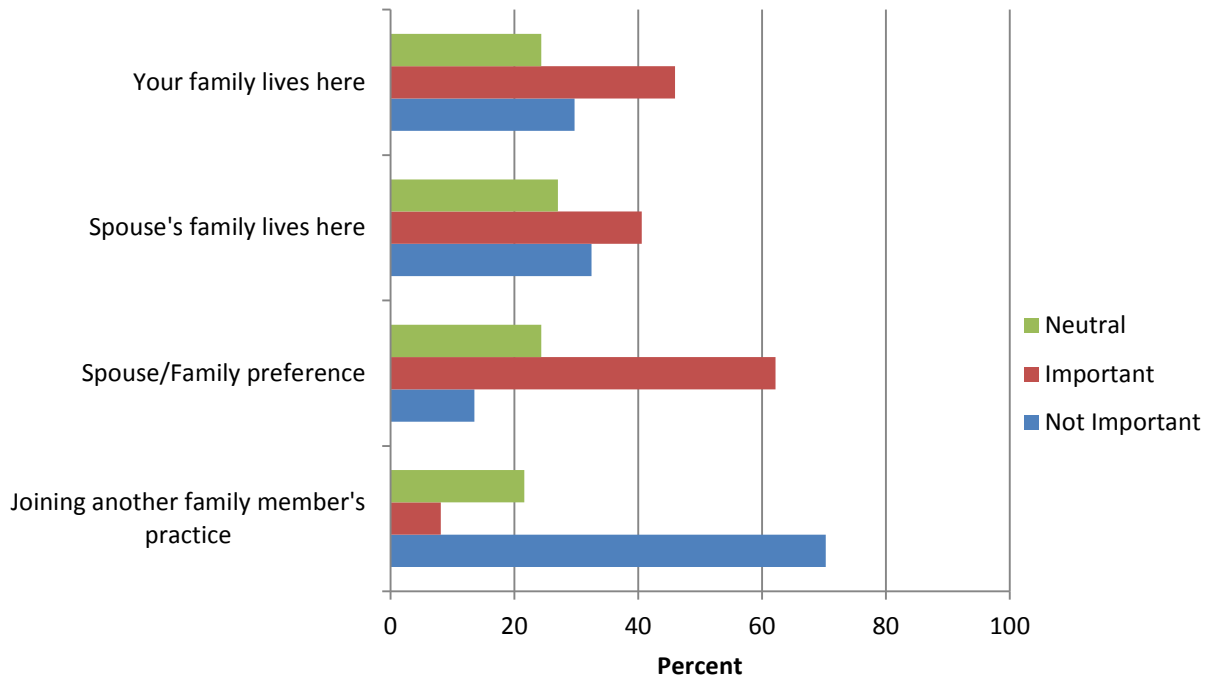
We were also interested in the role family played in the decision to practice in Delaware. These data are provided in Figure 3.2. Sixty-two percent of health care professionals serving in an obligatory health care recruitment program in Delaware indicated that spousal/family preference was important. Forty-six percent indicated that they have family living in Delaware and 41 percent indicate that their spouse's family lives in the state, and these factors were important in their decision to practice here. Only 8 percent of respondents reported that joining another family member's practice was important in their decision to practice in Delaware.

**Figure 3.1 Factors Important in the Decision to Practice in Delaware Among Obligatory Health Care Recruitment Program Participants**



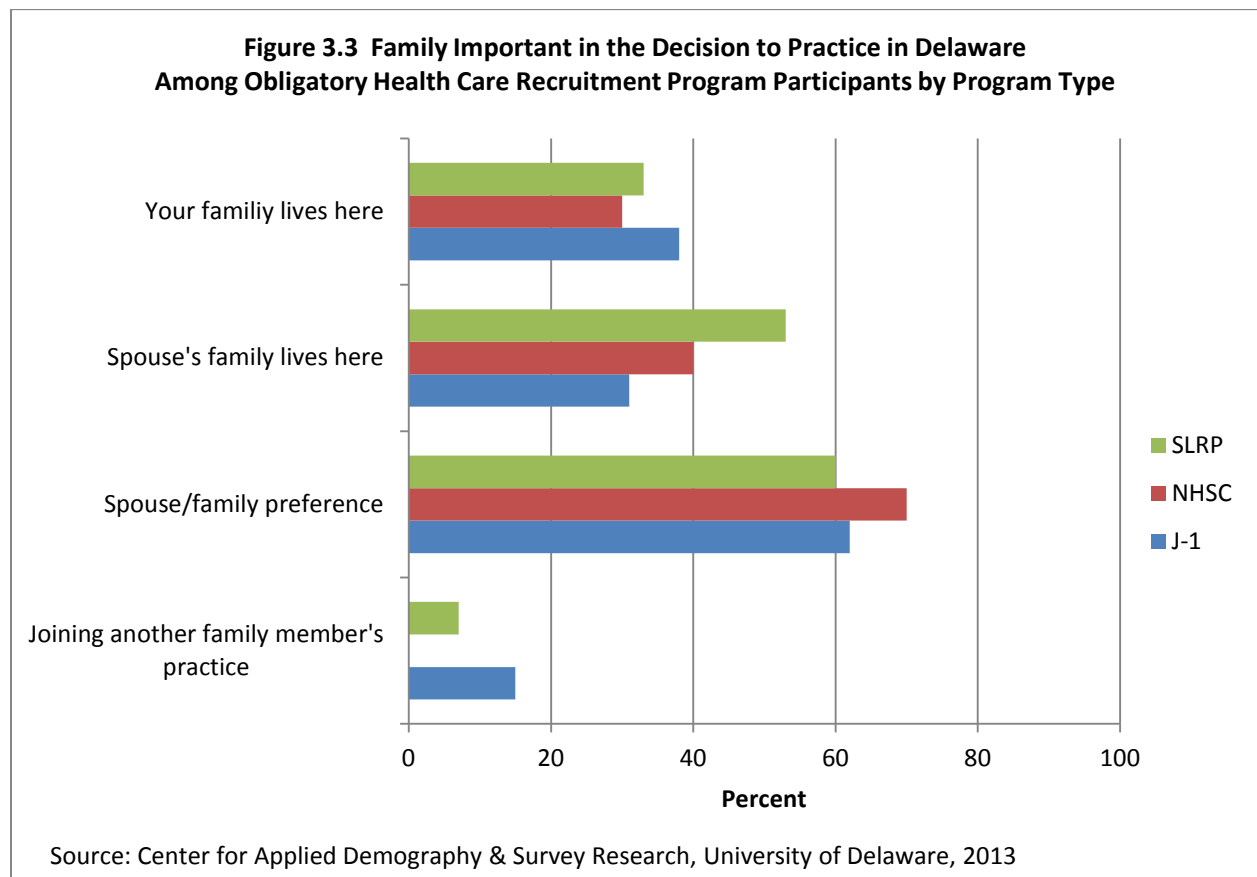
Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

**Figure 3.2 Role of Family in the Decision to Practice in Delaware Among Obligatory Health Care Recruitment Program Participants**



Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

To better understand if family factors contributing to the decision to practice in Delaware varied by program type, data were examined accordingly (Figure 3.3). Regardless of the program, spouse/family preference was cited as the strongest contributing factor in the decision to relocate and practice in Delaware (60 percent). There were a greater number of State Loan Repayment Program participants who indicated that their spouse's family lives here (53 percent) compared to the National Health Care Service Corps programs (40 percent) or the Conrad State 30/J-1 Visa Waiver program (31 percent). In addition, 33 percent of SLRP program participants have family living in the state. Thirty percent of NHSC program participants cited family as an important factor as did 38 percent of J-1 program participants. Joining another family member's practice was not an important factor to most obligatory health care recruitment program participants regardless of program type.



Respondents were asked how important financial assistance was in deciding to practice in Delaware. As shown in Figure 3.4, in general, availability of any financial assistance to pay off educational debt was viewed as important by nearly 60 percent of health care professionals serving under an obligatory health care recruitment program. When narrowed down by program, 21 percent indicated that the National Health Service Corps Scholarship played a role in their deciding to practice in Delaware and 19 percent cited the National Health Service Corps Loan Repayment Program. About 35 percent attributed the Conrad 30/J-1 Program as important in their decision to practice in the state. Approximately 46 percent indicated that the availability of other financial assistance was important. Approximately 46 percent indicated that the availability of other financial assistance was important.

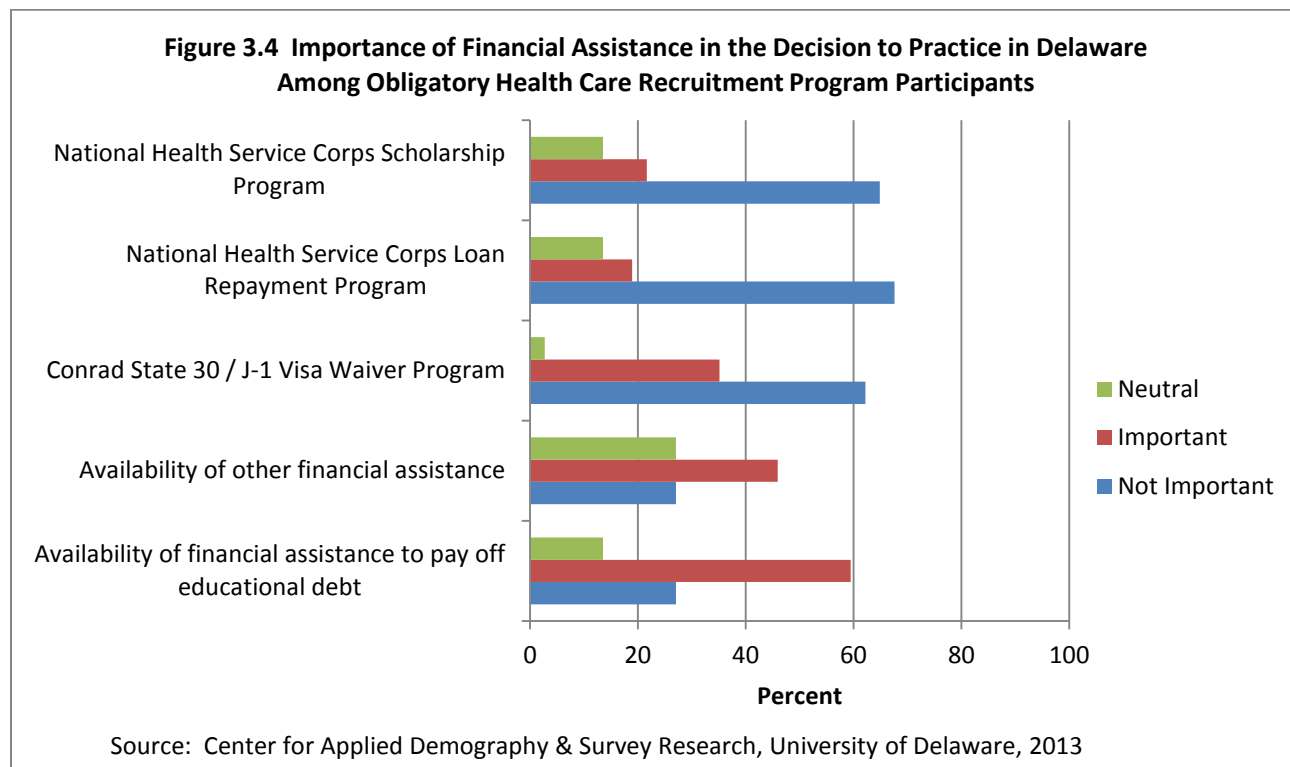
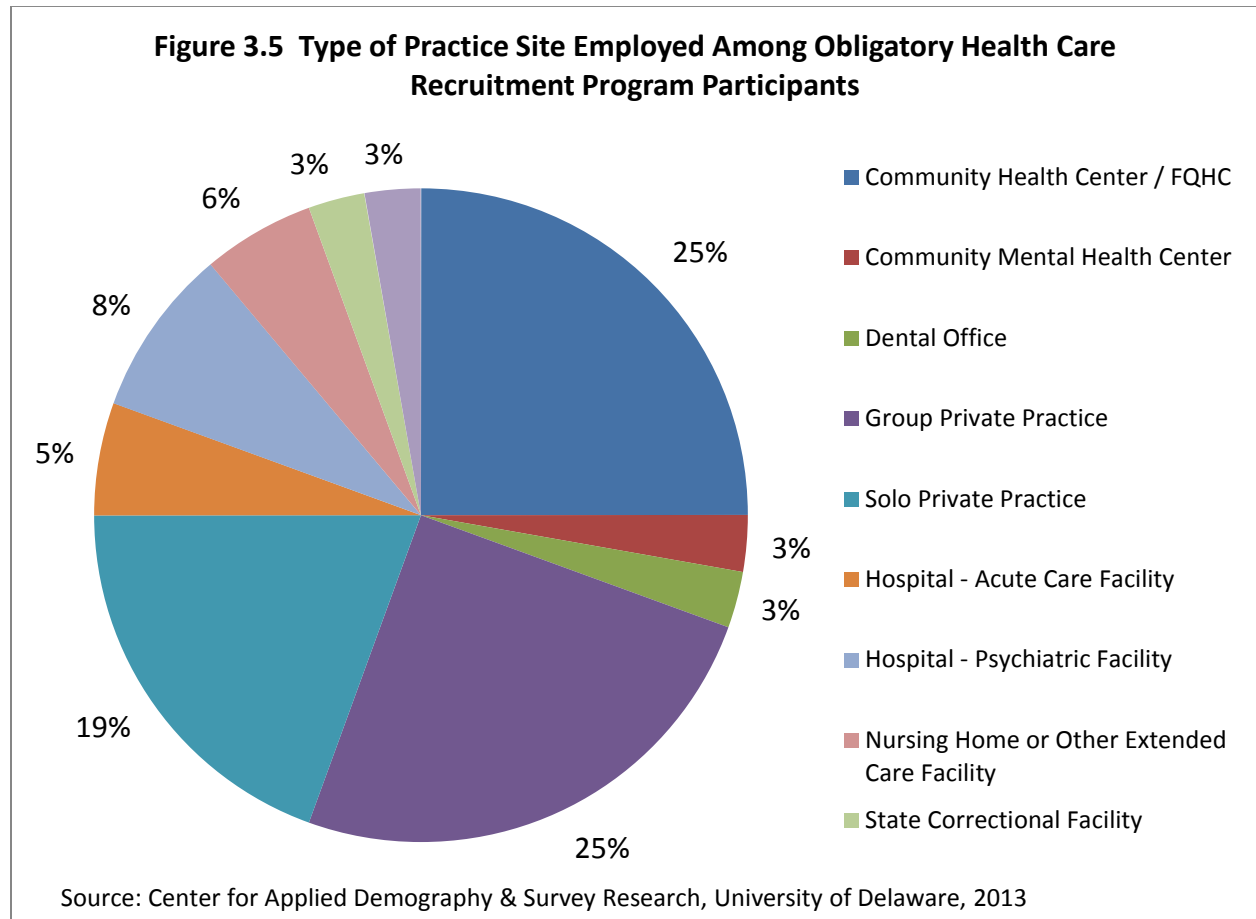


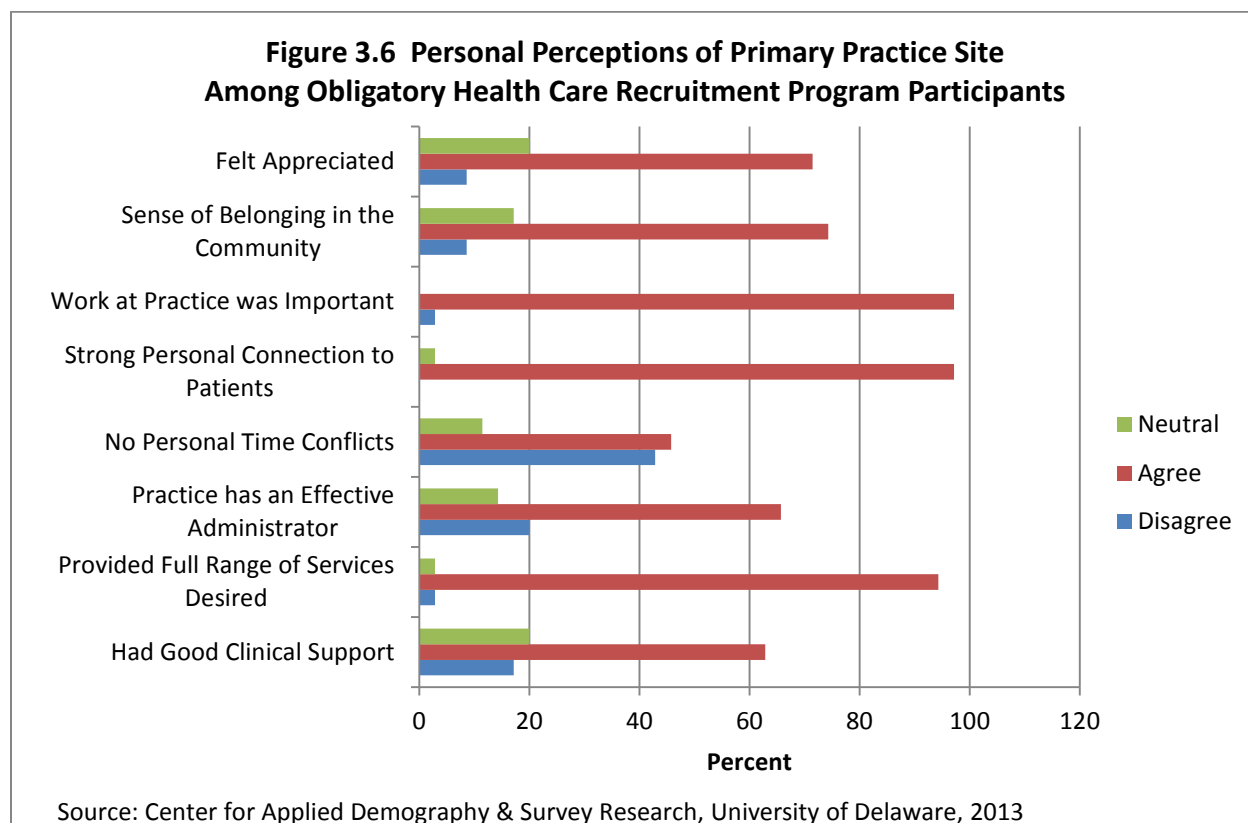
Figure 3.5 reflects the type of practice sites health care professionals were employed under an obligatory health care recruitment program. An equal percentage of health care professionals serving under an obligatory health care recruitment program are employed in either a community health center or a group private practice (25 percent each). An additional 19 percent are employed in a solo private practice. Private practices, in general, make up the largest proportion of employers in which obligatory health care recruitment program participants are

placed. A small proportion (8 percent) were placed in a psychiatric facility within the state, followed by 6 percent serving in a nursing home or other extended care facility and 5 percent serving their obligation in an acute care facility hospital. About 12 percent of all obligatory health care recruitment program participants practice in some other type of location as defined in Figure 3.5.



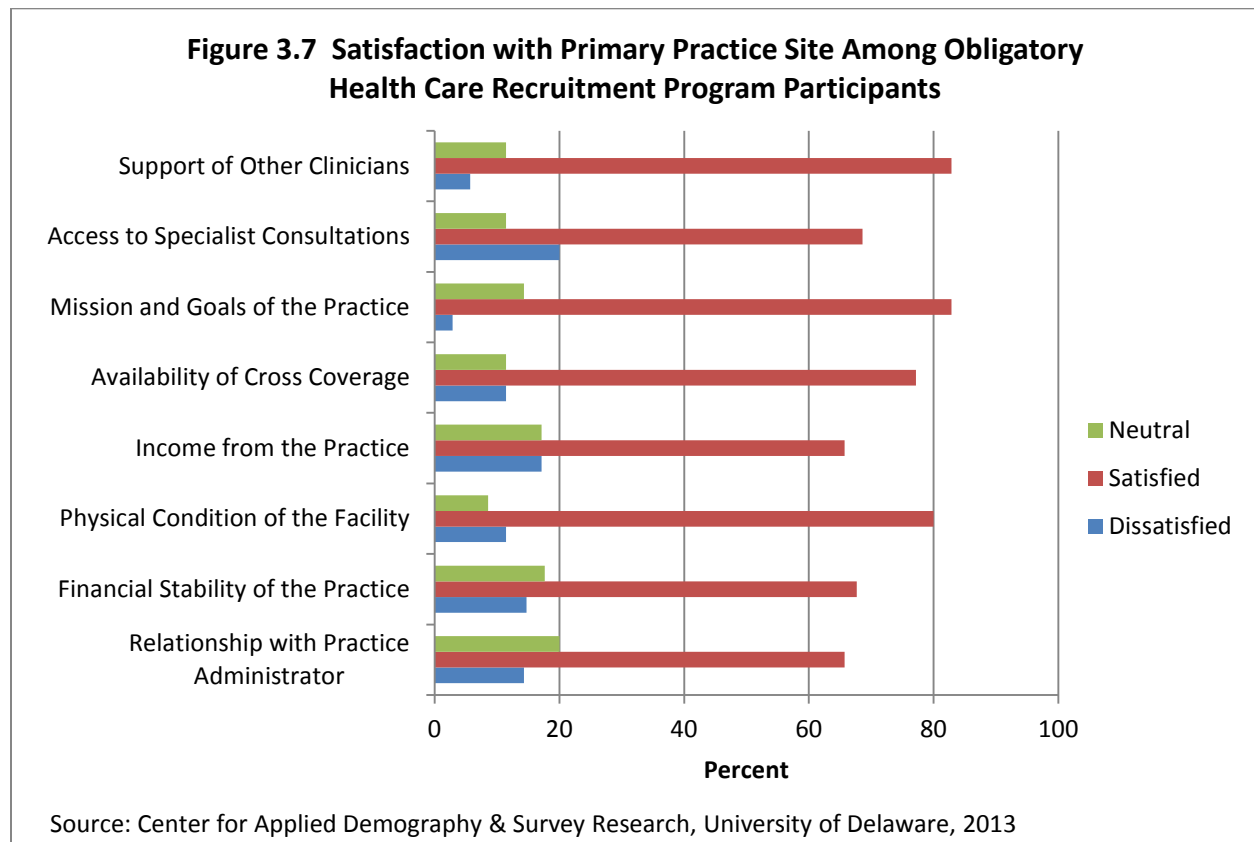
A health care professional's decision to remain at the current practice site, in the community or in Delaware may be attributed largely to their experience within their practice site under an obligatory health care recruitment program. Figure 3.6 highlights the personal perceptions of practice sites among health care professionals. Nearly 100 percent of program participants agreed that the work they were doing at their primary practice site was important, that they felt a strong personal connection to their patients, and that they were able to provide the full range of services for which they were trained and wished to perform. In addition, the majority of program participants agreed that their primary practice site had an effective

administrator (66 percent) and that they had good clinical support (63 percent). There was less agreement about employment within the primary practice site conflicting with personal time. About 43 percent of respondents disagreed that their work schedule rarely interfered with their personal time compared to about 45 percent of program participants who agreed.

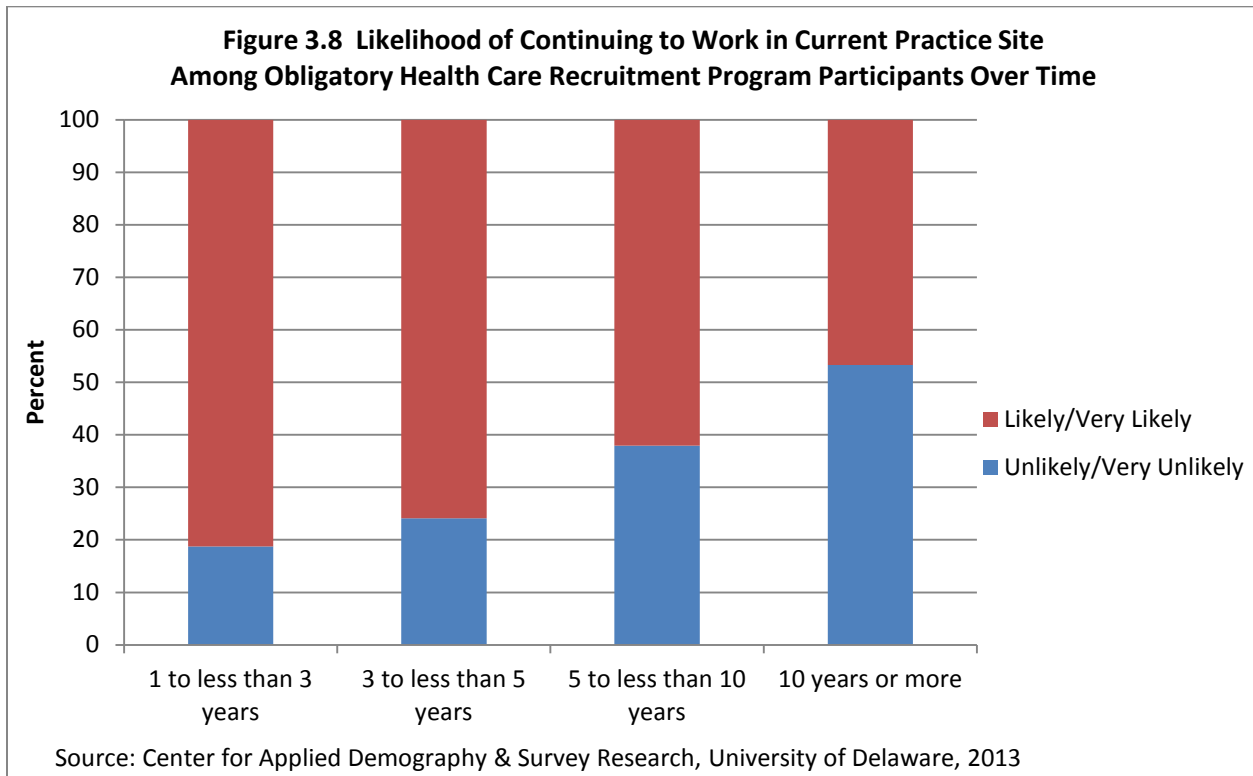


In addition to personal perceptions and experiences of their employment at their primary practice, respondents were also asked about their satisfaction with the practice site itself. A total of 70.5 percent of program participants indicate that, overall, they were satisfied with the practice site in which they work(ed). As shown in Figure 3.7, few health care professionals serving under an obligatory health care recruitment program expressed dissatisfaction in any of the eight criteria measured. At least 80 percent indicated that they were satisfied or very satisfied given the support of other clinicians in the practice, the mission and goals of the practice, and the physical condition of the facility. Seventy-seven percent were satisfied with the availability of cross coverage so they could go on vacation. The majority were also satisfied with the available access to specialist consultations (69 percent), the financial stability of the facility (68 percent) and their income from the practice itself (66 percent).



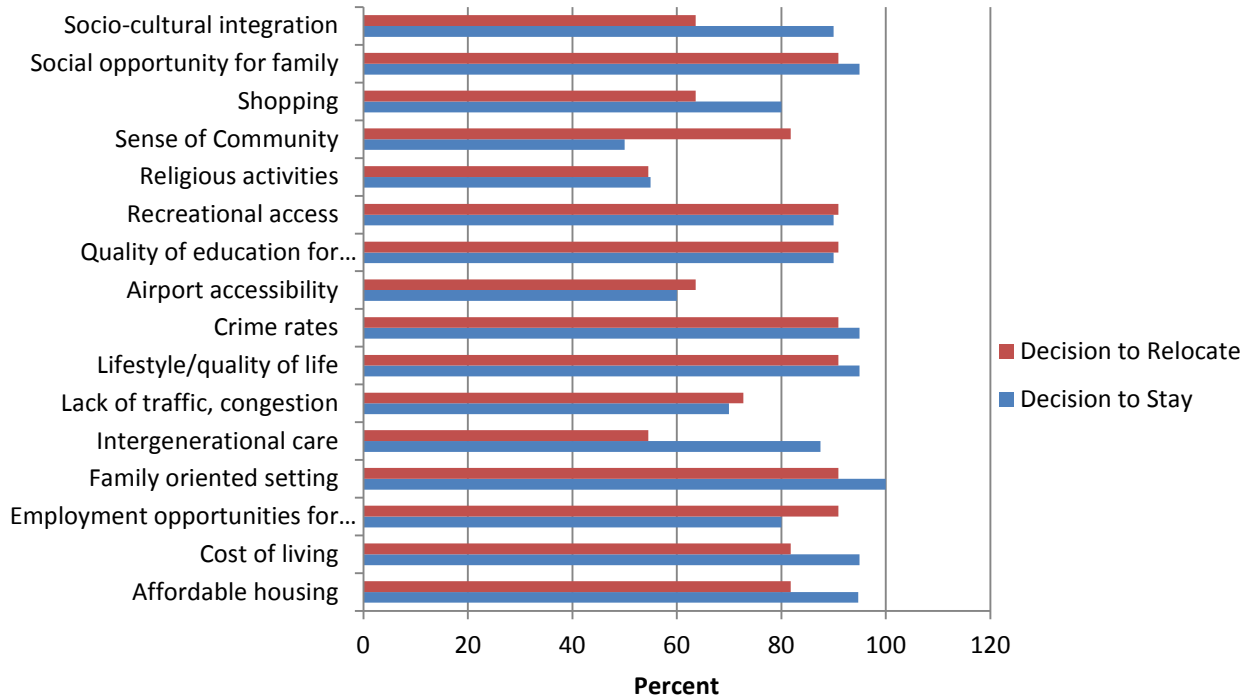


Despite general satisfaction with the primary practice site at which they are employed, over time fewer health care professionals intend to remain in the location where they are serving out their obligation (Figure 3.8). About 81 percent do intend to remain at their current practice site for up to the next three years, but this reduces to about 76 percent at five years out and 62 percent in 10 years. Only about 47 percent of health care professionals serving under an obligatory health care recruitment program intend to remain in their current location greater than 10 years.



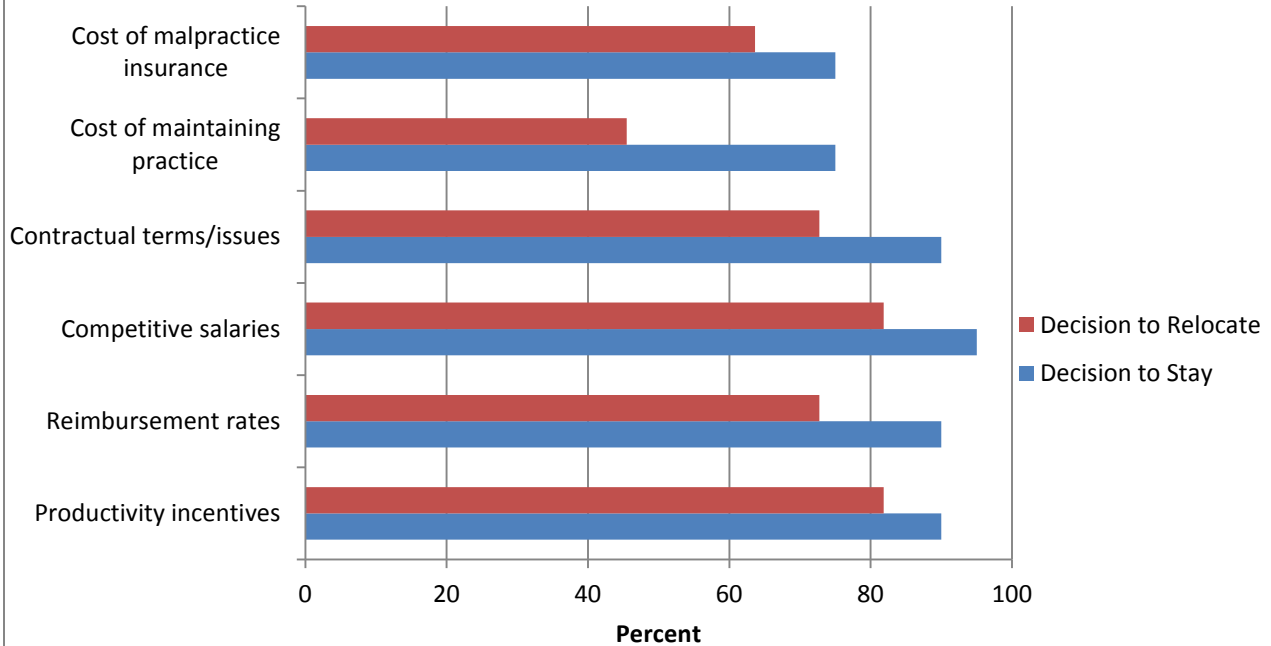
Personal issues, which highlight familial and community aspects, are important in the decision to stay or relocate upon completion of obligatory service (Figure 3.9). One-hundred percent of responding health care professionals, who indicate that they are intending to stay, cite a family-oriented setting as an important factor in their decision and 96 percent indicate cost of living, affordable housing, lifestyle/quality of life and crime rates as most important. Religious activities are lowest on the scale of importance, with only 50 percent indicating that this was a factor in their decision to stay. Social opportunity for family and recreational access were considered most important for those planning to relocate, but not significantly of greater importance for those who plan on staying. Intergenerational care was less important among those planning to relocate than those planning to stay at their current location.

**Figure 3.9 Personal Issues Important in the Decision to Stay or Relocate Among Obligatory Health Care Recruitment Program Participants**



Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

**Figure 3.10 Economic Considerations in the Decision to Stay or Relocate Among Obligatory Health Care Recruitment Program Participants**



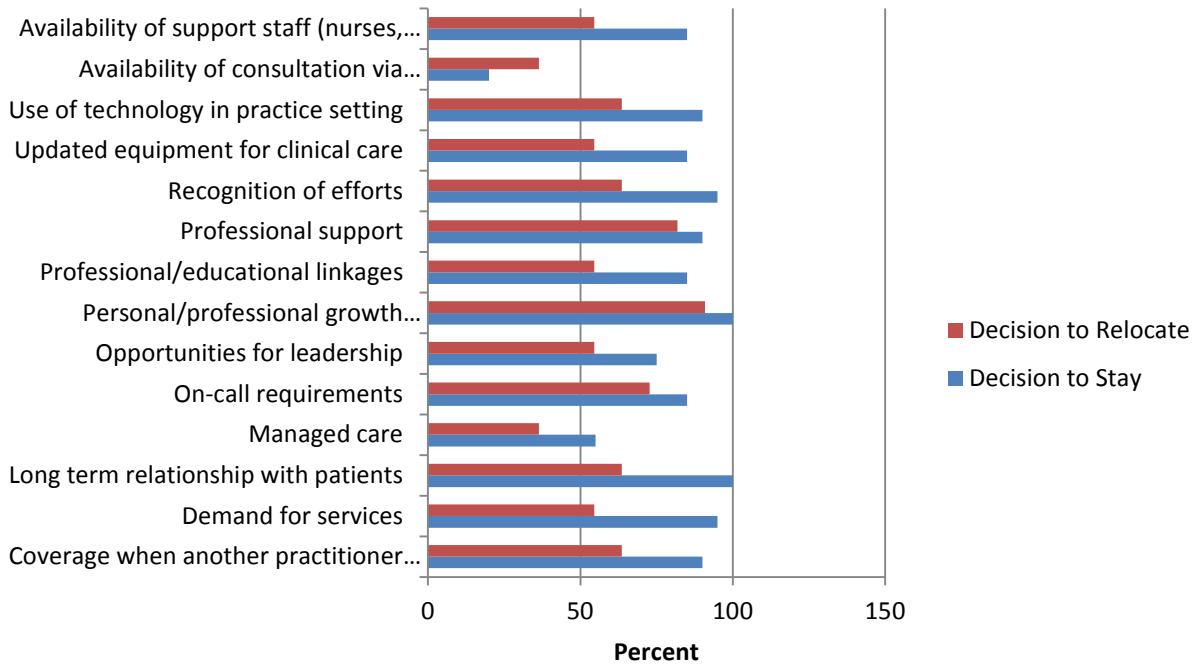
Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

Figure 3.10 highlights the importance of economic considerations at their primary practice site and their importance in their decision to stay or relocate. The data suggest that, in general, the same reasons health care professionals consider staying at their current sites is also a catalyst for their decisions to relocate. Around 96 percent of health care providers serving under an obligatory health care recruitment program cite competitive salaries as a reason for staying and 84 percent indicate that this factor is a reason to relocate. Likewise, about 89 percent of those who plan on staying consider contractual terms/issues as an important factor, and 68 percent of those planning on relocating consider contractual term/issues important.

Similarly, professional issues also play a role in an individual's decision to stay at his or her current practice site. Among professional issues in the decision as to whether to relocate, we see a much sharper contrast among many of the measures. As shown in Figure 3.11 below, 86 percent of health care professionals serving under an obligatory health care program indicated that support staff is an important factor in remaining at their current location, while only about 52 percent of those relocating indicated that this was an important factor in their decision. The factor that seemed the most problematic for those looking to relocate is their personal perception of the availability of personal/professional growth opportunities. Nearly 90 percent looking to relocate indicated that personal/professional growth opportunities were an important factor in their decision. Ninety-three percent of health care professionals wanting to stay cited this as an important factor in their decision.

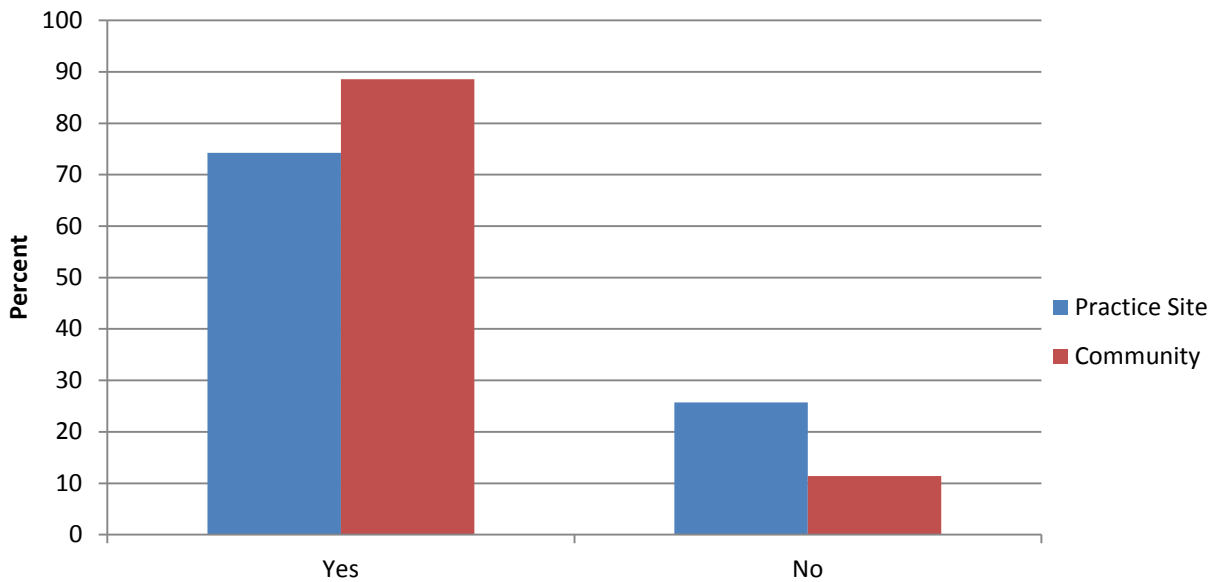
Respondents were also asked if they would recommend their practice site or the community in which they work to other practitioners. The results (Figure 3.12) indicate that a large majority of responding health care professionals serving under an obligatory health care recruitment program would recommend the site at which they were working (74 percent) and/or the community in which they work (89 percent).

**Figure 3.11 Professional Issues Important in the Decision to Stay or Relocate Among Obligatory Health Care Recruitment Program Participants**



Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

**Figure 3.12 Recommendation of Obligatory Health Care Recruitment Program Participants for Working in Current Practice Site or Community**



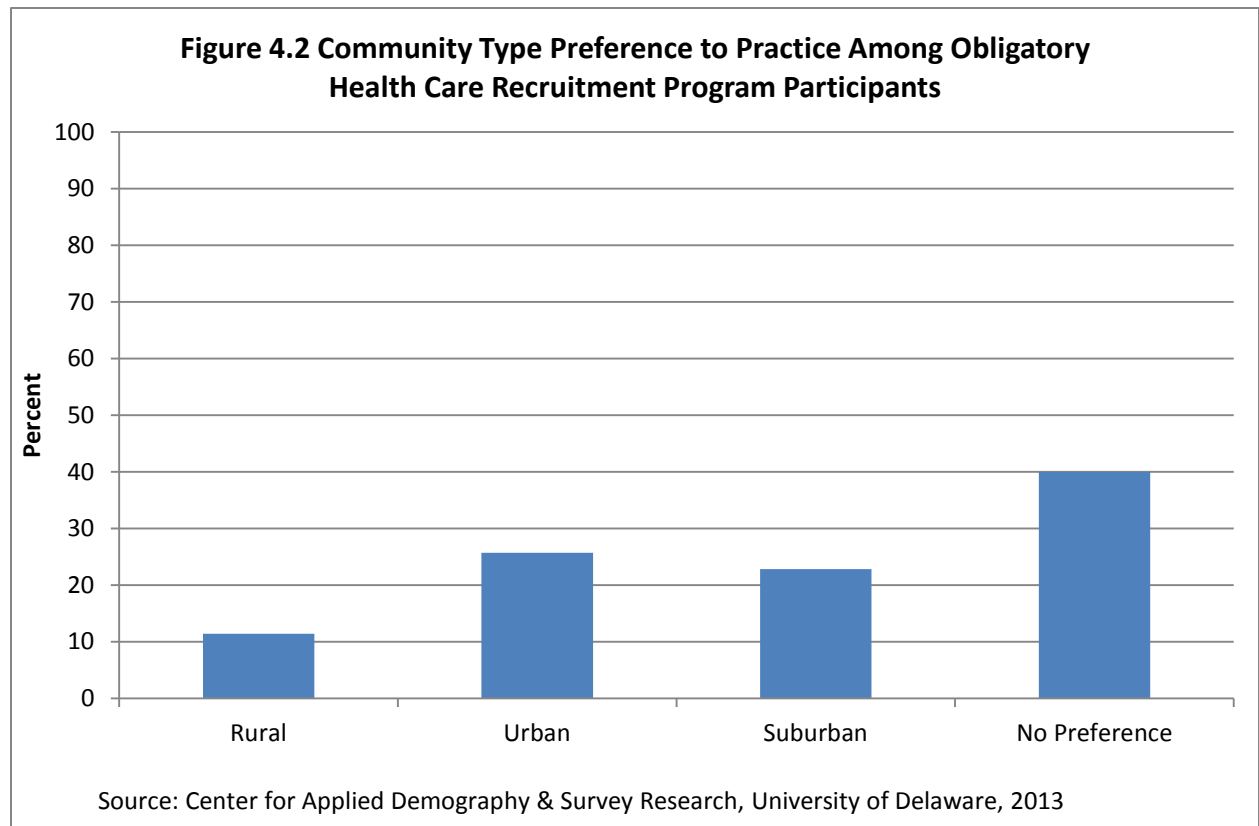
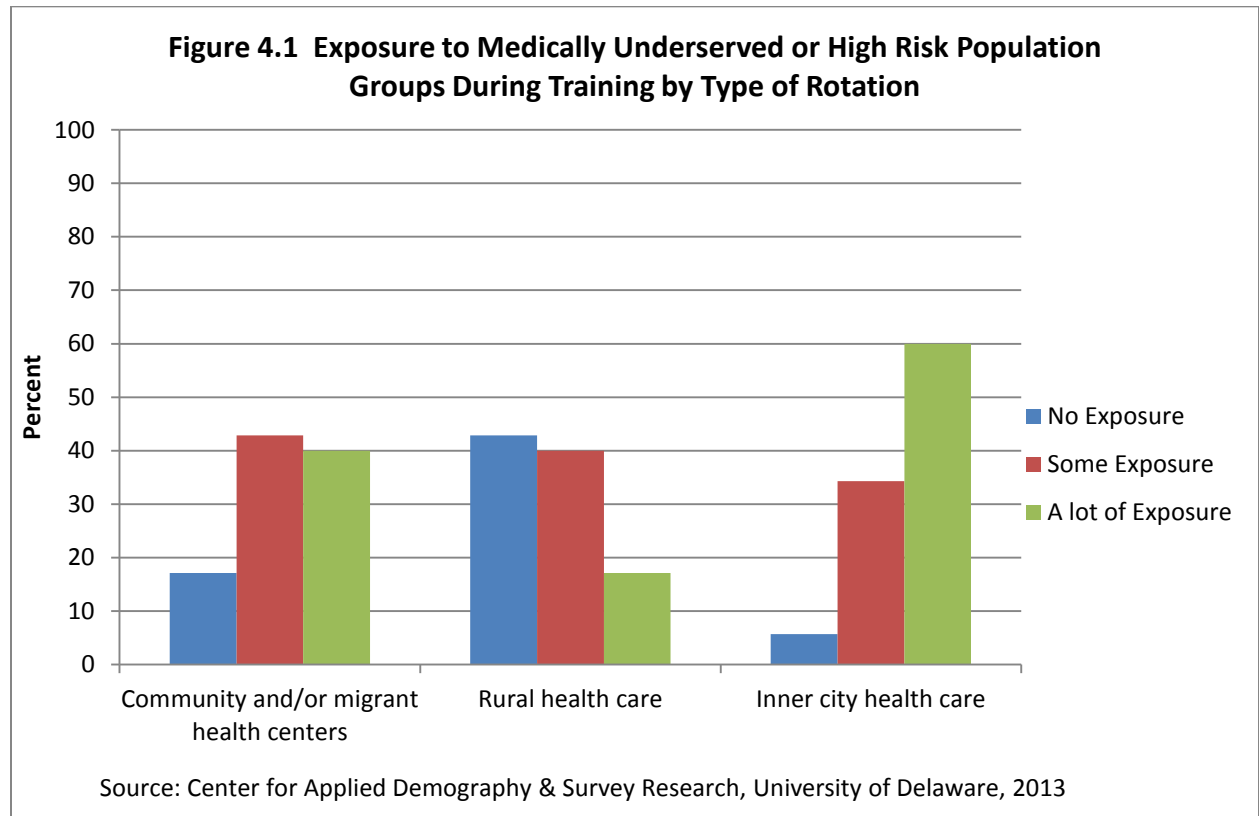
Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

## Community Preference

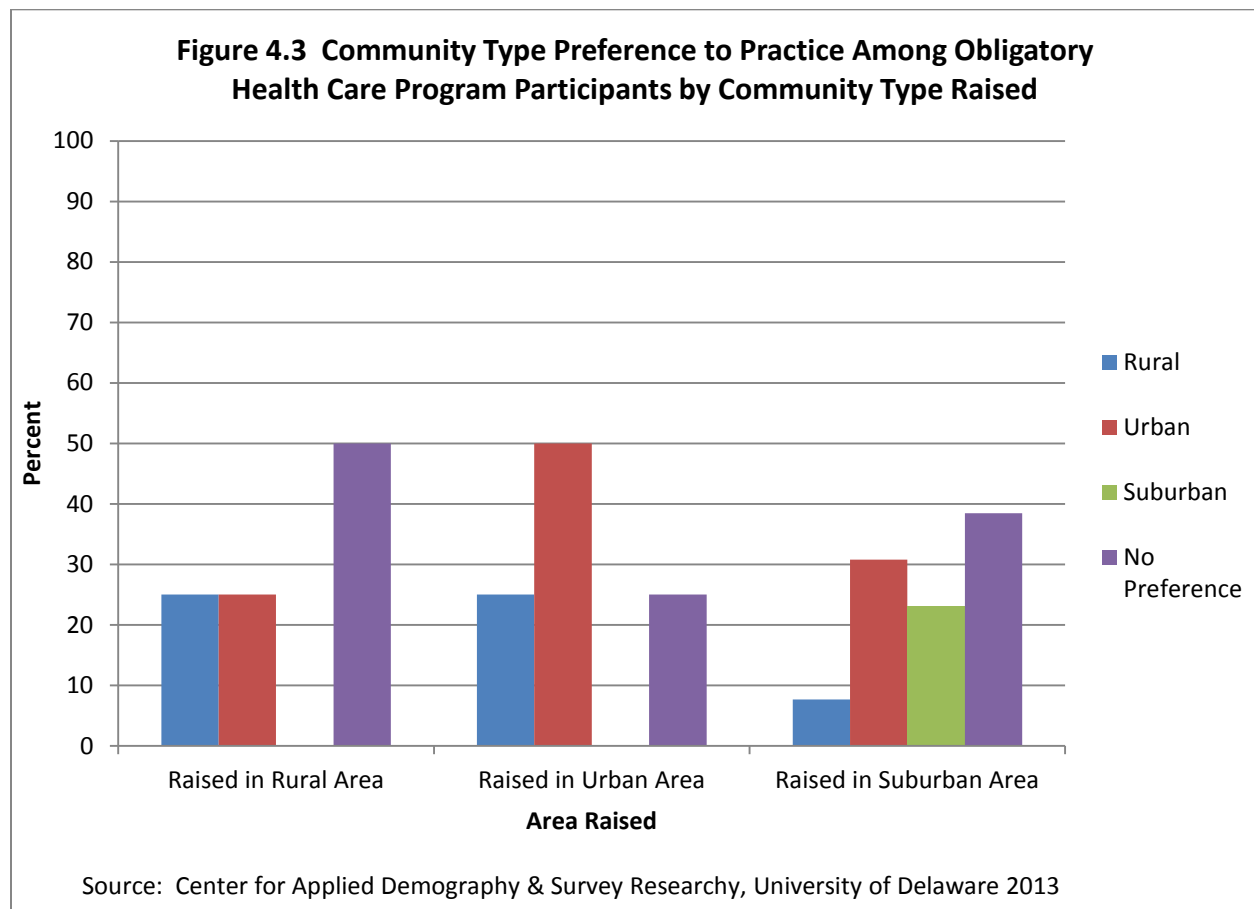
Persons electing to practice under an obligatory health care recruitment program are generally placed in medically underserved areas or health care professional shortage areas. To understand if training played a role in the decision to participate in a program which would specifically place them in a geographic location of particular need, respondents were questioned about their exposure to medically underserved and high risk population groups during training and whether this exposure had any influence on their decision to practice.

As shown in Figure 4.1, most health care professionals serving under an obligatory health care recruitment program had at least some exposure to working in medically underserved areas or with high risk population groups during their training. In fact, 60 percent of respondents indicated that they had a lot of exposure in an inner city health care setting and an additional 37 percent had at least some exposure. Similarly, 40 percent had a lot of exposure in community and/or migrant health centers, while another 43 percent reported at least some exposure. Although only about 17 percent of health care professionals serving under an obligatory health care recruitment program had a lot of exposure in a rural health care setting, 40 percent indicated that they at least had some exposure in that type of setting; and 43 percent of program participants indicated no exposure in a rural health care setting. In addition, 17 percent reported no exposure in community and/or migrant health centers, and 6 percent had no exposure in an inner city health care setting.

Forty percent of health care professionals serving under an obligatory health care recruitment program expressed no preference as to the type of community in which they preferred to practice. Of the remaining 60 percent, about 11 percent preferred working in a rural area, 26 percent preferred an urban setting and 23 percent preferred to practice in a suburban setting. (See Figure 4.2).



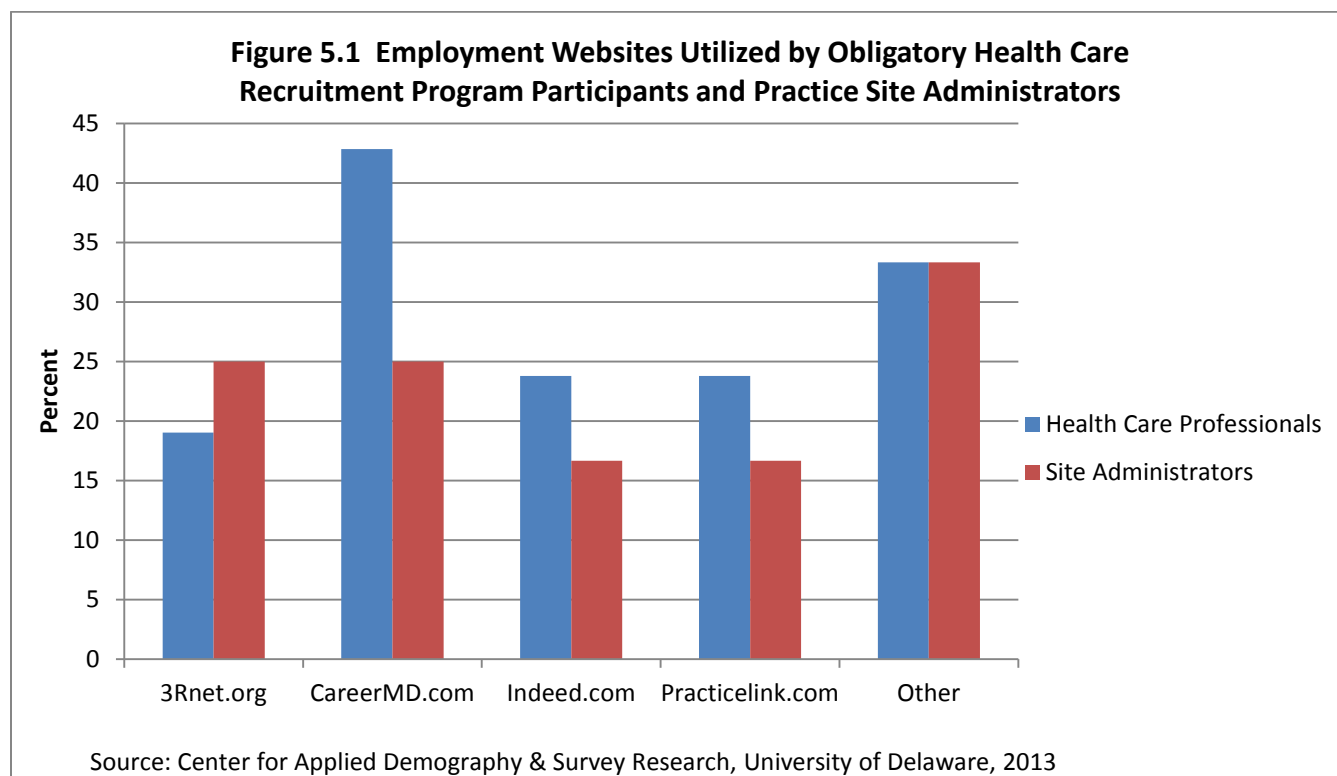
To better understand what motivates individuals to work in a given setting, the survey asked about the community in which respondents were raised to explore any influence it had on their preferences (Figure 4.3). About 50 percent of health care professionals serving under an obligatory health care recruitment program who were raised in an urban area preferred to practice in such a setting, compared to 31 percent of those raised in a suburban area and 25 percent raised in a rural area. Those raised in a suburban area (38 percent) or a rural environment (50 percent) were more likely to not have a preference than health care professionals raised in an urban area (25%). Among all health care professionals surveyed, only those raised in a suburban area indicated any preference for working in such an area (23 percent). Regardless of community type raised, little preference was given to working in rural areas. Only about 25 percent of persons raised in a rural or urban area expressed preference for working in a rural area. Among those raised in a suburban area, this figure is only 8 percent. Among those raised in a suburban area, this figure is only 8 percent.





## Employment and Licensure Issues

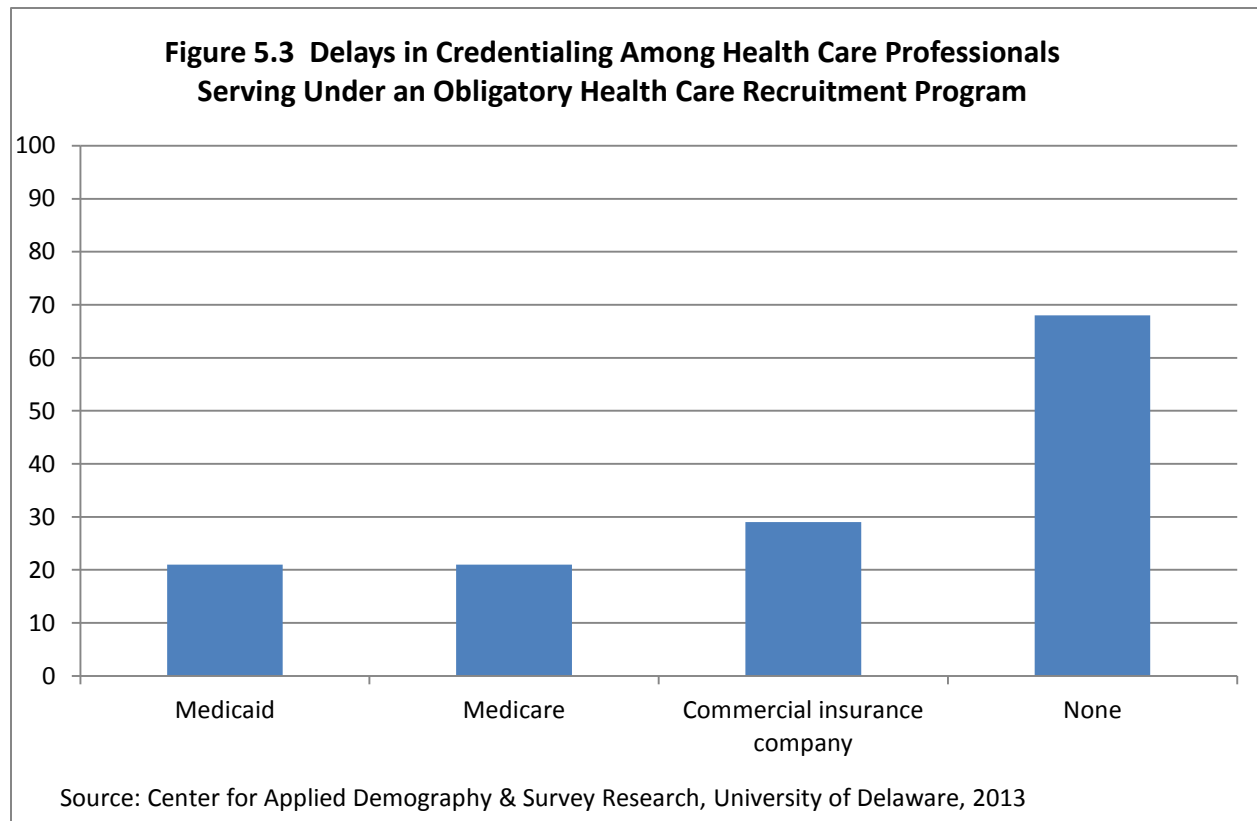
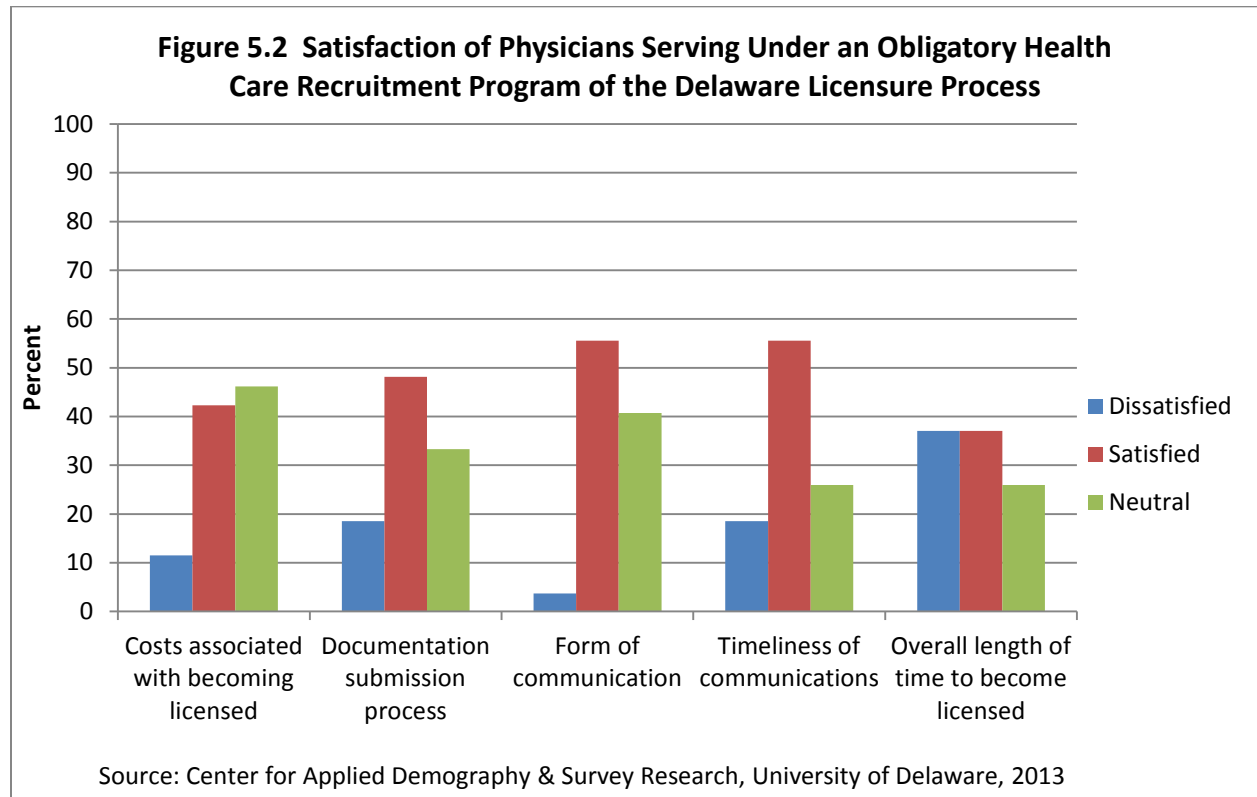
To gain insight into the resources used by health care professionals to seek employment and the recruitment efforts used by practice sites/facilities, respondents were queried about the type of employment websites on which they searched and/or posted. About 42 percent of health care professionals indicated that they predominantly use CareerMD for their job search. Only about 25 percent of site administrators responding to the survey reported using this same service in their recruitment efforts. The websites Indeed and Practicelink were also cited as employment search resources by roughly 24 percent of responding health care professionals serving under an obligatory health care recruitment program followed by 3Rnet (19 percent). 3Rnet was cited by about 25 percent of site administrators, followed by Indeed (16 percent) and Practicelink (16 percent). Other services indicated among health care professionals include Pedjobs, Pedialink, Careerbuilder, New England Journal of Medicine Career Center and HealthCareers. Site administrators reported using the Christiana Care Health System web site, CompHealth, American Academy of Pediatrics, Craigslist, the Delaware State Dental Society employment opportunities page and Delaware Technical and Community College jobs board.



When asked of both health care professionals and site administrators what strategies could be undertaken to improve recruitment and retention efforts, the primary response was increased financial incentives for obligatory health care recruitment program participants and an offer of salary incentives for retention purposes. Health care professionals cited salary as the most significant problem in recruiting and retaining health care professionals. Salary was also cited as the number one means of recruiting and retaining health care professionals specifically in rural areas.

Physicians and dentists were asked about Delaware's licensure process. In general, physicians reported that they were satisfied with the licensure process. Five factors were examined that were considered possible constraints in the licensure process (Figure 5.2). Physicians expressed the most dissatisfaction with the overall length of time to become licensed. Thirty-seven percent of physicians serving under an obligatory health care recruitment program indicated that they were dissatisfied; however, the majority reported either satisfaction or that they were neither satisfied nor dissatisfied. The greatest satisfaction was in the form of communication and timeliness of communication (55 percent of respondents were satisfied). Only about 4 percent were dissatisfied in the form of communication and roughly 19 percent were dissatisfied with the timeliness of such communications. About 48 percent were satisfied with the documentation submission process, while 19 percent expressed dissatisfaction. There was little dissatisfaction with the costs of being licensed. Only about 12 percent of these physicians considered the costs high, 42 percent were satisfied and 46 percent were neither satisfied nor dissatisfied.

Unique to Delaware are the clinicals, or hands-on testing, that dentists must complete prior to being licensed to practice in the state. Given the small sample size of dentists who completed the survey (N=3), no inferences can be made of overall satisfaction. Among the dentist respondents, all indicated satisfaction with the costs associated with completing the clinicals, documentation submission process, frequency in which clinicals are offered, form of communication, and procurement of patients for clinical exams. Two out of three indicated satisfaction with the timeliness of communications and overall length of the time to become licensed. The other respondent indicated neither satisfaction nor dissatisfaction with these measures.



Health care professionals serving under an obligatory health care recruitment program were asked about delays in credentialing. As shown in figure 5.3, the majority (68 percent) reported that they did not have any delays in credentialing. However, 21 percent reported delays in obtaining credentialing from Medicaid or Medicare. In addition, 29 percent indicated delays in credentialing from one or more commercial insurance companies.

## Practice Site Characteristics

To better understand the types of facilities by which health care professionals serving under an obligatory health care recruitment program are employed, practice sites were asked: the type of practice; which obligatory health care recruitment programs they used to employ health care providers in their practice; their perceived ability to meet current and future demand for services; and if additional health care professionals would be helpful in meeting demand for services or alleviate barriers to access to care. These data enable us to better understand what types of Delaware practices attract health care professionals, and differences among obligatory health care program types.

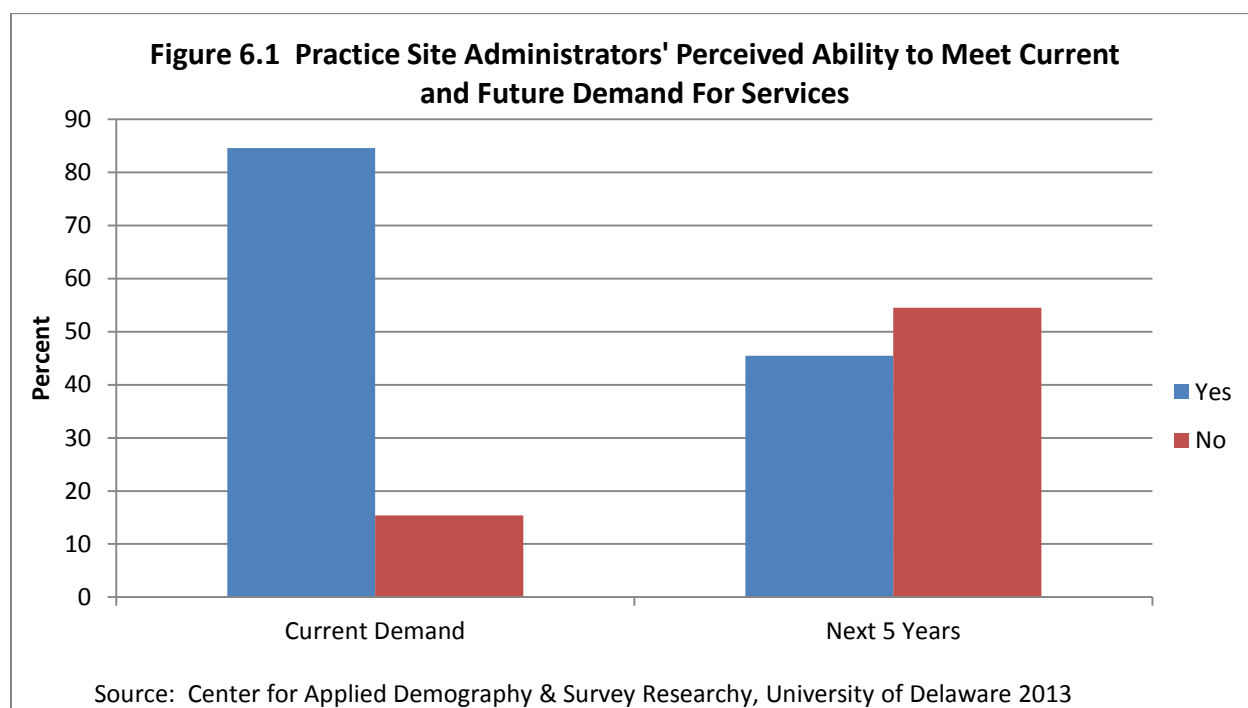
Among the site administrators who responded to the survey, the most frequently used obligatory health care recruitment program is the State Loan Repayment Program (Table 6.1). About 86 percent of those responding use the SLRP, compared to only about 36 percent for each of the National Health Care Recruitment Programs and the Conrad 30/J-1 program. The most common placement, regardless of program, are in primary care facilities (77 percent), followed by dental practices (31 percent), acute care facilities (23 percent) and other types of practices (23 percent). The practice type with the lowest placement rate as reported by survey respondents are community mental health centers (15 percent). These results are shown in Table 6.1.

**Table 6.1 Percent of Obligatory Health Care Recruitment Programs Utilized by Practice Type**

<b>Practice Type</b>	<b>NHSC Percent</b>	<b>SLRP percent</b>	<b>J-1 percent</b>	<b>Total percent</b>
Acute Care Facility	20.00	8.33	20.00	23.08
Community Health Center / FQHC	0.00	0.00	0.00	0.00
Community Mental Health Center	20.00	0.00	20.00	15.38
Dental Practice	0.00	33.33	0.00	30.77
Nursing Home / Extended Care Facility	0.00	0.00	0.00	0.00
Primary Care Facility	60.00	41.67	40.00	76.92
Psychiatric / Counseling Facility	0.00	0.00	0.00	0.00
State Correctional Facility	0.00	0.00	0.00	0.00
State Service Center / Clinic	0.00	0.00	0.00	0.00
Other	0.00	16.67	20.00	23.08

Center for Applied Demography & Survey Research, University of Delaware, 2013

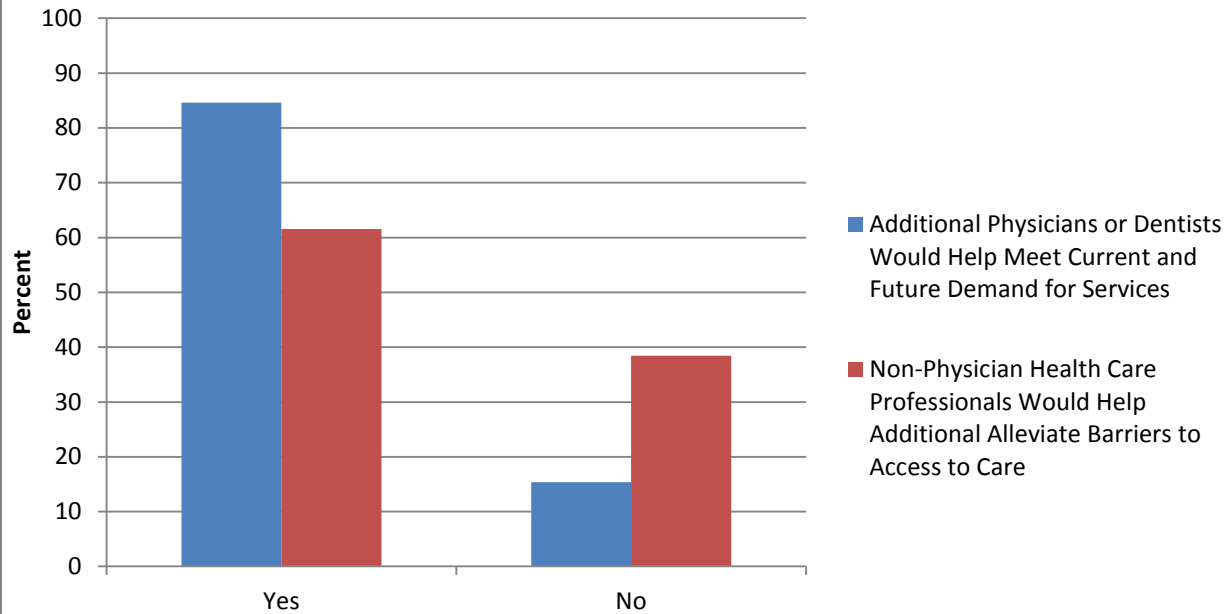
To best meet the health care needs of Delawareans, it is important that practice sites have the ability to meet demand for services. Figure 6.1 reflects the practice sites' perceived ability to meet current and future demand for services. Overall, the majority of site administrator respondents believe that they are currently able to meet demand for services given their current staffing (85 percent). However, about 45 percent are not confident that they will be able to meet demand for services within the next five years.



As shown in Figure 6.2 below, site administrators responding to the survey overwhelmingly believe that additional physicians or dentists would help to meet current and future demand for services (85 percent). Similarly, we find that about 62 percent believe additional non-physician health care professionals would help to alleviate barriers to access to care.

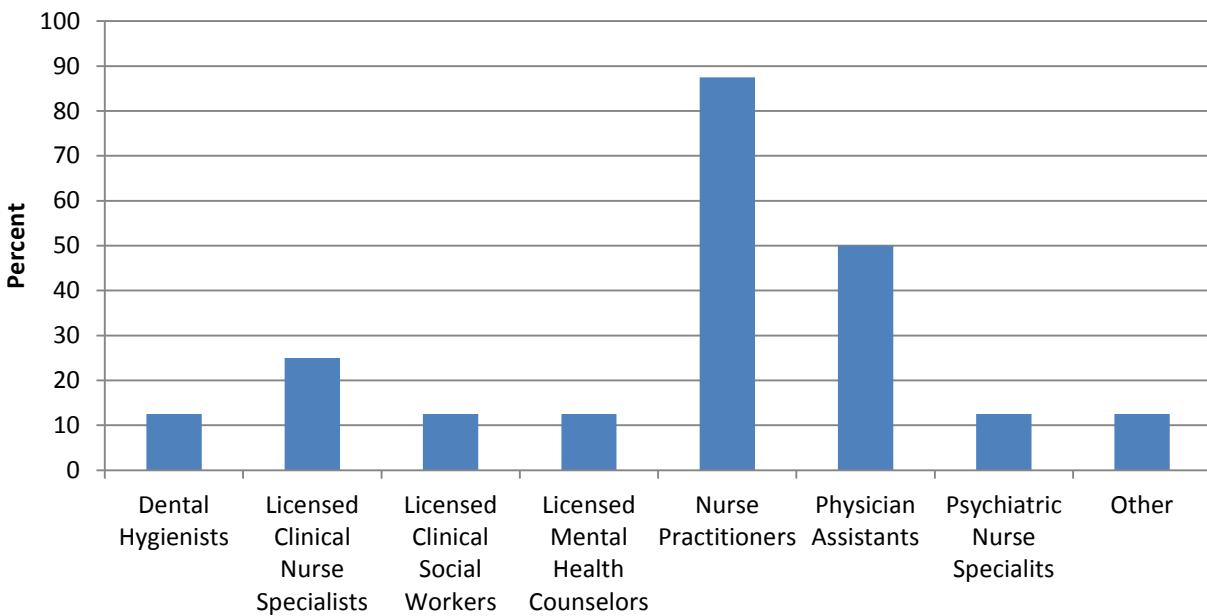
When asked which non-physician health care professionals are needed to supplement the provision of health care services, the majority of site administrators indicated that nurse practitioners are needed the most (87.5 percent), followed by physician assistants (50 percent) and licensed clinical nurse specialists (25 percent). Licensed clinical psychologists were not considered important in supplementing the provision of health care services for the practice sites represented in this sample, and are therefore not included in the graph. (See Figure 6.3).

**Figure 6.2 Perceptions Among Practice Site Administrators on Meeting Demand for Services and Alleviating Barriers to Access to Care**



Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

**Figure 6.3 Practice Site Administrators' Perceptions of What Non-Physician Health Care Professionals are Necessary to Supplement the Provision of Health Care Services**



Source: Center for Applied Demography & Survey Research, University of Delaware, 2013

## **Key Observations**

Delaware has a shortage of primary care physicians, dentists and other mid-level health care professionals to meet the health care needs of persons living in several rural communities and among various high-risk population groups. A variety of State and federal programs recruit and retain health care professionals to these areas. To better understand the role these programs play, surveys were administered to both health care professionals and health care facilities with current or past participation in one or more of these programs in Delaware. Among respondents:

- Health care professionals participating in an obligatory health care recruitment program are fairly young, primarily between the ages of 25 and 44.
- The NHSC and SLRP programs attract more women and the Conrad 30/J-1 program attracts more men.
- With the exception of the J-1 Program, minority groups are under-represented in the recruitment and retention of health care professionals through obligatory health care recruitment programs.
- Health care professionals serving in obligatory health recruitment programs contend with a considerable amount of educational debt; 60 percent owe \$75,000 or more and 30 percent owe in excess of \$150,000.
- Seventy-three percent of health care professionals serving under an obligation decided to practice in Delaware based primarily on a position opening rather than familial or community factors.
- Availability of financial assistance played a minimal role in deciding whether to practice in Delaware specifically.
- Health care professionals serving in an obligatory health care recruitment program are primarily placed in private practices (44 percent).
- Overall, health care professionals are highly satisfied with program participation and their primary practice site.



- Within five years, 24 percent of health care professionals serving under an obligatory health care recruitment program intent to relocate, with this increasing to a total of 62 percent within the next 10 years.
- Recreational access and quality of education and lifestyle/quality of life were noted as some of the most important factors in the decision to relocate.
- 100 percent of responding health care professionals, who indicate that they are intending to stay, cite a family-oriented setting as an important factor in their decision to stay.
- Personal/professional growth opportunities, long term relationship with patients and their community, and being a family oriented setting were some of the most important factors in the decision to stay.
- Overall, 74 percent would recommend the primary practice site in which they work and 89 percent would recommend the community.
- During their training, most program participants obtained experience in inner city health care (97 percent); 83 percent had exposure to community and/or migrant health centers; and 57 percent had worked in a rural health care setting
- Among health care professionals serving under an obligatory health care recruitment program, there is little preference to which type of community they are practicing. However, persons raised in an urban area prefer to practice in an urban setting (50 percent).
- CareerMD.com and 3Rnet.org are the most frequently used websites among health care professionals seeking employment. CareerMD.com is used most often by practice site administrators when posting position openings.
- The State Loan Repayment Program (SLRP) is the most commonly used obligatory health care recruitment program (86 percent).
- The majority of site administrators (85 percent) believe their facility has resources to meet the current demand for services. However, 45 percent believe this will not be the case within the next five years.

- Eighty-five percent of site administrators believe that additional physicians or dentists would help to meet current and future demand for services. Sixty-two percent believe additional non-physician health care professionals would help to alleviate access to care barriers.
- According to site administrators, adding nurse practitioners and physicians' assistants would be most effective in supplementing the provision of health care services.

## Conclusions

Previous studies suggest the effectiveness of obligatory health care recruitment programs designed to recruit health care professionals to designated health professional shortage areas, medically underserved areas, or to meet the needs of medically underserved population groups. These recruitment strategies appear to help alleviate health care shortages in areas with the greatest need. Yet, little research has been conducted to evaluate retention of the health care workforce recruited under such programs.

According to the U.S. Department of Health and Human Services, Health Resources and Services Administration, Delaware has 23 designated HPSAs, MUAs and MUPs. Moving forward, it is imperative to continually assess the effectiveness of obligatory health care recruitment programs in the recruitment and retention of health care professionals in these areas of the state. This assessment will better enable the state to coordinate resources contributing to health care service delivery and support health systems development to best meet the needs of the state's medically underserved populations.

This study provides a baseline for understanding recruitment and retention of health care professionals through obligatory health care recruitment programs such as the National Health Care Service Corps Scholarship Program, the National Health Care Service Corp Loan Repayment Program, the State Loan Repayment Program and the Conrad State 30/J-1 Visa Waiver Program. Several specialties are not represented by any obligatory health care recruitment program and should be considered for future recruitment and/or retention efforts based on need. Also, this survey focused on experiences of clinicians in designated shortage areas; future surveys should decipher the best practices in retaining these professionals in areas of need. It is recommended entrance and exit interviews be used for the ongoing evaluation of the obligatory health care recruitment programs offered in Delaware. These interviews will facilitate better understanding of the factors that draw health care professionals to Delaware and encourage them to remain. Exit interviews should be used upon completion of obligation regardless of relocation to further these efforts. Studies should be expanded to include health care professionals who are not serving under an obligatory health care recruitment program, permitting the comparison of any differences in the recruitment and retention of this population. Incorporating those recommendations will allow the Delaware Division of Public Health to guide its recruitment and retention efforts in a continued effective manner.

## APPENDIX A

### Definitions

Health Professional Shortage Area (HSPA): HPSAs are federally designated geographical areas or facilities identified as having a shortage of primary medical care, dental or mental health care providers.

Conrad State 30/ J-1 Visa Waiver Program: This program is designed to improve access to care in medically underserved areas in Delaware by placing international medical graduates, who completed their graduate medical education in the United States, in Delaware HSPAs or MUAs. Participants in this program are granted a waiver to the federal mandate that they must return to their home country for two years prior to returning to the United States. In exchange, physicians in this program must agree to practice medicine full time in Delaware at a site in a designated shortage area for a minimum of three years.

Medically Underserved Area (MUA): MUAs are federally designated geographical areas in which residents have a shortage of personal health care services.

Medically Underserved Population (MUP): MUPs are federally designated areas with population groups who experience economic, cultural or linguistic barriers to personal health care services.

NHSC Loan Repayment Program: This program is federally funded and provides student loan repayment assistance for working in an NHSC-approved practice site for two to four years, depending on their service contract. Participants must be U.S. citizens or U.S. nationals.

NHSC Scholarship Program: This is a federally funded program designed to cover the cost of educational expenses and provides a stipend to offset living expenses while students train to become primary care providers in an NHSC-eligible discipline. Upon graduation, students under this program must serve as primary care providers in an NHSC-approved practice site for two to four years, depending on their service contracts. Participants must be U.S. citizens or U.S. nationals.

State Loan Repayment Program (SLRP): The Delaware SLRP is designed to recruit health care professionals to areas of the state that have been identified as medically underserved by the Delaware Health Care Commission by providing assistance in paying off student loans. Award amounts are based on length of service of contract and are either two or three years. Participants must be U.S. citizens, legal permanent residents or be selected refugees approved by the U.S. Attorney General.

## **APPENDIX B**

### **2013 Health Care Provider Recruitment and Retention Survey**

The Delaware Division of Public Health, in collaboration with the University of Delaware, wants your input on a very important study focusing on the recruitment and retention of health care professionals in the state of Delaware. This survey should take no more than 10 minutes of your valuable time.

Thank you in advance for your assistance in helping us to better understand what draws medical professionals to Delaware to practice and how we can improve retention efforts with specific emphasis on health professional shortage areas and among medically underserved populations. We will use the information gathered to identify best practices and to assess ways in which the state can aid in the recruitment and retention of health care professionals to best meet the health care needs of Delawareans.

You have been selected to participate in this study as you have been identified as a health care professional who currently or previously participated in an obligatory health care recruitment program. Your participation is integral to our understanding of factors affecting recruitment and retention. However, you are free to decide whether you want to participate and you may change your mind after beginning the survey and stop. You may also skip any of the questions that you do not want to answer. If you choose not to participate there is no penalty.

All information gathered will be confidential and only accessible to members of the research team at the University of Delaware. Results will be aggregated and no information will be included that would reveal your identity.

If you have any questions about this study, please contact Katherine Collison at (302) 744-4555 or via email at [Katherine.Collison@state.de.us](mailto:Katherine.Collison@state.de.us).

If you have any questions or concerns about your rights as a research participant, you may contact the University of Delaware Institutional Review Board at (302) 831-2137.

Please check below that you have read and understood the above information and are willing to participate at this time.

- I understand the text above and agree to participate

Thank you again for agreeing to participate in this important study. The survey will only take a few minutes of your time.

If you need to go back and change an answer, please use the red “back” button at the bottom of your screen. You may end your session at any time. Upon logging back into the system, you will begin from where you left off.

Q1. Which of the following health care recruitment programs do you currently or have you ever participated in?

- Conrad State 30 / J-1 Visa Waiver Program
- National Health Service Corps Loan Repayment Program
- National Health Service Corps Scholarship Program
- Private Sponsorship
- State Loan Repayment Program
- Other \_\_\_\_\_

Q2. Are you a...

- Physician (MD or DO) [GOTO Q2a]
- Mid-Level Practitioner (PA, NP, APN, etc.) [GOTO Q2b]
- Dentist (DDS or DMD) [GOTO Q2c]
- Dental Hygienist
- Refused [TERMINATE]

Q2a. Please select your primary area of practice from the list below:

- Family Medicine
- Internal Medicine
- Obstetrics & Gynecology
- Osteopathic Practitioner
- Pediatrics
- Psychiatry
- Other \_\_\_\_\_
- Refused

Q2b. Please select your primary area of practice from the list below:

- Certified Nurse Practitioner
- Licensed Clinical Psychologist
- Licensed Clinical Social Worker
- Licensed Mental Health Counselor
- Physician’s Assistant
- Psychiatric Nurse Specialist
- Other \_\_\_\_\_

Q2c. Please select your primary area of practice from the list below:

- Pediatrics
- General Practice Dentistry
- Other \_\_\_\_\_

[ASKED OF PHYSICIANS]

Q3. How satisfied are you with Delaware licensure process? *Please indicate level of satisfaction on a scale from 1 to 5 where 1 is "very dissatisfied" and 5 is "very satisfied".*

- Costs associated with becoming licensed
- Documentation submission process
- Form of communication
- Timeliness of communications
- Overall Length of time to become licensed

[ASKED ANY Q3=1 or Q3=2]

Q3b. How can Delaware improve the licensure process?

- 
- DK
  - Refused

[ASKED OF DENTISTS]

Q4. How satisfied are you with the Delaware clinicals? *Please indicate level of satisfaction on a scale from 1 to 5 where 1 is "very dissatisfied" and 5 is "very satisfied".*

- Costs associated with completing clinicals
- Documentation submission process
- Frequency clinical are offered
- Form of communication
- Overall Length of time to become licensed
- Procurement of patients for clinical exam
- Timeliness of communications

[ASKED ANY Q4=1 or Q4=2]

Q4b. How can Delaware improve the clinicals/licensure process?

- 
- DK
  - Refused

[ASKED OF PHYSICIANS AND DENTISTS]

Q5. Did you experience a delay in credentialing with any of the following insurance categories? (please select all that apply)

- Commercial Insurance Company
- Medicaid
- Medicare
- None

Q6. Please specify the city or town of your primary practice site/facility.

City/Town: \_\_\_\_\_

Q7. When did you begin employment at this practice location?

Month: \_\_\_\_\_ Year: \_\_\_\_\_

Q8. Approximately how far do you commute to work at this location?

Miles: \_\_\_\_\_

Q9. Which best describes the primary practice site where you are currently employed?

- Community Health Center
- Community Mental Health Center
- Dental Office
- Hospital – Acute Care Facility
- Hospital – Primary Care Facility
- Hospital – Psychiatric Facility
- Hospital Owned Practice
- Nursing Home or Other Extended Care Facility
- Private Practice
- Psychiatric/Counseling Facility
- State Correctional Facility
- Other \_\_\_\_\_

Q10. Were you at this practice location prior to the start of your obligation under a health care recruitment program in Delaware?

- Yes [GOTO Q12]
- No

Q11. Did funding under a health care recruitment program bring you to this specific location?

- Yes
- No

Q12. Has funding enabled you or influenced your decision to stay at this location?

- Yes
- No

[ASKED ONLY IF Q1=1]

Q13. Did participation in the Conrad State 30 / J-1 Fee Waiver Program influence your decision to COME to Delaware?

- Yes
- No

[ASKED ONLY IF Q1=1]

Q14. Did participation in the Conrad State 30 / J-1 Fee Waiver Program influence your decision to STAY in Delaware?

- Yes
- No



Q15. What was your approximate total educational debt when you completed your training?

- Less than \$25,000
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$124,999
- \$125,000 to \$149,999
- \$150,000 to \$174,999
- \$175,000 to \$199,999
- \$200,000 or greater

Q16. How important were the following to you in your decision to practice in Delaware? *Please indicate level of importance on a scale from 1 to 5 where 1 is "not important" and 5 is "very important"*.

- Availability of financial assistance to pay off educational debt
- Availability of other financial assistance (specify) \_\_\_\_\_
- Awareness of a position opening
- Community/lifestyle (e.g., beach, fishing, cultural, proximity to major cultural centers, etc.)
- Joining another family member's practice
- Conrad State 30 / J-1 Visa Waiver Program
- National Health Service Corps Loan Repayment Program
- National Health Service Corps Scholarship Program
- Opportunity to work in an underserved community
- Potential of a new practice opportunity
- Recommendation by another provider
- Residency program proximity
- Spouse/family preference
- Spouse's family lives here
- Your family lives here
- Your rural background
- Other (specify) \_\_\_\_\_

Q17. How strongly do you agree or disagree with the following statements about the health care recruitment program practice site that you are currently working or have previously worked? *Please indicate level of agreement on a scale from 1 to 5 where 1 is "strongly disagree" and 5 is "strongly agree"*.

- I have good clinical support from more senior and/or supervising clinicians in the practice
- I am able to provide the full range of services for which I was trained and wished to perform
- The practice has an effective administrator
- My work schedule rarely interferes with my personal time
- I feel a strong personal connection to my patients
- I feel I was doing important work in this practice
- I feel a sense of belonging in the community where I work(ed)
- I feel appreciated in the health care recruitment program I participate(d) in
- Overall, I am satisfied with the practice

Q18. How satisfied were you with the following aspects of the health care recruitment program practice site that you are currently working or have previously worked? *Please indicate level of satisfaction on a scale from 1 to 5 where 1 is "very dissatisfied" and 5 is "very satisfied"*.

- Your relationship with the practice administrator
- Financial stability of the practice site/organization you primarily work

- Physical condition of the healthcare facility
- Your income from the healthcare practice
- Availability of cross coverage to allow you to go on vacation
- The mission and goals of the practice
- Your access to specialist consultations for your patients
- Support by other clinicians working at the site

Q19. Would you recommend this practice site or community to other practitioners?

- Practice Site                     Yes    No  
Community                     Yes    No

Q20. Do you plan to stay in the area where you are currently working? *Please indicate how likely you are to stay in the area where you are currently working on a scale of 1 to 4 where 1 is “very unlikely” and 4 is “very likely”.*

- 1 to less than 3 years
- 3 to less than 5 years
- 5 to less than 10 years
- 10 years or more

[ASKED IF ANY Q20=“likely” or “very likely”]

Q20a. You indicated that you plan to stay in the area where you are currently working. How important were these personal issues to you in your decision to stay? *Please indicate level of importance on a scale from 1 to 7 where 1 is “not at all important” and 7 is “very important”.*

- Affordable housing
- Cost of living
- Employment opportunities for spouse
- Family oriented setting
- Intergenerational care
- Lack of traffic, congestion
- Lifestyle/Quality of life
- Lower crime rates
- Major airport accessibility
- Quality of education for children
- Recreational access
- Religious activities
- Sense of community
- Shopping
- Social opportunity for family
- Socio-cultural integration

[ASKED IF ANY Q20=“unlikely” or “very unlikely”]

Q20b. You indicated that you did not/do not plan to stay in the area where you are currently working. How important are these personal issues to you in your decision to relocate? *Please indicate level of importance on a scale from 1 to 7 where 1 is “not at all important” and 7 is “very important”.*

- Affordable housing
- Cost of living
- Employment opportunities for spouse

- Family oriented setting
- Intergenerational care
- Lack of traffic, congestion
- Lifestyle/Quality of life
- Lower crime rates
- Major airport accessibility
- Quality of education for children
- Recreational access
- Religious activities
- Sense of community
- Shopping
- Social opportunity for family
- Socio-cultural integration

[ASKED IF ANY Q20="likely" or "very likely"]

Q20c. How important were these professional issues in your decision to stay? *Please indicate level of importance on a scale from 1 to 7 where 1 is "not at all important" and 7 is "very important".*

- Availability of consultation via telehealth/telemedicine
- Availability of support staff (nurses, hygienists, etc.)
- Competitive salaries
- Contractual terms/issues
- Cost of maintaining practice
- Cost of malpractice insurance
- Coverage when another practitioner takes leave, vacation, or is otherwise absent
- Demand for services
- Long term relationship with patients
- Managed Care
- On-call requirements
- Opportunities for leadership
- Personal/professional growth opportunities
- Productivity incentives
- Professional/educational linkages
- Professional support
- Recognition of efforts
- Reimbursement rates
- Updated equipment for clinical care
- Use of technology in practice setting

[ASKED IF ANY Q20="unlikely" or "very unlikely"]

Q20d. How important were these professional issues in your decision to relocate? *Please indicate level of importance on a scale from 1 to 7 where 1 is "not at all important" and 7 is "very important".*

- Availability of consultation via telehealth/telemedicine
- Availability of support staff (nurses, hygienists, etc.)
- Competitive salaries
- Contractual terms/issues
- Cost of maintaining practice
- Cost of malpractice insurance
- Coverage when another practitioner takes leave, vacation, or is otherwise absent
- Demand for services

- Long term relationship with patients
- Managed Care
- On-call requirements
- Opportunities for leadership
- Personal/professional growth opportunities
- Productivity incentives
- Professional/educational linkages
- Professional support
- Recognition of efforts
- Reimbursement rates
- Updated equipment for clinical care
- Use of technology in practice setting

Q21. If you know of any health care professionals placed through recruitment programs who relocated, what were their reasons for leaving?

---

Q22. Please indicate which of the following websites you have used or are currently using to seek out health professional jobs? (please select all that apply)

- 3Rnet.org
- CareerMD.com
- Indeed.com
- Practicelink.com
- Other \_\_\_\_\_
- Other \_\_\_\_\_

[SKIP TO Q25 FOR J1s]

Q23. What was your residence at the time of your high school graduation:

City/town: \_\_\_\_\_  
State/country: \_\_\_\_\_

Q24. At the time of graduation, was this location rural, urban or suburban?

- Rural
- Urban
- Suburban

Q25. Where did you graduate college for your undergraduate degree?

City/town: \_\_\_\_\_  
State/country: \_\_\_\_\_

Q26. What school did you graduate from that prepared you to become a health care professional?

School Name: \_\_\_\_\_  
City/town: \_\_\_\_\_  
State/country: \_\_\_\_\_

[ASKED OF PHYSICIANS AND DENTISTS ONLY]

Q27. Where did you complete your residency?

Facility Name: \_\_\_\_\_

City/town: \_\_\_\_\_

State/country: \_\_\_\_\_

Q28. Do you have an advanced or specialty certification?

Yes

No [GO TO Q30]

Q29. What is your advanced or specialty certification in?

---

Q30. During your training, how much exposure did you have to:

*Please answer on a scale of 1 to 3, where 1 is "No Exposure" and 3 is "A lot of Exposure".*

Community and/or migrant health centers?

Rural health care?

Inner city health care?

[IF Q30="No Exposure" TO ALL RESPONSE CATEGORIES GO TO Q32]

Q31. Did that rotation influence your decision where to practice?

Yes

No

[ASKED IF Q31="No Exposure" TO ALL RESPONSE CATEGORIES]

Q32. You indicated that you had no exposure to community and/or migrant health centers, rural health care or inner city health care. Was this because this training opportunity was not available or you chose not to participate in such a training program?

Not Available

Chose Not To

Q33. Do you prefer to practice in a rural or urban area?

Rural

Urban

Suburban

No preference

Q34. In your opinion, what would encourage health care professionals to work in rural areas?

---

---

Q35. How old are you?

- 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 or older

Q36. Are you a men or women?

- Men
- Women

Q37. Are you Hispanic or Latino?

- Yes
- No

Q38. Which one or more of the following would you say is your race? Please select all that apply.

- Caucasian or Caucasian
- Black or African American
- Asian
- Native Hawaiian or Pacific Islander
- American Indian or Alaska Native
- Other: \_\_\_\_\_

[ASKED IF Q38 > 1 CHECKED]

Q38b. Which one of these racial groups would you say best represents your race or that you most identify with?

- Caucasian or Caucasian
- Black or African American
- Asian
- Native Hawaiian or Pacific Islander
- American Indian or Alaska Native
- Other: \_\_\_\_\_

Q39. In your opinion, what strategies could the State of Delaware undertake to improve RECRUITMENT of professionals with your training in your community?

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Q40. In your opinion, what strategies could the State of Delaware undertake to improve RETENTION of professionals with your training in your community?

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Q41. Please provide any additional comments or suggestions in the space below.

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That is all the questions I have for you. Thank you for participating in this important study.. All responses will be aggregated to better understand those factors important in the recruitment and retention of health care professionals in the State of Delaware, especially in health professional shortage areas. If you have any questions about this study, please contact Katherine Collison at (302) 744-4555 or via email at [Katherine.Collison@state.de.us](mailto:Katherine.Collison@state.de.us).

## APPENDIX C

### 2013 Site Survey on Health Care Provider Recruitment and Retention

The Delaware Division of Public Health, in collaboration with the University of Delaware, wants your input on a very important study focusing on the recruitment and retention of health care professionals in the State of Delaware. This survey should take no more than 10 minutes of your valuable time.

Thank you in advance for your assistance in helping us to better understand what draws medical professionals to Delaware to practice and how we can improve retention efforts with specific emphasis on health professional shortage areas and among medically underserved populations. We will use the information gathered to identify best practices and to assess ways in which the state can aid in the recruitment and retention of health care professionals to best meet the health care needs of Delawareans.

Your practice site / facility has been identified as one that currently employs or has previously employed health care professionals recruited or retained through one or more obligatory health care recruitment programs designed to increase access to care in health professional shortage areas. Your participation is integral to our understanding of factors affecting recruitment and retention. However, you are free to decide whether you want to participate and you may change your mind after beginning the survey and stop. You may also skip any of the questions that you do not want to answer. If you choose not to participate there is no penalty.

All information gathered will be confidential and only accessible to members of the research team at the University of Delaware. Results will be aggregated and no information will be included that would reveal your identity or the identity of the practice site / facility you are responding on behalf of.

If you have any questions about this study, please contact Katherine Collison at (302) 744-4555 or via email at [Katherine.Collison@state.de.us](mailto:Katherine.Collison@state.de.us).

If you have any questions or concerns about your rights as a research participant, you may contact the University of Delaware Institutional Review Board at (302) 831-2137.

Please check below that you have read and understood the above information and are willing to participate at this time.

- I understand the text above and agree to participate



Thank you again for agreeing to participate in this important study. The survey will only take a few minutes of your time.

If you need to go back and change an answer, please use the red “back” button at the bottom of your screen. You may end your session at any time. Upon logging back into the system, you will begin from where you left off.

Q1. Which of the following recruitment/retention programs has your practice/facility used to recruit or retain health care professionals? Check all that apply.

- Conrad State 30 / J-1 Visa Waiver Program
- National Health Service Corps Loan Repayment Program
- National Health Service Corps Scholarship Program
- Private Sponsorship
- State Loan Repayment Program
- Other \_\_\_\_\_
- None [GO TO Q20]
- Don't know [TERMINATE]
- Refused [TERMINATE]

Q2. What is the practice/facility status? (please check all that apply)

- Hospital owned
- For profit
- Not for profit/Non-profit
- Government
- Other \_\_\_\_\_

Q3. For tabulation purposes, please provide the city/town and zip code your practice site/facility.

City/town: \_\_\_\_\_  
Zip Code: \_\_\_\_\_

Q4. Which of the following best describes the practice/facility type:

- Acute Care Facility
- Community Health Center/FQHC
- Community Mental Health Center
- Dental Practice
- Nursing Home or Other Extended Care Facility
- Primary Care Facility
- Private Psychiatric/Counseling Facility
- Psychiatric Facility
- State Correctional Facility
- State Service Center/Clinic
- Other \_\_\_\_\_

Q5. Is your practice/facility able to meet current demand for services?

- Yes
- No [GO TO Q7]

Q6. Will your practice/facility be able to meet demand for services in the next five years?

- Very unlikely
- Unlikely
- Likely
- Very likely

Q7. If more non-physician health care professionals (e.g., Pas, NPs, APNs, dental hygienists, etc.) were available in your practice/facility, would that help alleviate barriers to access to care?

- Yes
- No [GO TO Q9]

Q8. What non-physician health care professionals do you think would be able to supplement the provision of health care services in your practice/facility?

- Dental Hygienists
- Licensed Clinical Nurse Specialists
- Licensed Clinical Psychologists
- Licensed Clinical Social Workers
- Licensed Mental Health Counselors
- Nurse Practitioners
- Physician Assistants
- Psychiatric Nurse Specialists
- Other (specify: \_\_\_\_\_)

Q9. Would additional physicians or dentists be helpful to meet current or future demand for services?

- Yes
- No

Q10. Should the recruitment/retention programs be expanded to include other disciplines?

- Yes
- No

[ASKED IF Q10=Yes]

Q10b. What other disciplines should be included?

---

Q11. How strongly do you agree or disagree that the following are barriers to physicians and other health professionals in choosing to practice at your practice site/facility? *Please indicate level of importance on a scale from 1 to 7 where 1 is "Strongly disagree" and 7 is "Strongly agree".*

- Cost of maintaining practice
- Cost of living
- Employment opportunities for spouses
- High workloads

- On-call requirements
- Hospital/Medical staff obligations
- Insurance credentialing
- Professional licensure process
- Lack of continuing education opportunities
- Lack of coverage when a provider takes leave, is on vacation or otherwise absent
- Lack of opportunities for leadership
- Lack of trained support staff
- Lack of specialties
- Limited scope of practice
- Long hours
- Lower reimbursement rates
- Lower salary levels
- Major airport accessibility
- Malpractice insurance costs
- Malpractice litigation environment
- Managed care
- Number of practice sites/facilities within the community
- Professional isolation
- Professional licensing
- Other \_\_\_\_\_

Q12. How beneficial have these recruitment/retention programs been to your practice/facility in meeting healthcare needs in your community? *Please indicate how beneficial on a scale from 1 to 5 where 1 is “not beneficial” and 5 is “very beneficial”. If your practice/facility has not utilized a given program, please select NA.*

- Conrad State 30 / J-1 Visa Waiver Program
- National Health Service Corps Loan Repayment Program
- National Health Service Corps Scholarship Program
- Private Sponsorship
- State Loan Repayment Program

Q13. In your opinion, how important are these personal issues in the recruitment and/or retention of providers in in your community? *Please indicate level of importance on a scale from 1 to 5 where 1 is “not at all important” and 5 is “very important”.*

- Affordable housing
- Cost of living
- Employment opportunities for spouses
- Family oriented setting
- Intergenerational care
- Lack of traffic, congestion
- Lifestyle/Quality of life
- Crime rates
- Airport accessibility
- Quality of education for children
- Recreational access
- Religious activities
- Shopping
- Social opportunity for family
- Socio-cultural integration

Q14. In your opinion, how important are these professional issues in the recruitment and/or retention of providers at your practice site/facility? *Please indicate level of importance on a scale from 1 to 5 where 1 is “not important” and 5 is “very important”.*

- Availability of Telehealth/Telemedicine
- Availability of support staff (nurses, hygienists, etc.)
- Cost of maintaining practice
- Cost of malpractice insurance
- Competitive salaries
- Contractual terms/issues
- Coverage when another practitioner takes leave, vacation, or is otherwise absent
- Demand for services
- Long term relationship with patients
- Managed Care
- On-call requirements
- Opportunities for leadership
- Personal/professional growth opportunities
- Productivity incentives
- Professional/educational linkages
- Professional support
- Recognition of efforts
- Reimbursement rates
- Updated equipment for clinical care
- Use of technology in practice setting

Q15. Do you have an official recruitment plan and/or retention plan?

- Recruitment Plan:         Yes    No  
Retention Plan:          Yes    No

Q19. If you have lost health care professionals placed through recruitment programs, what were their reasons for leaving?

- 
- NA
  - DK
  - Refused

Q20. Of the strategies that you have used in the recruitment and retention of health care professionals, which have been most effective and which have been least effective? If you have utilized other strategies, please note them in the spaces provided and indicate the effectiveness of each. If you have considered other strategies, but have not yet tried, please note those as well.

[Note: options for each will be check boxes for “Effective for Recruitment”, “Effective for Retention”, “Not effective for Recruitment”, “Not effective for Retention”, “Not Used/Tried”]

- Competitive salary
- Outreach to new graduates
- Job fairs
- Internship or mentor programs

- Advertising
- Hiring bonus
- Salary increase
- Flexible schedule
- Continuing education opportunities
- Conrad State 30 / J-1 Visa Waiver Program
- National Health Service Corps Loan Repayment Program
- National Health Service Corps Scholarship Program
- Private Sponsorship
- State Loan Repayment Program
- Scholarships/tuition reimbursement
- Other \_\_\_\_\_
- Other \_\_\_\_\_
- Other \_\_\_\_\_
- Other \_\_\_\_\_

Q21. Are there any strategies for recruitment or retention that you would like to use but have not been able to for some reason?

- Yes
- No [GO TO Q23]

Q22. What are the strategies for recruitment or retention that you would like to use but have not been able to for some reason? *Select all that apply.*

- Competitive salary
- Outreach to new graduates
- Job fairs
- Internship or mentor programs
- Advertising
- Hiring bonus
- Salary increase
- Flexible schedule
- Continuing education opportunities
- Conrad State 30 / J-1 Visa Waiver Program
- National Health Service Corps Loan Repayment Program
- National Health Service Corps Scholarship Program
- Private Sponsorship
- State Loan Repayment Program
- Scholarships or tuition reimbursement for students
- Other \_\_\_\_\_

Q22b. Why were you not able to use this/these strategies?

---

Q23. Overall, has your practice/facility been successful or unsuccessful in recruiting and retaining health care professionals?

- |            |                                     |                                       |
|------------|-------------------------------------|---------------------------------------|
| Recruiting | <input type="checkbox"/> Successful | <input type="checkbox"/> Unsuccessful |
| Retaining  | <input type="checkbox"/> Successful | <input type="checkbox"/> Unsuccessful |

Q24. How beneficial have these recruitment / retention programs been to your practice / facility in meeting health care needs in your community? *Please indicate how beneficial on a scale from 1 to 4 where 1 is “not at all beneficial” and 4 is “very beneficial”.*

- Conrad State 30 / J-1 Visa Waiver Program
- National Health Service Corps Loan Repayment Program
- National Health Service Corps Scholarship Program
- Private Sponsorship
- State Loan Repayment Program

Q25. Please indicate which of the following websites your practice / facility has used to post vacancies in efforts to recruit health care professionals:

- |                  |                                    |                                   |  |
|------------------|------------------------------------|-----------------------------------|--|
| 3Rnet.org        | <input type="checkbox"/> Have used | <input type="checkbox"/> Not used | <input type="checkbox"/> Not familiar with |
| CareerMD.com     | <input type="checkbox"/> Have used | <input type="checkbox"/> Not used | <input type="checkbox"/> Not familiar with |
| Indeed.com       | <input type="checkbox"/> Have used | <input type="checkbox"/> Not used | <input type="checkbox"/> Not familiar with |
| Practicelink.com | <input type="checkbox"/> Have used | <input type="checkbox"/> Not used | <input type="checkbox"/> Not familiar with |
| Other _____      |                                    |                                   |  |
| Other _____      |                                    |                                   |  |
| Other _____      |                                    |                                   |  |

Q25b. How successful has each of the websites you’ve used been for attracting applicants?

- |                  |                                     |   |
|------------------|-------------------------------------|---|
| 3Rnet.org        | <input type="checkbox"/> Successful | <input type="checkbox"/> Not Successful |
| CareerMD.com     | <input type="checkbox"/> Successful | <input type="checkbox"/> Not Successful |
| Indeed.com       | <input type="checkbox"/> Successful | <input type="checkbox"/> Not Successful |
| Practicelink.com | <input type="checkbox"/> Successful | <input type="checkbox"/> Not Successful |
| Other _____      | <input type="checkbox"/> Successful | <input type="checkbox"/> Not Successful |
| Other _____      | <input type="checkbox"/> Successful | <input type="checkbox"/> Not Successful |
| Other _____      | <input type="checkbox"/> Successful | <input type="checkbox"/> Not Successful |

Q26. Have you lost health care professionals who were hired in your practice site / facility through recruitment programs such as the Conrad State 30 / J-1 Visa program, NHSC Programs or State Scholarship Program?

- Yes
- No [GOTO Q28]

Q27. What were their reasons for leaving?

---



---

Q28. How many health care professionals do you estimate your practice / facility has recruited through the following programs in the past 5 years?

- |  |   |  |
|--|---|--|
| Conrad State 30 / J-1 Visa Waiver Program            | <input type="checkbox"/> Number Recruited | <input type="checkbox"/> Number Retained |
| National Health Service Corps Loan Repayment Program | <input type="checkbox"/> Number Recruited | <input type="checkbox"/> Number Retained |
| National Health Service Corps Scholarship Program    | <input type="checkbox"/> Number Recruited | <input type="checkbox"/> Number Retained |
| Private Sponsorship                                  | <input type="checkbox"/> Number Recruited | <input type="checkbox"/> Number Retained |
| State Loan Repayment Program                         | <input type="checkbox"/> Number Recruited | <input type="checkbox"/> Number Retained |

Q29. Does your practice/facility provide training experiences for students enrolled in a health professional education program?

Yes

No

Q30. What would you say has been the most significant problem in RECRUITING health care professionals in your community?

---

Q31. What would you say has been the most significant problem in RETAINING health care professionals in your community?

---

Q32. What changes, if any, would you recommend to the existing recruitment/retention programs offered in Delaware?

---

Q33. Please provide any additional comments or suggestions in the space below.

---

Q34. If you are interested in being included in future recruitment and retention conferences or other activities, please provide us with the following?

First Name: \_\_\_\_\_

Last Name: \_\_\_\_\_

Title (CEO, CNO, HR, etc.): \_\_\_\_\_

Email: \_\_\_\_\_

That is all the questions I have for you. Thank you for participating in this important study. All responses will be aggregated to better understand those factors important in the recruitment and retention of health care professionals in the State of Delaware, especially in health professional shortage areas. If you have any questions about this study, please contact Katherine Collison at (302) 744-4555 or via email at [Katherine.Collison@state.de.us](mailto:Katherine.Collison@state.de.us).

## REFERENCES

- Crouse, B.J. & Munson, R. L. (2006). The Effect of the Physician J-1 Visa Waiver on Rural Wisconsin. *Wisconsin Medical Journal*, 105(7), 16-20.
- Cutchin, M. P. (1997). Community and Self: Concepts for Rural Physician Integration and Retention. *Social Science Medicine*, 44(11), 1661-1674.
- Cutchin, M. P., Norton, J. C., Quan, M. M., Bolt, D., & Lindman, B. (1994). To Stay or not to Stay: Issues in Rural Primary Care Physician Retention in Eastern Kentucky. *Journal of Rural Health*, 10(4), 273-278.
- Hagopian, A., Thompson M. T., Kaltenbach, E., & Hart, L. G. (2003). Health Departments' Use of International Medical Graduates in Physician Shortage Areas. *Health Affairs*, 22(5), 241-249.
- National Health Service Corps (2012). *NHSC State-by-State Guide to Primary Care Opportunities: Delaware*. Retrieved from <http://nhsc.hrsa.gov/ambassadors/states/DE.html>.
- Pathman, D.E., Konrad, T.R., & Ricketts, T.C. III (1992). The Comparative Retention of National Health Service Corps and Other Rural Physicians. Results of a Nine-year follow-up study. *JAMA*, 368(12), 1552-8.
- Pathman, D.E., Taylor, D.H. Jr., King, T.S., Harris, T., Henderson, T.M., Bernstein, J.D., Tucker, T., Crook, K.D., Spaulding, C., & Koch, G.G. (2000). State Scholarship, Loan Forgiveness, and Related Programs: The Unheralded Safety Net. *JAMA*, 284(16), 2084-2092.
- Rosenblatt, R.A., Andrilla, C.H., Curtin, T., & Hart, L.G. (2006). Shortages of Medical Personnel at Community Health Centers, Implications for Planned Expansion. *JAMA*, 295(9), 1042-1049.
- Sibbald, B. (1998). *Solving Inequalities in Health Provider Distribution: Education Scholarships and Loan Repayment in Return for Service in Underserved Areas* (Executive Summary 10). Retrieved from National Primary Care Research and Development Centre, University of Manchester website: <http://www.medicine.manchester.ac.uk/primarycare/npcrdc-archive/Publications/exsum10.pdf>
- Singer, J. D., Davidson, S. M., Graham, S., & Davidson, H.S. (1998). Physician Retention in Community and Migrant Health Centers: Who Stays and for How Long? *Medical Care*, 36(8), 1198-1213.



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## **Center for Applied Demography & Survey Research**

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Center for Applied Demography & Survey Research (CADSR) is a project-oriented, policy analysis and survey research center. The Center's primary mission is to ensure that the best possible data and information on important public issues are developed and made available to members of the College, its clients, and, most importantly, to the policy-makers who affect the way we all live and work in Delaware. This mission is accomplished in four different ways: by acting as a clearinghouse for large data sets supplied by local, state, regional, and federal agencies; by maintaining an active survey research capability; by developing and designing custom databases of text, graphical information (including both raster and vector data), drawn from client files; and by using an array of information system technologies.



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