

RESEARCH LETTER

Practice-based Research Network Membership is Associated with Retention of Clinicians in Underserved Communities: A Research Involving Outpatient Settings Network (RIOS Net) Study

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Background: Professional isolation is a barrier to practicing in rural and underserved communities. The purpose of this study was to investigate the association between membership in a practice-based research network and the length of employment in members' and nonmembers' current clinic sites.

Methods: This was a cross sectional study of 7 group practices (2 urban and 5 rural groups comprising 22 clinic sites) throughout New Mexico that had RIOS Net member and nonmember practicing clinicians.

Results: The 22 clinics employed 95 clinicians, of which 43% were RIOS Net members (21 of 59 MDs, 8 of 18 Nurse Practitioners, 9 of 15 Physician Assistants and 3 of 3 others). RIOS Net members had a significantly longer mean employment time (7.0 years; SD, 6.8 years; median, 5.0 years), compared with non-RIOS Net members (4.0 years; SD, 5.0 years; median, 2.3 years; $P = .003$). Similar results were found when analyzed by length of time in practice with cutoffs of 2 and 5 years.

Discussion: Being a member of a practice-based research network may be a determinate of staying in rural practice longer. This is a hypothesis-generating study and needs confirmation from larger studies whose analysis stratifies clinician demographics and practice type. (J Am Board Fam Med 2008;21: 353–355.)

Professional isolation is a barrier to practicing in rural and underserved communities.¹ One of the potential contributions of a practice-based research network (PBRN) in a rural state like New Mexico may be its beneficial effect on the retention of providers in medically underserved areas. There are at least 4 types of factors related to clinician recruitment and retention: working conditions, personal interest and background, experience during medical training, and attributes of the community and environment.^{2,3}

Working conditions include professional intellectual stimulation and career opportunities.

Research Involving Outpatient Settings Network (RIOS Net) is an 8-year-old PBRN in New Mexico with 255 members. Almost all RIOS Net practices are in medically underserved areas as defined by the federal government's designation as a Health Provider Shortage Area. Its purpose is to improve the health and health care of underserved, low-income, multiethnic populations of the Southwest. RIOS Net has completed 12 studies about a variety of topics identified by our membership as high-priority research areas, including acanthosis nigricans and diabetes risk, complementary and alternative medicine, chronic nonmalignant pain, hepatitis C in primary care, obesity counseling in primary care, and tobacco use among young people. We examined the association of being a RIOS Net member to the retention of clinicians, as measured by length of employment in their current clinic sites.

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Table 1. Length of Employment* of Research Involving Outpatient Settings Network Members Versus Non-members in the Same Clinics

Variable	RIOS Net Member		P
	No (n = 54)	Yes (n = 41)	
Length of employment			
Mean (SD)	4.0 (5.0)	7.0 (6.8)	
Median (range)	2.3 (0.0–22.1)	5.0 (0.7–28.1)	.003 [†]
Length of employment (n [%])			0.01 [‡]
<2 years	24 (44)	8 (20)	
≥2 years	30 (56)	33 (80)	
Length of employment (n [%])			.03 [‡]
<5 years	37 (69)	19 (46)	
≥5 years	17 (31)	22 (54)	

*Length of employment measured by years in practice.

[†]Wilcoxon Rank Sum test.

[‡] χ^2 test.

We compared RIOS Net member clinicians' length of employment in their current clinic sites to that of nonmembers working in the same clinics. The unit of membership in our PBRN is the individual clinician, not clinics; therefore, clinic provider staffing may include RIOS Net members and nonmembers. We selected a purposive sample of 7 clinical group practices comprising 22 clinic sites throughout New Mexico. The sampling frame included both urban and rural practices and clinics that currently or recently had both RIOS Net members and nonmembers. Two of the clinic groups selected were urban and 5 were in towns with populations under 20,000. Overall, RIOS Net has 55 clinic sites.

To obtain more in-depth, qualitative data, we contacted an additional 17 members of the network to inquire about members' perceptions of the role of research and membership in a PBRN. These members were selected to represent a range of practice types among active members of the network. The following 2 questions were asked: "How important is it for you to be involved in research in your practice settings?" and "What role do you think RIOS Net can play in keeping clinicians practicing in rural locations?" We obtained responses from 12 clinicians: 11 by email and 1 by personal interview.

The 22 clinics employed 95 clinicians, of which 41 (43%) were RIOS Net members (21 of 59 MDs, 8 of 18 Nurse Practitioners, 9 of 15 Physician Assistants, and 3 of 3 others). Using univariate analysis, we found that RIOS Net members had a mean employment time of 7.0 years (SD, 6.8; me-

dian, 5.0) compared with non-RIOS Net members in the same clinic, who had a mean employment time of 4.0 years (SD, 5.0; median, 2.3). The Wilcoxon rank sum test, used to compare the difference because the data were skewed toward shorter periods of employment, showed a significant difference ($P = .003$). Stratification analysis using χ^2 testing showed that significantly more RIOS Net members (80%) had been in their clinic for 2 or more years compared with non-RIOS Net members (56%) ($P = .01$), and more RIOS Net members (54%) had been in their clinic for 5 or more years compared with non-RIOS Net members (31%) ($P = .03$). PBRN members' length of employment was an average of 3 years longer compared with nonmembers.

The qualitative interviews revealed that these clinicians frequently feel intellectually isolated; they expressed enthusiasm for participation in research projects and associated Continuing Medical Education opportunities and felt that membership in a PBRN contributed to retention in rural practice. One medical director noted that offering involvement in research helped him with recruitment and retention in his community health clinics. Participating in research may positively influence rural clinicians' need for intellectual stimulation by fulfilling their interest in research and connecting them to peers in a larger PBRN network. Being a member of a PBRN may be a determinate of a clinician staying in rural practice longer.

Although this study does not show causation, there is an association between PBRN membership and the

retention of clinicians within rural and underserved communities. It could be that the same characteristics that lead clinicians to stay in the same practice longer also lead them to become members of PBRNs. The longer a clinician is in practice, the more wherewithal he or she may have to participate in a research network. We believe this to be a hypothesis-generating finding and worth further study. Membership in a PBRN may make a significant contribution to a clinician's decision to continue to practice longer in underserved communities.

References

1. Richards HM, Farmer J, Selvaraj S. Sustaining the rural primary healthcare workforce: survey of healthcare professionals in the Scottish Highlands. *Rural Remote Health* 2005;5:365. Epub 2005 Mar 15.
2. Goertzen J. The four-legged kitchen stool. Recruitment and retention of rural family physicians. *Can Fam Physician* 2005;51:1181-3, 1184-6.
3. Daniels Z, VanLeit BJ, Skipper BJ, Sanders ML, Rhyn RL. Factors in recruiting and retaining health professionals for rural practice. *J Rural Health* 2007; 23, 62-71.