

RHAC Brief: Nurse Practitioners in Rural Minnesota – Results of an Employer Survey

August 2015

The [Rural Health Advisory Committee](#) (RHAC), a 15-member body appointed by the governor of Minnesota to advise the commissioner of health and other agencies on rural health issues, conducted a survey of rural clinics and hospitals to understand more about the state's rural nurse practitioner workforce in the midst of health reform and growing workforce challenges. In October 2014, surveys were sent to 402 Minnesota rural health care sites, including all 79 of the state's [Critical Access Hospitals](#) (CAHs) (60 percent response rate), its 87 federally certified [Rural Health Clinics](#) (40 percent response rate) and 236 other rural clinics (21 percent response rate). Most of those responding were from facility administration: hospital administrators, clinic managers, directors of nursing, and human resources staff.

Background

Nurse practitioners (NPs) are registered nurses (RNs) with additional training and certification, one of four types of Advanced Practice Registered Nurses (APRNs).ⁱ In addition to having an RN license, nurse practitioners in Minnesota must complete a graduate-level NP program and be certified by a recognized national certification organization for at least one of six patient populations.ⁱⁱ

In January 2015, Minnesota began issuing a [separate license for APRNs](#) and became one of 12 states in the U.S. to allow NPs to practice and prescribe independently.ⁱⁱⁱ This RHAC survey was conducted before the law was enacted, with a comparable study planned for 2017-18 to explore possible effects of the 2015 scope expansion in rural areas.

Rural-urban distribution

As of May 2015, Minnesota had issued APRN licenses to 3,883 certified NPs.^{iv} The great majority (80 percent) of the state's NPs are concentrated in urban areas. Only 10 percent live in small or isolated rural areas, while 15 percent of the state's population lives there.^v The remaining 10 percent live in large rural, or "micropolitan," areas. This resembles the distribution of physicians and physician assistants in Minnesota.

Similarly, NPs were underrepresented in most of the state's regions, exceeding population proportions only

in the southern region (which includes Rochester) and the northeast (including Duluth).^{vi}

Staffing patterns

Nurse practitioners are employed by a broad range of rural hospitals and clinics in Minnesota, and work in a variety of clinical settings. Most of the rural facilities surveyed employ at least one NP: 84 percent of clinics and 80 percent of CAHs. Of these, 80 percent of clinics and roughly half of the hospitals employ three or fewer NPs.

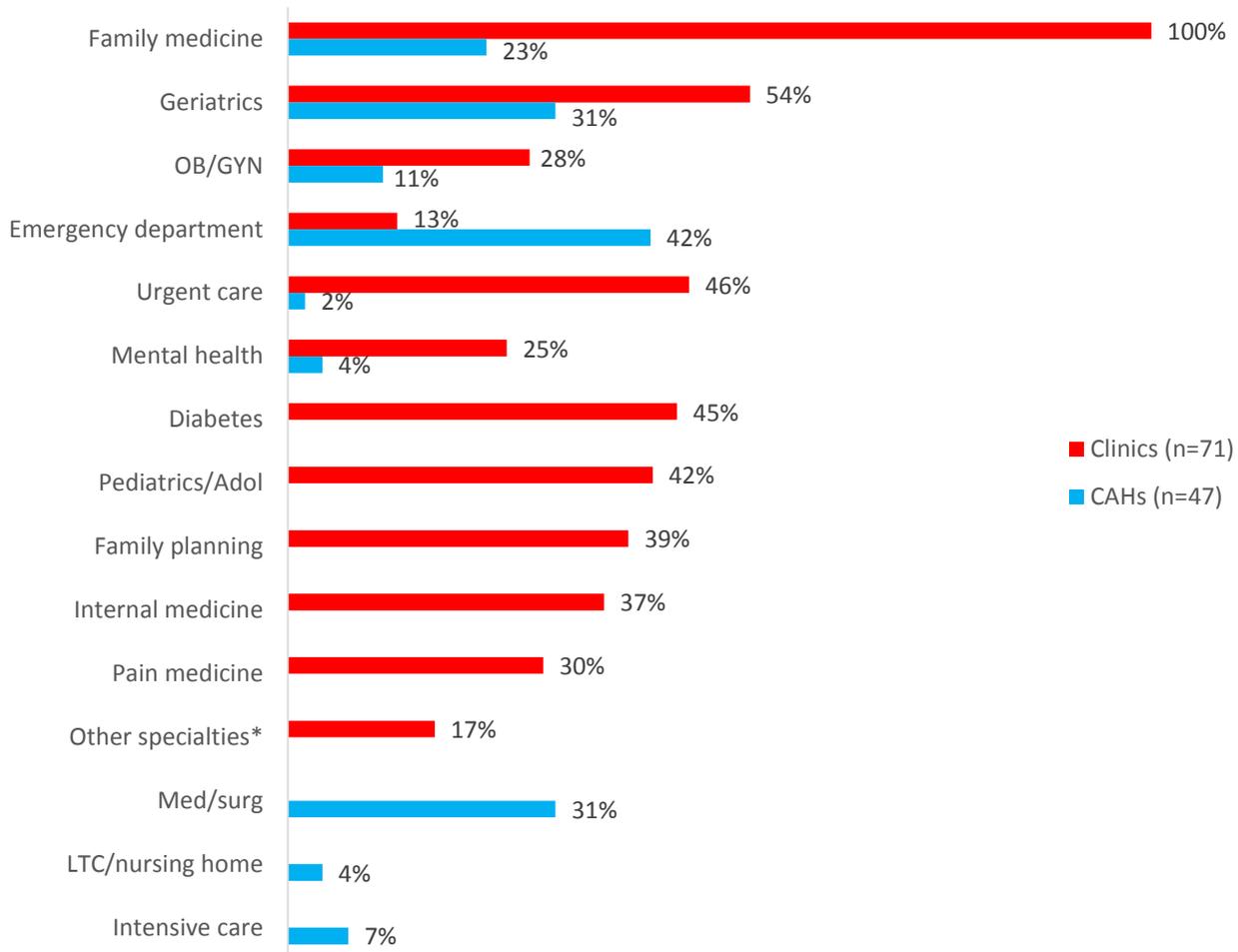
Among clinics specifically, those in small and isolated areas were more likely than those in large rural areas to employ only one or two NPs.

NPs represent a significant portion of the primary care workforce in the rural clinics and hospitals surveyed. On average, NPs represented nearly one third (27-29 percent) of primary care provider staff in each rural facility. Physician assistants (PAs) represented 16-18 percent and physicians just over half. Compared to hospitals, clinics reported a slightly larger proportion of NPs than PAs in their primary care provider staff, while hospitals had a slightly higher share of PAs.

Among clinics, NPs in isolated rural areas were more likely than those in other rural areas to make up more than one third of the primary care providers in a facility.

Compared to hospitals, clinics tended to use NPs in a wider range of practice areas, and in family medicine, geriatrics and OB/GYN (Figure 1). Hospitals were more likely to use NPs in emergency medicine and medical/surgery care. Notably, clinics were much more likely to use NPs for mental health care (25 percent of clinics vs. 4 percent of CAHs).

Figure 1. **Share of facilities using nurse practitioners in these departments**



*Other specialties include: Oncology, orthopedics and nephrology.

Clinics in large rural areas appear more likely than those in smaller rural areas to use NPs in more specialized areas (such as oncology or nephrology) and clinics in small and isolated rural areas deploy them more in emergency care.

Nurse practitioners had admitting privileges at just over half (51 percent) of the Critical Access Hospitals.

Care coordination & health homes

The survey also asked about Health Care Homes and care coordination, as these models often involve NPs.^{vii}

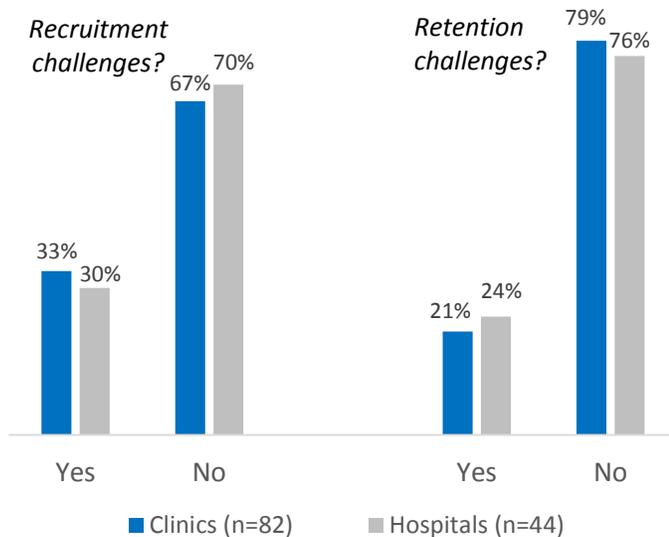
Roughly two-thirds (68 percent) of the clinics and 40 percent of the hospitals reported being certified as a [Health Care Home](#) or in the process of becoming certified.

Both types of rural facilities reported similar levels of using NP-led teams for care coordination, with 23 percent of clinics and 21 percent of hospitals doing so.

Recruitment and retention

When asked if they experienced challenges in recruiting NPs, roughly one in three clinics (33 percent) and hospitals (30 percent) said yes (Figure 2). Even fewer of the facilities - 20 percent of clinics and 23 percent of hospitals - reported challenges retaining NPs once on staff.

Figure 2. Does your rural facility face challenges in recruiting and/or retaining NPs?



The most common recruitment and retention challenges were rural location and the lack of amenities associated with it, such as job opportunities for spouses and housing, and long commuting distances for more isolated sites. Other challenges were the requirement that NPs cover ER call or other hospital hours; comparatively lower pay; and lack of experience in rural settings.

Most of the clinics and hospitals reported using employment incentives for NPs: 70 percent of clinics and 64 percent of hospitals use recruitment incentives, and a similar proportion use them for retention. The most common recruitment incentives were sign-on bonuses (28 percent of clinics, 47 percent of CAHs); loan forgiveness (38 percent of clinics and 43 percent of CAHs); and covering the cost of collaborative management agreements (30 percent of clinics, 9 percent of CAHs). For retention, a continuing education budget, advanced training opportunities and tuition assistance were the most common incentive methods.

The survey also asked for ideas on how to address recruitment and retention challenges, beyond incentives already in use.

At the public policy level, several respondents noted the importance of addressing reimbursement policies that do not align with greater practice independence for NPs, even when state law allows for it. For rural NPs, this is particularly an issue in CAHs, where federal reimbursement rules require a physician to periodically review and sign records for an NP's inpatient services, regardless of state regulations allowing them to practice independently.^{viii}

Other suggestions related to NP education included:

- Expand enrollment in NP programs.
- Encourage NP programs to be developed at community colleges and online/remote options.
- Create an NP-to-MD track.
- Create a rural health care track or courses.
- Require that part of NP education take place in a CAH and in a rural shortage area.
- Require a residency for NPs.
- Expand the number of training sites.
- Expand loan forgiveness programs.

Suggestions at the practice level:

- "Grow your own": Set up an RN-to-NP loan repayment program with paid time off for education.
- Use team approaches, including monthly medical staff meetings and involving NPs in performance and process improvement.
- Increase compensation, particularly starting wages and reimbursement for mileage costs.
- Mentor new hires.
- Provide CALS (Comprehensive Life Support) or ATLS (Advanced Trauma Life Support) training, to increase NP confidence in the ER.

The rural hospitals were also asked whether their facility would be interested in an NP residency program for CAHs available through distance education or in a hybrid format. Roughly half (58 percent) of the CAHs expressed an interest, with many others needing more detail to answer. The hospitals were also asked to provide suggestions for such a program. Ideas included incorporating trauma

and other acute-care training; adding obstetrics and/or surgery as part of a rural rotation; and allowing CAHs to sponsor an NP in a tertiary facility's emergency medicine residency program in exchange for post-residency service.

Discussion

Several of the survey findings are unsurprising but worth noting:

- **The great majority of rural health care facilities in Minnesota employ at least one NP.** This may be influenced by the structure of CAHs and Rural Health Clinics (RHCs). RHC federal law explicitly seeks to increase the number of non-physician practitioners like NPs in rural areas: RHCs are required to employ at least one NP or PA, and they must be working at the clinic at least 50 percent of the time the clinic is operating.^{ix} CAHs also have unique incentives to use such providers, including cost-based Medicare reimbursement of NPs and other advanced practice practitioners in the emergency room.^x
- **NPs play a major role in rural primary care, especially in clinics and in smaller rural areas of the state.** This is consistent with national studies that have found NPs are more likely than physicians to practice primary care (versus specialty care), that the likelihood of a physician working with an NP or PA increases with level of rurality, and that a greater share of rural NPs compared to urban NPs provide primary care.^{xi}
- **Rural clinics use NPs in a broader range of practice areas than hospitals, which tend to deploy NPs in fewer, more specialized areas and in emergency medicine.** This is unsurprising given the more generalist nature of clinics and the higher acuity of conditions treated in hospitals.

Other findings were more unexpected:

- **Fewer than expected rural health employers have trouble finding – and keeping – NPs.** Only a minority of those surveyed (roughly one in three facilities) reported challenges with NP recruitment, and even fewer cited issues with retention. This was surprising given longstanding primary care and other provider shortages in rural Minnesota. It is consistent, however, with national studies that have found NPs, and rural

NPs specifically, generally have high job satisfaction rates.^{xii} And it suggests NPs may represent a comparatively stable workforce once in place.

- **Compared to hospitals, rural NPs in clinics appear to be more involved in mental health care.** While 25 percent of the rural clinics had NPs providing mental health care, only 4 percent of CAHs did. It is unclear whether this represents practice patterns elsewhere in the state or U.S.
- **NPs had admitting privileges in only half of the hospitals.** Given the broad use of NPs in rural emergency room and other hospital-based care, it is unclear why more of them do not have this ability to admit patients into the hospital. This number may increase with the recent expansion of NP scope of practice in Minnesota.

One of the questions prompting this survey was how NPs were being deployed in rural emergency rooms. A 2011 statewide survey found only 2 percent of NPs were involved in emergency and urgent care,^{xiii} which RHAC members hypothesized was low in the case of rural. This survey suggests their use is indeed higher in rural Minnesota settings, with 40 percent of the CAHs and 13 percent of the clinics reporting that NPs are involved in ER care. This is consistent with a 2012 national study that found roughly half of non-urban hospitals used NPs or PAs in their EDs.^{xiv}

The heavier use of NPs in emergency rooms appears to come with issues, however. Notably, both clinics and hospitals reported that many NPs choose to work elsewhere because of the requirement that they be on call for the ER. Some of this may be attributable simply to the numerous challenges of practicing emergency medicine in a small, resource-limited facility. But some studies suggest a lack of preparation appears to be even more important, with many NPs feeling inadequately trained for emergency care in particular, even as many rural facilities expect them to practice it.^{xv}

Most NPs working in ERs are trained in primary care, and only eight emergency care NP programs exist in the U.S., leading some to call for more such transition-to-practice programs for NPs.^{xvi} This was the basis for the survey's question regarding a CAH-specific nurse residency program. At least half of the CAHs expressed an interest in such a program.

References

- ⁱ The four APRN roles under Minnesota law are Certified Nurse Practitioner (CNP), Certified Nurse Anesthetist (CNA), Clinical Nurse Specialist (CNS) and Certified Nurse Midwife (CNM). For more information, see Minnesota Board of Nursing. Advanced Practice Registered Nurse Licensure. These roles, as well as the six patient populations below, are defined in the Minnesota law that went into effect January 2015, so after the completion of this RHAC study. More detail on the new licensing law available from: http://mn.gov/health-licensing-boards/nursing/advanced_practice/advanced_practice_licensure/.
- ⁱⁱ The six populations are Family & Individual Across the Lifespan; Adult-Gerontology; Neonatal; Pediatrics; Women's and Gender-Related; and Psychiatric and Mental Health. NPs beginning practice after July 1, 2014 must also practice for at least 2,080 hours within the context of a collaborative management setting in a hospital or integrated clinical setting where APRNs and physicians work together, before practicing independently. Minnesota Board of Nursing. Advanced Practice Registered Nurse Licensure. Available from: http://mn.gov/health-licensing-boards/nursing/advanced_practice/advanced_practice_licensure/.
- ⁱⁱⁱ 2014 Minnesota Statutes section 148.211. Available from: <https://www.revisor.mn.gov/statutes/?id=148.211>. For more information on the APRN Consensus Model, which informed Minnesota's law, see the National Council of State Boards of Nursing, APRN Consensus Model. Available from: <https://www.ncsbn.org/736.htm>.
- ^{iv} Minnesota Board of Nursing. Licensing data provided in presentation to the Rural Health Advisory Committee. May 2015. Available from: <http://www.health.state.mn.us/divs/orhpc/rhac/presentations/aprnpres.pdf>.
- ^v Based on reported Minnesota mailing addresses. Minnesota Board of Nursing licensing data, March 2015. To understand the urban-rural distribution of the health workforce, this report uses four Rural-Urban Commuting Area (RUCA) categories: urban, large rural, small rural and isolated rural. The USDA Economic Research Service derived the 2010 RUCAs from population data for 2010 U.S. Census Tracts and commuting flows from the 2006-2010 American Community Survey. For this report, RUCAs for were assigned based on NP mailing addresses. More information on RUCAs is available on ORHPC's website: <http://www.health.state.mn.us/divs/orhpc/define.html>.
- ^{vi} Based on the six planning regions defined by the Minnesota Department of Employment and Economic Development (DEED). See Minnesota Department of Employment and Economic Development (DEED), Planning Areas: <https://apps.deed.state.mn.us/assets/lmi/areamap/plan.shtml>.
- ^{vii} A "health care home," also called a "medical home," is an approach to primary care in which primary care providers, families and patients work in partnership to improve health outcomes and quality of life for individuals with chronic health conditions and disabilities. For more information, see Health Care Homes at the Minnesota Department of Health: <http://www.health.state.mn.us/healthreform/homes/>.
- ^{viii} Department of Health and Human Services. Centers for Medicare & Medicaid Services. State Operations Manual, Appendix W, Interpretive Guidelines, §485.631(b)(1)(iv) & (v). Available from: http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/Downloads/som107ap_w_cah.pdf. See also: Rural Health Fact Sheet Series: Rural Health Clinic. August 2014. Available from: <http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/RuralHlthClinfctsh.pdf>.
- ^{ix} Department of Health and Human Services. Centers for Medicare & Medicaid Services. Rural Health Fact Sheet Series: Rural Health Clinic. August 2014. Available from: <http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/RuralHlthClinfctsh.pdf>.
- ^x Code of Federal Regulations. Title 42, Public Health. Chapter IV, Subchapter G, Part 485, Conditions of Participation: Specialized Providers. Subpart F: Critical Access Hospitals (CAHs). Section 485.631, Staffing and staff responsibilities. Available from: http://www.ecfr.gov/cgi-bin/text-idx?rgn=div6&node=42:5.0.1.1.4.4#se42.5.485_1631. For more information on CAHs, see Rural Assistance Center. Critical Access Hospitals: <https://www.raconline.org/topics/critical-access-hospitals>.
- ^{xi} Hing E, Hsiao CJ. State variability in supply of office-based primary care providers: United States, 2012. NCHS data brief, no 151. Hyattsville, MD: National Center for Health Statistics. 2014. Available from: <http://www.cdc.gov/nchs/data/databriefs/db151.htm>. Susan M. Skillman, Holly A. Andrilla, Joanne Spetz. Nurse Practitioners in Rural America: Findings from the 2012 National Sample Survey of NPs. WWAMI Rural Health Research Center, poster presented at the AAMC (Association of American Medical Colleges) Health Workforce Research Conference, April 2015.
- ^{xiii} U.S. Department of Health and Human Services, Health Resources and Services Administration, National Center for Health Workforce Analysis. Highlights From the 2012 National Sample Survey of Nurse Practitioners. Rockville, Maryland: U.S. Department of Health and Human Services, 2014. Available at:

<http://bhpr.hrsa.gov/healthworkforce/supplydemand/nursing/nursepractitionersurvey/npsurveyhighlights.pdf>. Skillman et al. Nurse Practitioners in Rural America: Findings from the 2012 National Sample Survey of NPs. WWAMI Rural Health Research Center, poster presented at the AAMC Health Workforce Research Conference, 2015.

^{xiii} Minnesota Department of Health, Office of Rural Health & Primary Care. Minnesota's Advanced Practice Registered Nurses, 2010. April 2011. Available from: <http://www.health.state.mn.us/divs/orhpc/pubs/workforce/aprn.pdf>.

^{xiv} Wiler JL, Rooks SP, Ginde AA. Update on midlevel provider utilization in U.S. emergency departments, 2006 to 2009. *Acad Emerg Med*. Aug; 19(8), 986-9. 2012. It is also consistent with a 2003 study that found that 52 percent of Minnesota CAHs reporting using advance practice professionals (including NPs) in the ER. Urban G. Evaluation of the use of midlevel practitioners in staffing emergency departments in Critical Access versus non-Critical Access hospitals in Minnesota. Clearwater Health Services, March 2004. Available from: <http://www.health.state.mn.us/divs/orhpc/pubs/midlevelsurvey.pdf>.

^{xv} Barnason S, Morris K. Health care in rural hospitals: A role for nurse practitioners. *Advanced Emergency Nursing Journal*, 33(2), 145-154. 2011. Wolf L, Delao AM. Identifying the Educational Needs of Emergency Nurses in Rural and Critical Access Hospitals. *The Journal of Continuing Education in Nursing* 44.9, 424-428. Sep 2013.

^{xvi} Nancy Jean Stock. A Transition-to-Practice Residency That Supports the Nurse Practitioner in a Critical Access Hospital. Dissertation, Walden University. 2015. Available from: <http://scholarworks.waldenu.edu/dissertations/404/>. Stock also cites a 2014 study found that among advanced practice nurses in the ED, 43 percent were certified as Family NPs, 13 percent were acute care NPs, 12 percent were adult NPs and 7 percent were pediatric NPs. O'Connell J, Gardner G, Coyer F. Profiling emergency nurse practitioner service: An interpretive study. *Advanced Emergency Nursing Journal*, 36(3), 270-290. 2014. Another study found that only 64 percent of nurse practitioners working in CAHs felt they had been adequately prepared for the diagnosis and management of common emergency presentations. Barnason S, Morris K. Health care in rural hospitals: A role for nurse practitioners. *Advanced Emergency Nursing Journal*, 33(2), 145-154. 2011.



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