

## Support for Rural Recruitment and Practice among U.S. Nurse Practitioner Education Programs

### Key Findings

- Preparing nurse practitioners (NPs) for practice in rural areas was very important to the mission or goals of nearly two thirds (62%) of U.S. colleges with NP programs surveyed in 2013.
- Nearly three quarters of these “rural-oriented” NP education programs:
  - actively recruit NP students from rural areas (72%) and
  - actively recruit NP students who intend to practice in rural areas (72%).
- Distance learning methods of instruction (solely or in combination with classroom instruction) were used by two thirds (66%) of responding U.S. NP education programs.
- For rural-oriented NP programs, major barriers to rural student recruitment and training included:
  - students’ relocating or commuting to campus-based programs,
  - the limited number of clinical training opportunities in rural areas, and
  - the affordability of NP education for rural students.
- Outreach strategies that increase awareness of NP education programs and promote the programs’ accessibility for rural students were the most effective strategies for recruiting rural students to rural-oriented NP programs.

### Introduction/Background

Encouraging more nurse practitioners (NPs) to work in rural areas is cited frequently as a solution for shortages of rural providers, especially in primary care.<sup>1-5</sup> While many studies have examined physician education programs’ strategies to promote rural practice,<sup>6-9</sup> much less is known about the extent to which NP education programs encourage rural practice. Results from two studies in the southwest United States indicate factors associated with rural NP practice are similar to those that support rural physician practice: history of rural residence, rural education experiences, and the college’s emphasis on rural practice. Daniels and colleagues surveyed graduates in New Mexico from 12 health professional programs, including NPs, and found that rural choice was associated with the size of one’s childhood town and rural practicum completion.<sup>10</sup> In addition, the authors found that students who were older at graduation, had rural backgrounds, and had preferences for living in smaller communities were associated with rural recruitment and retention, as were loan forgiveness and rural education programs. A study of 30 graduates of the Northern Arizona University School of Nursing program that prepares NPs to work in rural areas found that 87 percent were working in rural practices.<sup>11</sup>

There are several routes to becoming an NP, all of which involve graduate education. Nurses with a bachelor’s degree can either enter a Master’s in Nursing or Doctor of Nursing Practice (DNP) program, nurses who already have a Master’s in Nursing may choose a post-Masters certificate or DNP program, and there are graduate programs designed for individuals to become nurses through an intensive certificate program and progress directly into a Masters or DNP program to become an NP.

This study’s purpose was to quantify and describe NP education programs across the United States to identify those actively promoting NP practice in rural areas, describe their use of education methods that may promote rural practice, and identify barriers to recruiting rural students and providing rural NP clinical training.

### Methods

The study surveyed all 354 U.S. colleges with NP programs identified from the American Association of Colleges of Nursing in Spring 2013. Human subjects review was determined to not be required by the University of Washington Institutional Review Board. Directors of Family NP programs (the most common type of NP program), identified from college websites, were primary contacts for each institution,

with deans identified as secondary contacts (or primary if family NP program directors could not be identified). Contacts were invited to respond using a web-hosted instrument or a mailed paper questionnaire. Primary contacts were sent e-mail and U.S. mail invitations as many as five times, and secondary contacts were invited to participate as many as three times (for as many as eight contacts per college). Multiple responses from the same college were rare, but when that occurred only one response per college was included in the analytic data set.

The survey questionnaire, developed with assistance from NP educators and researchers, asked about NP programs offered, emphasis on and experience with rural/underserved student recruitment and education, didactic education methods including use of distance learning, and approaches and barriers related to clinical training and evaluation. A copy of the questionnaire can be accessed at: [http://depts.washington.edu/uwrhrc/uploads/NP\\_Ed\\_Quest.pdf](http://depts.washington.edu/uwrhrc/uploads/NP_Ed_Quest.pdf).

After 7 institutions were excluded from the original sample of 354 as out-of-scope (e.g., undeliverable address, program no longer exists), 256 institutions (73.8%) responded. There were no significant differences in response rates by census region. Responses were coded, entered, and verified in an electronic database, and checked for systematic errors during analysis. Assignment of ZIP codes to rural-urban locations was determined using the ZIP-code Version 2.0 of the Rural-Urban Commuting Area (RUCA) codes.<sup>12,13</sup> Data analysis was performed with SPSS Statistical Software Version 21.0. Standard chi-square tests were employed to determine the statistical significance of differences. Content analysis was conducted on comments made in open-ended fields to identify common themes.

## Findings

Masters-level NP degree programs were offered by the majority (90.6%) of responding colleges, about half (48.8%) offered Doctor of Nursing Practice (DNP) degrees, and 39.5 percent offered both Masters NP and DNP programs. Most colleges (80.1%) also offered post-Masters certificate NP programs.

The majority of colleges (91.0%) offered family NP programs (at the Masters, post-Masters certificate, or DNP level), followed in frequency by adult gerontology primary care (38.5%), family psychiatric mental health (29.7%), pediatric acute care (25.4%), adult gerontology acute care (19.5%), women's health (12.5%), neonatal (10.5%), and a variety of

other program types offered by fewer than 10 percent of responding colleges.

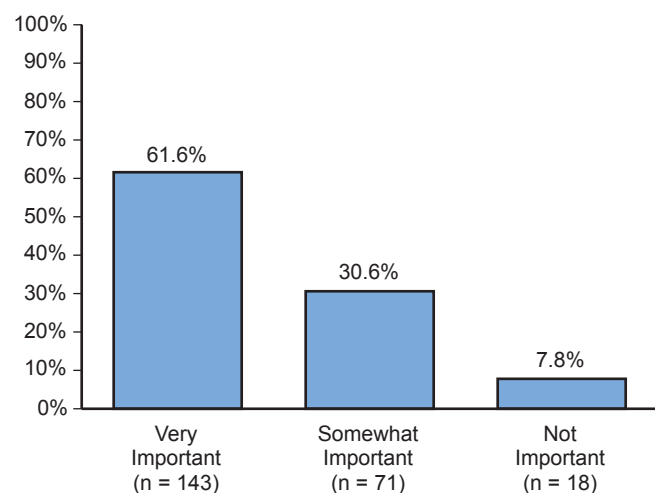
## Rural NP Recruitment and Preparation for Practice

Nearly two thirds (61.6%) of respondents said that it was "very important" to the college/program's mission or goals to prepare NPs for practice in rural areas, 30.6 percent felt it was "somewhat important," with 7.8 percent reporting it was "not important" (Figure 1).

Among the respondents reporting that preparing NPs for rural practice was very important (the "rural-oriented" NP colleges), 88.8 percent offered Masters, 52.4 percent offered DNP, and 41.3 percent offered both Masters- and DNP-level education through one or more of their NP programs, similar to the distribution for all programs.

Across all responding colleges, 54.1 percent reported that they actively recruit NP students from rural areas, and 59.4 percent reported that they actively recruit NP students who intend to practice in rural areas. More of the rural-oriented NP colleges actively recruit NP students from rural areas than colleges that were "less rural oriented" (those that reported preparing NPs for rural practice was somewhat or not important) (71.8% vs. 25.8%,  $P < .0001$ ). More of the rural-oriented colleges actively recruit students who intend to practice in rural areas than do less rural-oriented colleges (72.3% vs. 31.0%,  $P < .0001$ ) (Figure 2). Rural residence was considered among the NP student admission criteria

**Figure 1. Reported Importance of Preparing NPs for Practice in Rural Areas to College/Program's Mission or Goals**



Missing data for 24 respondents.

by more of the rural-oriented colleges compared with less rural-oriented colleges (28.0% vs. 9.3%,  $P < .001$ ).

### Geographic Distribution

Among all colleges with NP programs, most (92.2%) are located in urban areas. There are differences in the distribution across U.S. Census regions between the rural-oriented and the less rural-oriented colleges ( $P < .001$ ) (see Table 1). The rural-oriented institutions include a higher percentage of colleges in the West census region and a lower percentage of colleges in the Northeast census region compared with less rural-oriented colleges.

### Barriers to Promoting Rural Practice

A third (33.1%) of the respondents from colleges with rural-oriented NP programs indicated that a major barrier to rural student recruitment and training is that potential rural students find it difficult to relocate or commute to campus-based programs (Figure 3). The limited number of clinical training sites in rural areas was cited as a major barrier by more than a quarter (27.1%) of colleges. About one fifth of rural-oriented colleges (21.3%) reported the expense to students as a major barrier. More than half of rural-oriented colleges reported that finding qualified applicants from rural areas is not a barrier to student recruitment/training

(53.8%), and a similar percent reported that limited job opportunities in rural areas is not a barrier (58.8%).

### Use of Distance Learning

Overall, about two thirds of colleges with NP programs (65.7%) reported using a combination of in-person (classroom) and distance learning instruction across their NP programs. One fifth (20.2%) of the colleges with NP programs use only in-person instruction methods, and 14.2 percent use only distance learning methods. More rural-oriented colleges than less rural-oriented ones teach using

**Table 1. Geographic Distribution of Colleges with NP Programs by Importance of Preparing NPs for Rural Practices to the College/Program’s Mission or Goals**

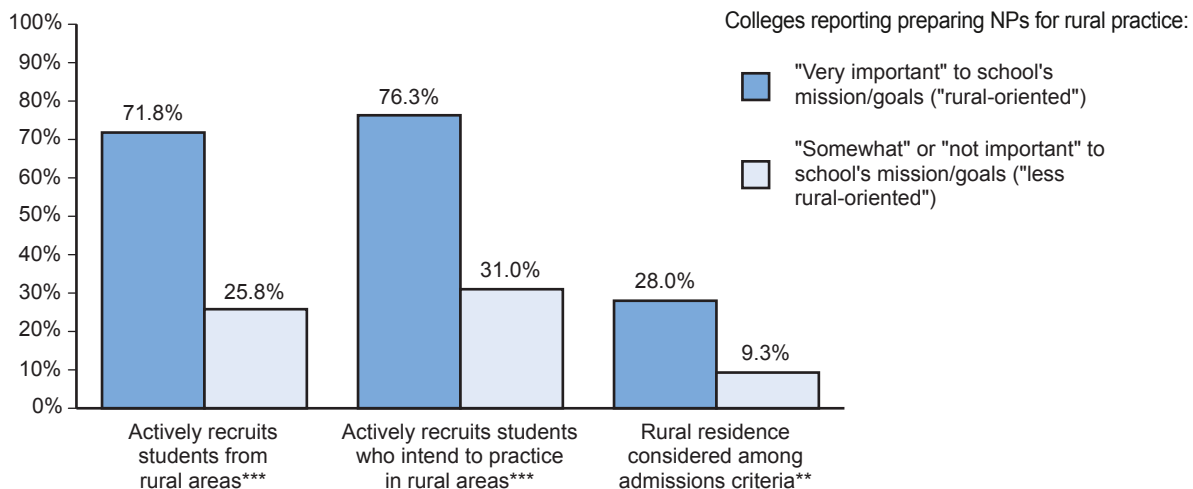
Census Region	Rural-Oriented <sup>a</sup> NP Colleges (n = 143)		Less Rural-Oriented <sup>b</sup> NP Colleges (n=89) <sup>c</sup>	
	n	%	n	%
West Region	32	22.4	7	7.9
Midwest Region	42	29.4	23	25.8
South Region	52	36.4	29	32.6
Northeast Region	17	11.9	30	33.7

<sup>a</sup>Colleges reporting that preparing NP students for rural practice is “very” important to the college/program’s mission or goals.

<sup>b</sup>Colleges reporting that preparing NP students for rural practice is “somewhat” or “not” important to the college/program’s mission or goals.

<sup>c</sup>Missing data for 24 colleges.

**Figure 2. Recruitment of Students from Rural Areas and Who Intend to Practice in Rural Areas by Importance of Preparing NPs for Rural Practice’s to the College/Program’s Mission or Goals**



\* $P < .01$ . \*\* $P < .001$ . \*\*\* $P < .0001$ .

only distance learning methods (18.3% vs. 6.8%;  $P < .05$ ), and fewer use solely in-person methods (14.8% vs. 29.6%,  $P < .0001$ ). Similar percentages of the two groups use both in-person and distance learning methods (66.9% among rural-oriented vs. 63.9% among less rural-oriented programs, not significant).

### Curriculum and Clinical Training

Most colleges with NP programs (80.5%) integrate content about providing care to underserved populations into their courses, and about half (51.6%) integrate content on providing rural health care. More than a quarter of respondents (27.7%) indicated their NP programs have stand-alone courses on underserved populations, and 15.6 percent have stand-alone courses on rural populations.

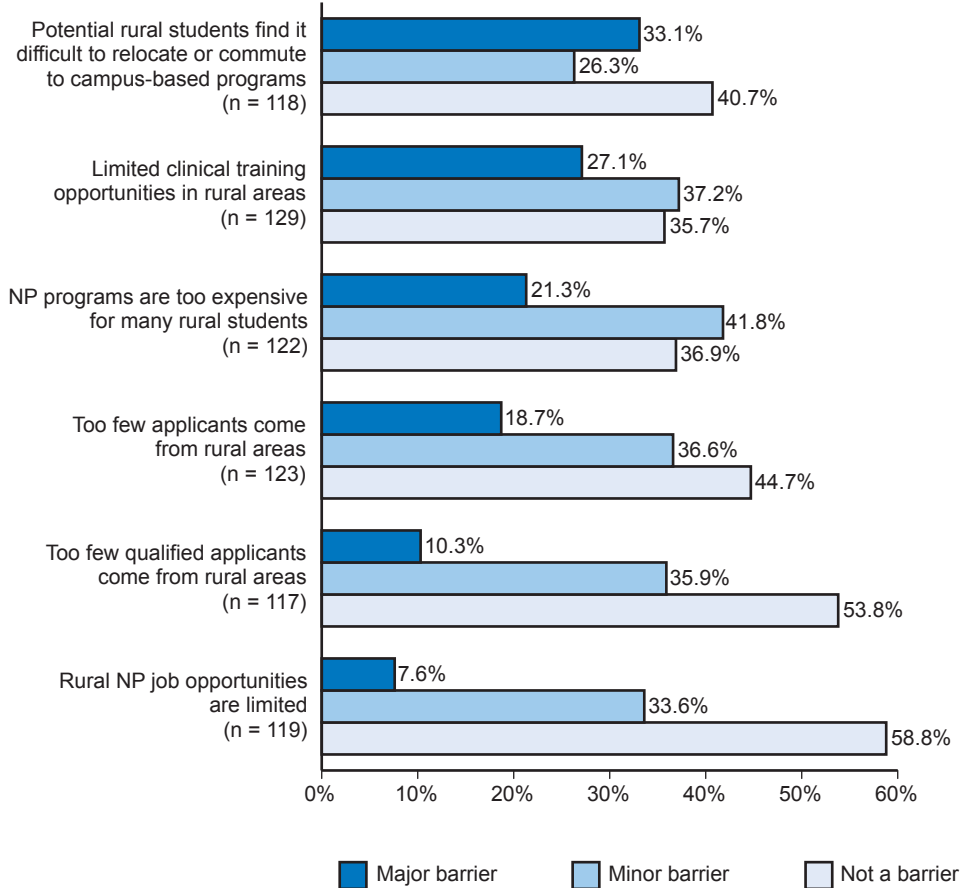
Higher percentages of the rural-oriented colleges with NP programs have stand-alone courses on underserved and rural topics (30.8% and 22.4%, respectively) as well as integrated content on these topics (90.2% and 69.9%, respectively).

The majority of colleges with NP programs (85.5%) reported having clinical training sites in underserved areas, and about half (54.3%) have sites in rural areas. Almost all (97.2%) of the colleges with rural-oriented NP programs include clinical training in underserved areas, and the majority (88.8%) have rural clinical training sites.

### Strategies Most Successful for Recruiting Students from Rural Communities

Respondents were asked to comment on the strategies they found most successful for recruiting NP students

**Figure 3. Barriers to Rural NP Student Recruitment and Training among Colleges with Rural-Oriented<sup>a</sup> Programs**



N's vary due to missing data, "don't know," and "not applicable" responses.

<sup>a</sup>Respondent indicated that preparing NP students for rural practice is "very" important to the college/program's mission or goals.

from rural areas. The most common strategies were related to outreach activities, which could be accomplished in several ways, such as by using websites, education fairs, etc., to reach prospective students; identifying students and securing preceptor sites via employers; via employers and communities; and by using word of mouth to support recruitment such as through the recommendations of former students. Promoting the accessibility of the NP programs' teaching methods (distance education, evening classes, flexible schedules, and rural clinical training sites) was also cited by multiple respondents as a successful recruiting strategy. Other successful approaches mentioned by respondents included the benefit of being located in/near a rural area, which diminished the need for specific outreach to rural students, as well as making financial assistance available to students.

## Conclusions

Preparing NPs for rural practice is important to the majority of U.S. colleges with NP programs, as indicated by the high percentage reporting that recruiting rural students is very important to their mission or goals. These rural-oriented programs demonstrate their commitment by using more distance learning teaching approaches than less rural-oriented colleges, which help make programs more accessible to rural, place-bound NP students. In addition, more colleges with rural-oriented NP programs actively recruit rural students and include rural residence among student selection criteria than do other colleges with NP programs. Respondents from the colleges with rural-oriented NP programs also report providing stand-alone and integrated content on care for rural and underserved populations at higher rates than those from less rural-oriented programs.

More of the colleges with NP programs in the West are rural oriented, consistent with the highly rural nature of those states. Few NP programs are located in rural areas, which is not surprising because post-graduate education programs are usually associated with urban-based universities.

While the majority of rural-oriented colleges with NP programs provide at least some courses by distance learning, less than a fifth have NP programs that can be completed solely using distance methods (not including the required clinical training components of the programs). This likely contributes to explaining why many respondents indicated that relocating or commuting to campus-based programs was a barrier to rural student recruitment and training. The limited number of clinical training opportunities in rural areas was also cited by many respondents as a barrier, as was the affordability of NP education for rural students.

To support rural NP student enrollment and practice, colleges with NP programs have employed various outreach strategies designed to increase awareness of their programs and promote their accessibility to rural students.

While this study's response rate was relatively high, a potential limitation is that more of the responses may have come from rural-oriented colleges because of their inherent interest in the topic. If so, the findings likely overstate the proportion of the nation's colleges with NP programs that have a rural orientation.

## Implications for Policy and Practice

This study's findings provide fundamental information that can be used for rural workforce planning. Knowing which NP programs emphasize rural student recruitment and

practice, and the tools they use to implement that emphasis, is key to understanding how rural health workforce shortages might be addressed. Further evaluation is needed, however, to assess the effectiveness of NP programs in producing rural-practicing NPs. Very few of this study's respondents reported that their colleges maintained relatively complete data on the practice locations of their NP graduates, and there are no available national data sets that can link NPs and their practice location with the institution where they attained their advanced practice status. New research that would collect and analyze these data is required to provide evidence associating NP education with practice location.

At some colleges, entire NP education programs and many individual courses have been adapted for distance learning, reducing the amount of classroom time and enabling rural RNs to attain advanced nursing education while remaining, and often working, in rural communities. Increasing distance learning opportunities for rural RNs to attain NP degrees, particularly in primary care specialties, is a valuable tool (in concert with support for rural physician and physician assistant education and training) for filling rural health workforce gaps.

Results also indicate that the limited number of clinical training sites will continue to hinder the production of rural-practicing NPs. Competition among health professions' education programs for clinical training sites is growing. The financial and administrative pressures of the changing health care environment contribute to the reluctance of potential preceptors and clinical training sites to participate in education. Payers, such as Medicare, often limit student involvement in patient care, and preceptor clinicians must replicate as well as oversee many of the patient services provided by students, greatly reducing the efficiency of training clinics. More and better incentives are needed to encourage providers and practices, especially those in rural areas that are generally smaller and less resourced, to welcome NP and other health careers students into their practices.

This study's findings reinforced the general belief that financial support, including scholarships, tuition reimbursement, and clinical training assistance, continues to be needed to encourage NP students from, and who will consider working in, rural areas. Participation by states in health careers scholarship and tuition reimbursement programs, including the federal State Loan Repayment Program that shares costs with states, is compromised by slow state economic growth. Other federal programs such as the National Health Service Corps and Nurse Corps<sup>14</sup>

may not be able to fully fill the need for financial support to students who choose to work in rural and underserved communities. As health workforce demand increases to meet the growing needs of an aging and more-insured rural U.S.

population, NP education programs and their students will benefit from efforts to identify and encourage public and private sources of support for rural NP student recruitment and practice.

## References

1. Baer LD, Smith LM. Nonphysician professionals and rural America. In: Ricketts TC, ed. *Rural Health in the United States*. New York: Oxford University Press; 1999:52-90.
2. DesRoches CM, Gaudet J, Perloff J, Donelan K, Iezzoni LI, Buerhaus P. Using Medicare data to assess nurse practitioner-provided care. *Nurs Outlook*. Nov-Dec 2013;61(6):400-407.
3. Rosenblatt RA, Andrilla CH, Curtin T, Hart LG. Shortages of medical personnel at community health centers: implications for planned expansion. *JAMA*. Mar 1 2006;295(9):1042-1049.
4. Rosenblatt RA, Huard B. The nurse practitioner as a physician substitute in a remote rural community: a case study. *Public Health Rep*. Nov-Dec 1979;94(6):571-575.
5. Shi L, Samuels ME, Ricketts TC, 3rd, Konrad TR. A rural-urban comparative study of nonphysician providers in community and migrant health centers. *Public Health Rep*. Nov-Dec 1994;109(6):809-815.
6. Brooks RG, Walsh M, Mardon RE, Lewis M, Clawson A. The roles of nature and nurture in the recruitment and retention of primary care physicians in rural areas: a review of the literature. *Acad Med*. Aug 2002;77(8):790-798.
7. Quinn KJ, Kane KY, Stevermer JJ, et al. Influencing residency choice and practice location through a longitudinal rural pipeline program. *Acad Med*. Nov 2011;86(11):1397-1406.
8. Rabinowitz HK, Diamond JJ, Markham FW, Paynter NP. Critical factors for designing programs to increase the supply and retention of rural primary care physicians. *JAMA*. Sep 5 2001;286(9):1041-1048.
9. Pathman DE, Steiner BD, Jones BD, Konrad TR. Preparing and retaining rural physicians through medical education. *Acad Med*. Jul 1999;74(7):810-820.
10. Daniels ZM, Vanleit BJ, Skipper BJ, Sanders ML, Rhyne RL. Factors in recruiting and retaining health professionals for rural practice. *J Rural Health*. Winter 2007;23(1):62-71.
11. Conger MM, Plager KA. Advanced nursing practice in rural areas: connectedness versus disconnectedness. *Online J Rural Nurs Health Care*. 2008;8(1).
12. Morrill R, Cromartie J, Hart LG. Metropolitan, urban, and rural commuting areas: toward a better depiction of the US settlement system. *Urban Geogr*. 1999;20(8):727-748.
13. WWAMI Rural Health Research Center, University of Washington. Rural-Urban Commuting Area Codes (RUCAs). <http://depts.washington.edu/uwruca/>. Accessed April 3, 2014.
14. U.S. Department of Health and Human Services, Health Resources and Services Administration. Loans & scholarships. <http://www.hrsa.gov/loanscholarships/index.html>. Accessed April 3, 2014.

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