

Rural Residency Training for Family Medicine Physicians: Graduate Early-Career Outcomes, 2008-2012

This policy brief updates a previous one¹ with new data for the 2011-12 academic year.

Key Points

- Family medicine Rural Training Track residency programs (RTTs) train physicians for practice in rural areas, which face a persistent shortage of primary care providers.
- A slight majority of graduates from RTT programs in this study were men, and about half completed undergraduate medical training outside the United States and Canada.
- About one in six RTT graduates were engaged in teaching.
- At least half of RTT graduates were located in rural areas after graduation, two to three times the proportion of family medicine residency graduates overall. Most of these physicians stayed in rural areas for at least three years.

- High proportions of RTT graduates provided health care in designated shortage areas, in safety-net facilities, and to underserved populations.
- Study findings suggest that RTT programs continue to succeed in recruiting and preparing family physicians for practice with rural and underserved populations. As policymakers encourage evidence-based practices to expand and enhance primary care, the RTT model may be worth replicating more broadly. At two national conclaves, RTT leaders have recommended several steps that RTT programs and their sponsoring institutions can take to improve their chances of success, including seeking new funding sources, expanding collaborations, seeking technical assistance, pursuing leadership development opportunities, sharing best practices, and participating in research to inform policy.

Background

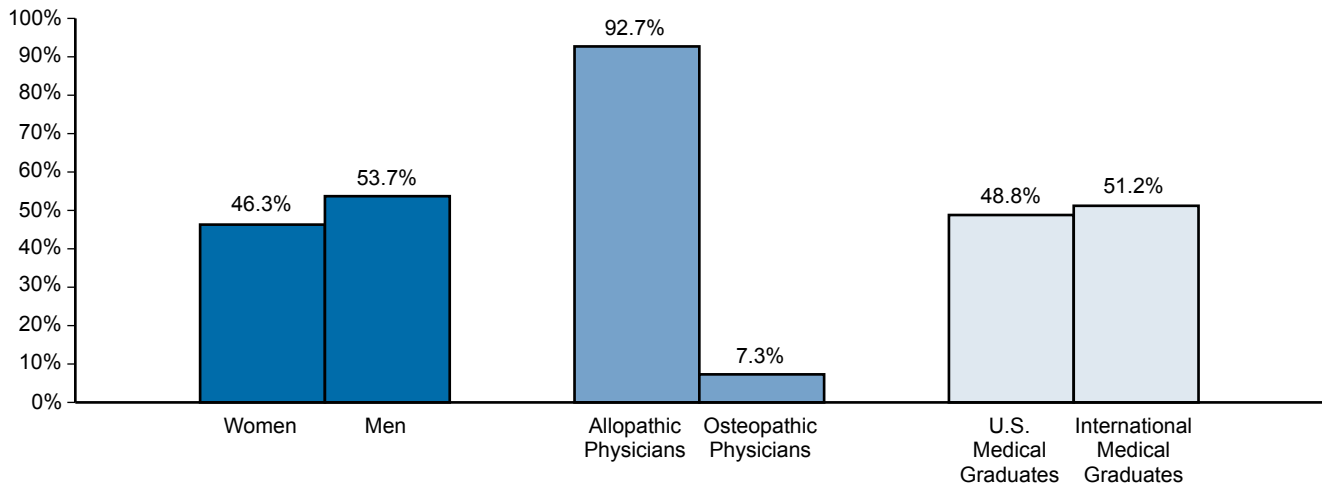
The proportion of matriculating medical students in 2012 who said they intended to practice in a small town or rural area was just 2.9%,² a number that has changed little in recent years.^{3,4} With rising patient demand due to an aging rural population and impending reforms that will increase access to health insurance, the well-documented shortage of rural physicians in the United States is likely to persist for years to come. To address this urgent need, a variety of family medicine residency programs seek to encourage and prepare physicians to engage in rural practice by providing training in rural areas. The “1-2” family medicine rural training track (RTT) model combines one year of urban training with two years of rural training. The Rural Training Track Technical Assistance Program (RTT TAP) has been funded by the federal Office of Rural Health Policy to bolster the 1-2 RTT strategy, which has proven successful in the past, graduating residents who favor rural practice at levels as high as 76%.^{5,6}

Data Sources

Prior to the RTT TAP, the last national evaluation of RTTs occurred more than 10 years ago.⁵ This policy brief uses new data from the 2011-12 academic year (an academic year runs from July 1 through June 30) to update a study that the RTT TAP conducted in 2012,¹ using the following data sources:

- **Survey of RTT Programs:** The RTT TAP surveyed all RTT programs active during the 2008 to 2012 time period that had graduated residents, representing 13 sponsoring institutions. Eighteen of 25⁷ programs responded (72%). RTT programs identified 123 physicians graduating from academic years 2007-08 through 2011-12. These data were used to track graduates’ practice over time with rural and underserved populations. RTT programs also provided data on the professional activity of 64 graduates at graduation (52% of graduates); data were missing for 59 graduates (48%).

Figure 1. Family Medicine Rural Training Track Residency Graduates, 2007-08 to 2011-12: Background Characteristics (N = 123)



Data sources: graduates identified by 18 RTT programs, AMA Masterfile, Robert Graham Center.

- **American Medical Association (AMA) Masterfile** data were used to identify practice locations of all RTT graduates from academic years 2007-08 through 2010-11; practice data on 2011-12 graduates were not available. Graduates were grouped based on dates of available AMA Masterfile data sets. Graduation year locations for rural/urban and Health Professions Shortage Area analyses were determined based on data sets representing periods from 0 to 0.5 years post-graduation (N = 79). Corresponding time periods for other groups were as follows: “One Year Post”—0.6 to 1.5 years post-graduation (N = 58); “Two Years Post”—1.6 to 2.5 years post-graduation (N = 84); “Three Years Post”—2.6 to 3.5 years post-graduation (N = 29).
- **American Board of Family Medicine (ABFM)** data were used to identify whether or not RTT graduates had achieved board certification.
- **Centers for Medicare & Medicaid Services (CMS)** claims data for 2009 were used to identify whether or not RTT graduates from academic years 2007-08 through 2008-09 were practicing in safety net facilities, including Critical Access Hospitals (CAHs), Rural Health Clinics (RHCs), and Federally Qualified Health Centers (FQHCs).

The Robert Graham Center matched graduates that RTT programs had identified in the survey with data from the AMA Masterfile, CMS, and ABFM. Rural/urban analyses used Rural-Urban Commuting Area (RUCA) codes.

Findings

The 18 RTTs in this study each graduated an average of 1.5 physicians per year. This rate of output is slightly lower than that of all RTTs nationwide, which average closer to 2 new physicians per program annually.⁸

Who Are Family Medicine RTT Residency Program Graduates?

Demographics: As Figure 1 shows, a majority of RTT program graduates, 53.7%, were men, in contrast to family medicine graduates nationally, where men are a minority (45.1%).⁹ This pattern is consistent with the tendency of male generalist physicians to practice disproportionately in rural areas.¹⁰ RTT graduates ranged in age from 24 to 55 years, with a mean of 35.0 years. The mean age of all family medicine residents in 2011-12 was 30.5 years.¹¹ One would expect family medicine residents to be older in their year of graduation than all matriculated family medicine residents, but four additional years indicates that RTT graduates bring added life experience to the profession.

Undergraduate Medical Education: Nine of the 123 graduates, 7.3%, completed undergraduate medical education at osteopathic medical schools, and the remainder, 92.7%, at allopathic medical schools (Figure 1). About half of RTT graduates in this study, 51.2%, were international medical graduates (IMGs), compared with 37% of all family medicine residency graduates who were IMGs in 2011-12 (Figure 1).¹¹

Board Certification: Data from the ABFM showed that 81.0% of RTT graduates from 2007-08 and 2008-09 were board certified as of 2011. It is unknown how many recent RTT graduates will ultimately achieve certification.

Nationally, 85% of family physicians representing all graduation cohorts were board certified in 2009.¹²

Professional Activity

Teaching and Clinical Activities: Analyses of professional activity status are based on the 113 graduates identified by RTT programs with complete data on teaching and clinical activities. After graduation, 16.8% of RTT graduates during the study period were engaged in teaching: 73.7% of those engaged in teaching had joined RTT program faculties while 26.3% had joined faculties elsewhere (60% in rural areas as defined by Rural-Urban Commuting Areas [RUCA] codes). RTT programs reported that 72.6% of graduates were engaged in clinical practice, a proportion similar to the 77.0% of graduates in clinical practice according to the AMA Masterfile (77 of 100 graduates with practice data).

Geographic Locations: According to AMA Masterfile data, by 2012, 77 of the 106 physicians graduating from 2007-08 through 2010-11 (72.6%) were practicing in the 13 states of the RTT programs in this study; the remainder were located in 20 other states. RTT programs were able to identify ZIP codes where graduates began clinical practice at graduation for 64 graduates (52% of the total sample of 123) from 2007-08 through 2011-12. Of these graduates, 71.9% began clinical practice in rural areas. RTT programs also reported the locations of their 2007-08 and 2008-09 graduates three years after graduation, if known. These data suggest some migration away from rural, with 60.6% of graduates in rural areas (20 of 33 graduates with available data).¹³

The AMA Masterfile also allowed tracking of graduates up to three years post-graduation, the latest year for which data were available.¹⁴ These data show that graduates from 2007-08 through 2010-11 who initially chose rural practice

mostly remained in rural locations (Figure 2): about half of RTT graduates practiced in rural areas in the year of graduation, declining just slightly to 44.8% by three years post-graduation. The reason for differences between data obtained from RTT programs and the AMA Masterfile is unknown,¹⁵ but the two sets of results provide high and low estimates of rural practice post-graduation.

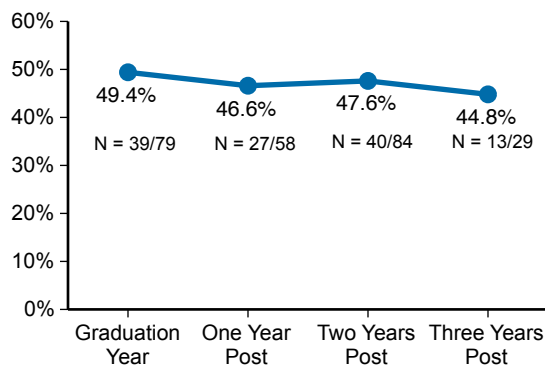
Shortage Area and Underserved Practice: RTT graduates provided substantial service to shortage areas and underserved populations. In the year of graduation, 41.8% of graduates practiced in primary care Health Professionals Shortage Areas (HPSAs), declining to 27.6% three years post-graduation (Figure 3). Nearly half of graduates (48.1%) practiced in FQHCs, RHCs, or CAHs. As Figure 4 shows, most of these graduates were in rural-serving CAHs and RHCs.

Implications

The estimated number of RTT program graduates who practice in rural communities is two to three times higher than all family medicine residency graduates (22% overall practice in non-metropolitan areas¹⁶). Furthermore, the majority of RTT graduates who chose rural locations initially remained in rural locations over the next two or three years for which data are available. These analyses also showed a high proportion of RTT graduates providing care in designated shortage areas, in safety net facilities, and to underserved populations.

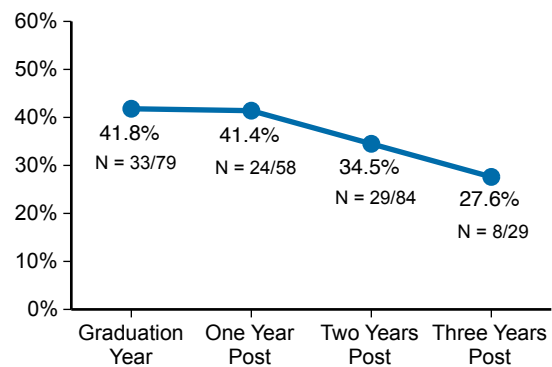
Others have noted the difficulty of evaluating RTT programs, where due to their small numbers, the choices of a handful of graduates in one year can obscure more fundamental longer-term trends.⁵ Our baseline results,

Figure 2. Family Medicine Rural Training Track Residency Graduates, 2007-08 to 2010-11: Proportion Practicing in Rural Areas



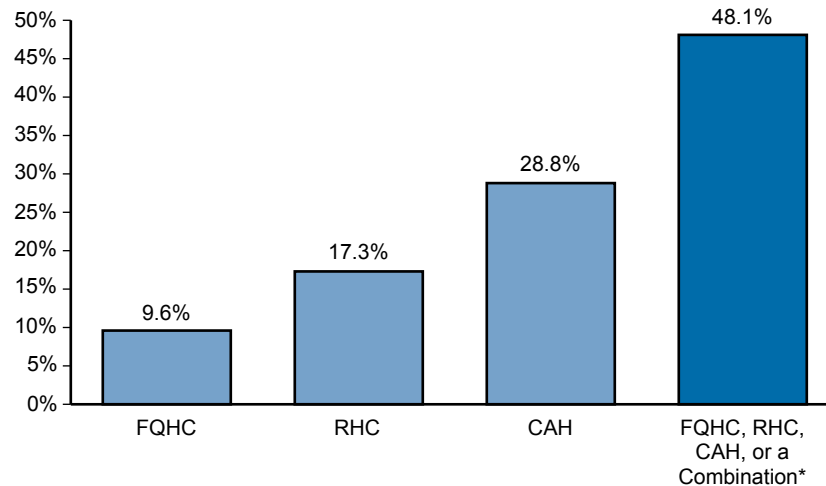
Data sources: graduates identified by 18 RTT programs, AMA Masterfile, Robert Graham Center; rural as defined by Rural-Urban Commuting Areas.

Figure 3. Family Medicine Rural Training Track Residency Graduates, 2007-08 to 2010-11: Proportion Serving HPSAs



Data sources: graduates identified by 18 RTT programs, AMA Masterfile, Robert Graham Center.

Figure 4. Family Medicine Rural Training Track Residency Graduates, 2007-08 to 2008-09: Proportion Practicing in FQHCs, RHCs, and CAHs in 2009 (N = 52)



* Some practice in more than one facility type.

Data sources: graduates identified by 18 RTT programs, CMS, Robert Graham Center.

showing that a high proportion of RTT graduates choose rural and underserved practice, are broadly consistent with Rosenthal's findings⁵ just over ten years ago. The RTT TAP plans to continue tracking the outcomes of RTT programs with a larger sample size and longer-term data. In addition, the federal Office of Rural Health Policy has funded a new project through its Rural Health Research Center program to examine a wider array of rural-focused family medicine residency programs and their outcomes. In this small study, numerous other questions also remain unanswered. For example, research is needed to understand the extent to which background characteristics, such as gender or country of undergraduate medical training, influence these patterns. Only sustained data collection and analysis over time can provide the information needed to confirm or fully contextualize the findings reported here.

Nevertheless, these baseline results point to the continuing success of RTTs at recruiting and preparing family physicians for rural practice with populations who might otherwise have limited access to healthcare. As policymakers continue to focus on evidence-based practices to expand and enhance primary care, the RTT model may be worth replicating more broadly. RTT leaders, interacting at the two national conclaves sponsored by the RTT TAP grant,

have proposed several options¹⁷ to improve their chances of success. RTTs and the institutions that sponsor them, with appropriate technical assistance, can:

- Pursue new funding sources, for example, from foundations or from rural communities that seek to align patient care, health professional recruitment and education, and economic development initiatives.
- Collaborate with FQHCs (or Look-Alikes), RHCs, rural hospitals, Area Health Education Centers, and state offices of rural health to create new RTTs.
- Seek technical assistance to meet regulatory obligations.
- Improve medical student recruitment by increasing awareness of RTT programs, facilitating visits and interviews, and partnering with medical schools.
- Take advantage of opportunities for program director and faculty development.
- Share best practices and engage in residency performance improvement activities through networking among RTT directors, faculty, and residency coordinators.
- Participate in data collection, research, and evaluation activities that improve the evidence base on RTTs to inform policy.

Notes

1. Patterson DG, Longenecker R, Schmitz D, Xierali IM, Phillips Jr RL, Skillman SM, Doescher MP. *Policy Brief: Rural Residency Training for Family Medicine Physicians: Graduate Early-Career Outcomes*. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2012.
2. Association of American Medical Colleges. *AAMC Matriculating Student Questionnaire: 2012 All Schools Summary Report*. Available at: <https://www.aamc.org/download/323378/data/msq2012report.pdf>. Accessed January 8, 2013.
3. Rabinowitz HK, Diamond JJ, Markham FW, Wortman JR. Medical school programs to increase the rural physician supply: a systematic review and projected impact of widespread replication. *Acad Med*. Mar 2008;83(3):235-243.
4. 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.
5. Rosenthal TC. Outcomes of rural training tracks: a review. *J Rural Health*. Summer 2000;16(3):213-216.
6. Patterson DG, Longenecker R, Schmitz D, Skillman SM, Doescher MP. *Policy Brief: Training Physicians for Rural Practice: Capitalizing on Local Expertise to Strengthen Rural Primary Care*. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; 2011.
7. There were 21 active RTT programs at the time of writing; 2 closed in 2012, 1 converted to a “4-4-4” program. Three new RTTs have been accredited to begin in 2013, and a fourth program is scheduled to begin pending accreditation review this month.
8. Based on unpublished data collected from RTTs by author Longenecker.
9. National statistics are based on graduates whose gender was reported: *ACGME Data Resource Book, Academic Year 2011-2012*. Available at: http://www.acgme.org/acgmeweb/Portals/0/PFAssets/PublicationsBooks/2011-2012_ACGME_DATABOOK_DOCUMENT_Final.pdf. Accessed January 7, 2013.
10. Doescher MP, Ellsbury KE, Hart LG. The distribution of rural female generalist physicians in the United States. *J Rural Health*. Spring 2000;16(2):111-118.
11. Accreditation Council for Graduate Medical Education. *ACGME Data Resource Book, Academic Year 2011-2012*. Available at: http://www.acgme.org/acgmeweb/Portals/0/PFAssets/PublicationsBooks/2011-2012_ACGME_DATABOOK_DOCUMENT_Final.pdf. Accessed January 7, 2013.
12. Xierali IM, Rinaldo JC, Green LA, et al. Family physician participation in maintenance of certification. *Ann Fam Med*. May-Jun 2011;9(3):203-210.
13. Rural as defined by Rural-Urban Commuting Area (RUCA) codes.
14. Due to the small numbers, particularly three years post-graduation (the 2008-09 cohort only), these statistics should be viewed with caution.
15. Differences between data from RTT programs and AMA may reflect sample differences (RTTs did not report where nearly half of graduates began practice at graduation), inaccuracies in either or both data sources, discrepancies between data sources in the timing of data collection, or a combination of these factors.
16. American Academy of Family Physicians. Facts about family medicine, Table 4. Practice profile of family physicians by family medicine residency completion, December 31, 2008. Available at: <http://www.aafp.org/online/en/home/aboutus/specialty/facts/4.html>. Accessed January 19, 2012.
17. For a discussion of recommendations endorsed by the American Academy of Family Physicians and the National Rural Health Association, see *Graduate Medical Education for Rural Practice*. Available at: http://www.aafp.org/online/etc/medialib/aafp_org/documents/about/rap/curriculum/ruralgme.Par.0001.File.tmp/Reprint289A.pdf. Accessed January 25, 2012.

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For More Information

Web site: <http://www.raconline.org/rtt/>

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