

## Family Medicine Rural Training Track Residencies: 2008-2015 Graduate Outcomes

This policy brief is the latest in a series,<sup>1,2</sup> tracking the practice outcomes of family physicians who have completed graduate medical education (GME) in Rural Training Track (RTT) residency programs. We report the following key findings using new trend data on graduates' practice locations:

### Key Points

- Family medicine RTT residency programs train physicians for practice in rural areas, which face a persistent shortage of primary care providers.
- In the seven years that RTT graduates were tracked after graduation (2008-2015), more than 35% of graduates were practicing in rural areas during most of that time, about twice the proportion of family medicine residency graduates overall. Rural practice choices were also persistent over time.
- A majority of graduates from RTT programs in this study were men, and about half completed undergraduate medical training outside the United States and Canada.
- 56% of RTT graduates provided health care in primary care Health Professional Shortage Areas (HPSAs) one year post-graduation and by seven years post-graduation, 50% were still in primary care HPSAs.
- Study findings suggest that graduates of RTT programs provide care to rural and underserved populations at higher proportions than family medicine residency graduates overall, and these practice choices persist over time.
- As policymakers encourage evidence-based practices to expand and enhance primary care, the RTT model may be worth replicating more broadly.

### Background

The proportion of matriculating allopathic medical students in 2015 who said they intended to practice in a community of 10,000 or smaller population, including small towns and rural areas, was just 4.6%, a decline from 5.2% in 2013 and 2014.<sup>3</sup> Just 9% of physicians practice in rural areas, despite the fact that rural populations are almost 20% of the total U.S population.<sup>4,5</sup> Increased access to health insurance through the Affordable Care Act (ACA) combined with an aging rural population raise concerns about rising health care demand worsening shortages in rural communities. The "1-2" family medicine rural training track (RTT) model prepares physicians for rural practice by combining up to one year of urban training with two years of rural training. The Rural Training Track Technical Assistance (RTT TA) Consortium has been funded for over five years 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%.<sup>6,7</sup>

### Data Sources

This policy brief adds new data from surveys of RTT program coordinators and directors in 2013 and 2015 to update a study that the RTT TA Consortium conducted in 2012,<sup>1</sup> using the following data sources:

- **Survey of RTT Programs:** The RTT TA Consortium has conducted four surveys from 2011 through 2015<sup>8</sup> of all RTT programs that were active at any time from 2007 through 2015 and that had graduated residents, a total of 42 RTTs.<sup>9</sup> Twenty-eight (67%) programs responded to at least one survey. Twenty-one RTT programs identified 253 physicians graduating from

July 2007 through June 2015.<sup>10</sup> These data were used to track graduates' practice over time in rural locations and primary care Health Professional Shortage Areas (HPSAs).

- National Plan and Provider Enumeration System<sup>11</sup>**  
 National Provider Identifier (NPI) data were used to identify practice locations of all RTT graduates (from programs that provided them via surveys) from July 2007 through June 2015. Graduates were grouped into cohorts based on calendar year of graduation, 2008 through 2015 (a small number of graduates from July-December 2007 are grouped with the 2008 cohort). The Robert Graham Center matched graduates that RTT programs had identified in the survey with practice addresses from the NPI data. Practice addresses were geocoded using ArcGIS software, and classified as urban or rural using Rural-Urban Commuting Area (RUCA) codes<sup>12</sup> and as being located in a primary care HPSA or not.
- American Medical Association (AMA) Physician Masterfile:** Graduates were matched to AMA Physician Masterfile data at three time points: December 2013, December 2014, and February 2016. Practice locations were classified as urban or rural using RUCA codes.<sup>12</sup> The AMA Physician Masterfile also provided data on gender, age, and undergraduate medical school.

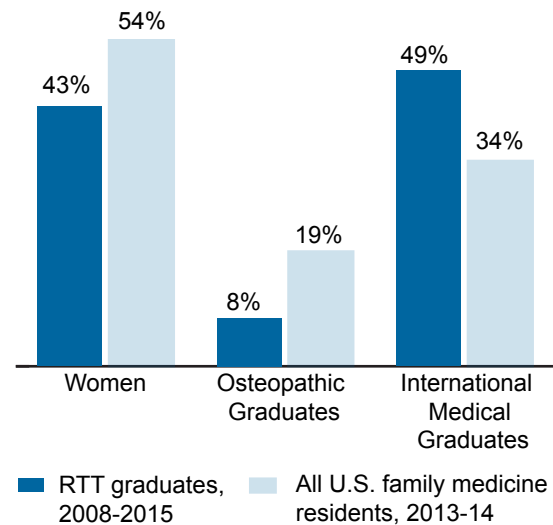
## Findings

### Who Are Family Medicine RTT Residency Program Graduates?

**Demographics:** As Figure 1 shows, a minority of RTT program graduates, 43%, were women, in contrast to family medicine residents nationally in 2013-14, where women were a majority (54%).<sup>13</sup> In the year of residency graduation, RTT graduates ranged in age from 27 to 55 years, with a mean of 35.0 years, compared with a mean age of 30.3 years in 2013-14 for all family medicine residents.<sup>13</sup> One would expect family medicine residents to be older in their year of graduation than all matriculated family medicine residents, but this comparison suggests that RTT residents had at least three more years of life experience on average than all family medicine residents.

**Undergraduate Medical Education:** Twenty of the 253 graduates, 8%, completed undergraduate medical education at osteopathic medical schools, compared with 19% of all family medicine residents in 2013-14 (Figure 1). About half of RTT graduates in this study, 49%, were international medical graduates (IMGs), compared with 34% of all family medicine residency graduates who were IMGs in 2013-14 (Figure 1).<sup>13</sup>

**Figure 1. Background Characteristics of Rural Training Track Residency Graduates (2008-2015, n = 253) vs. All U.S. Family Medicine Residents (2013-14)**



### Practice Locations

**Rural Practice:** The NPI data also allowed tracking of graduates up to seven years post-graduation, the latest year for which data were available. These data show that graduates from 2008 through 2014 who initially chose rural practice tended to remain in rural locations (Figure 2): about one third (32.8%) of RTT graduates practiced in rural areas one year post graduation, increasing in most years to above 35% through seven years post-graduation, showing a highly stable yield to rural practice. The results obtained in a separate analysis using AMA Physician Masterfile (not shown) data found differences in individual years, but overall, similar proportions of RTT graduates were in rural practice (in 6 of the 7 post-graduation years, proportions ranged from 32.3% to 40.0%, with most above 35%).

**Shortage Area Practice:** RTT graduates provided substantial service to shortage areas. At one year post-graduation, 56.4% of graduates practiced in primary care Health Professionals Shortage Areas (HPSAs), declining only modestly to 50.0% seven years post-graduation (Figure 3).

**Implications**

The estimated proportion of RTT program graduates who practiced in rural communities from 2008 through 2015 is about twice the proportion of all allopathic family medicine physicians in rural practice (17.5% of members of the American Academy of Family Physicians practice in non-metropolitan areas<sup>14</sup>). Furthermore, the majority of RTT graduates who initially chose rural locations remained in rural practice over the seven years for which data were available. Results obtained using two different data sources, NPI and AMA data, were consistent overall, lending strength to the conclusion that rural practice choices were persistent over the seven-year time period of this study.

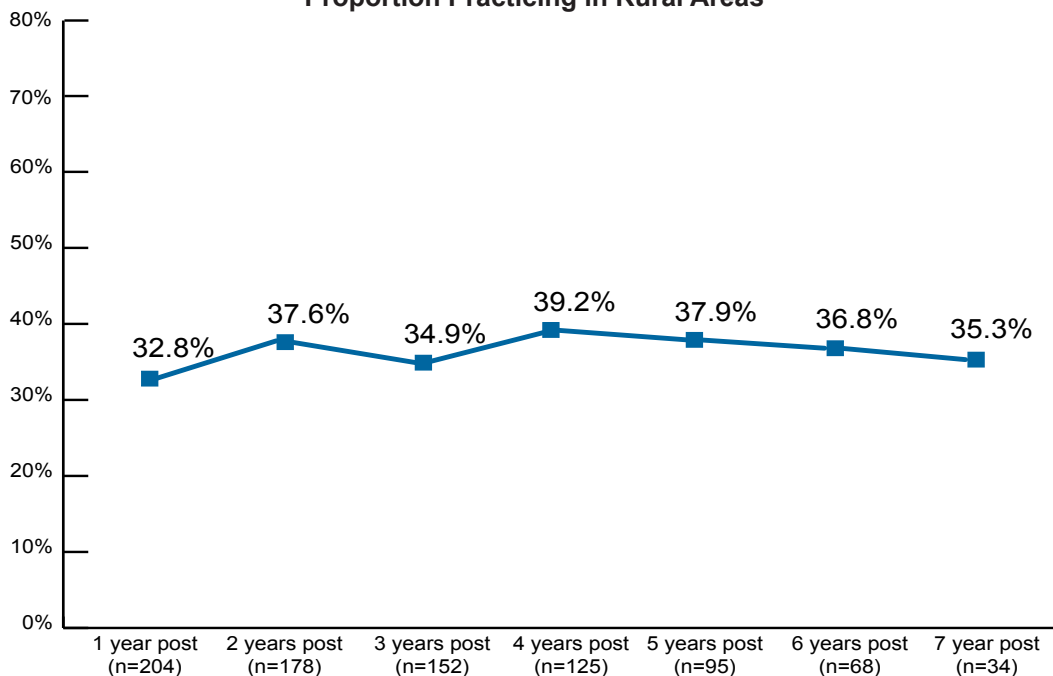
These analyses also showed a high proportion of RTT graduates—50% or more—providing care in federally-designated shortage areas, and this practice choice persisted over the seven-year time period. We do not know how many RTT graduates received incentives to practice in primary care HPSAs, such as through the National Health Service Corps or J-1 visa waiver programs, but it is noteworthy that practice in HPSAs persisted even beyond the period where the impact of incentives would likely have ended.

The database of physicians that the RTT TA Consortium has developed, a valuable resource that can be used for continued tracking into the future, will require updating at regular intervals to understand the long-term career trajectories of RTT graduates. Nevertheless, our results overall 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 health care. As policymakers 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 five national meetings sponsored by the RTT TA Consortium grant, have proposed several options<sup>15</sup> to improve their chances of success. RTTs and the institutions that sponsor them, working together through the community of practice that has been established through the RTT TA Consortium, can:

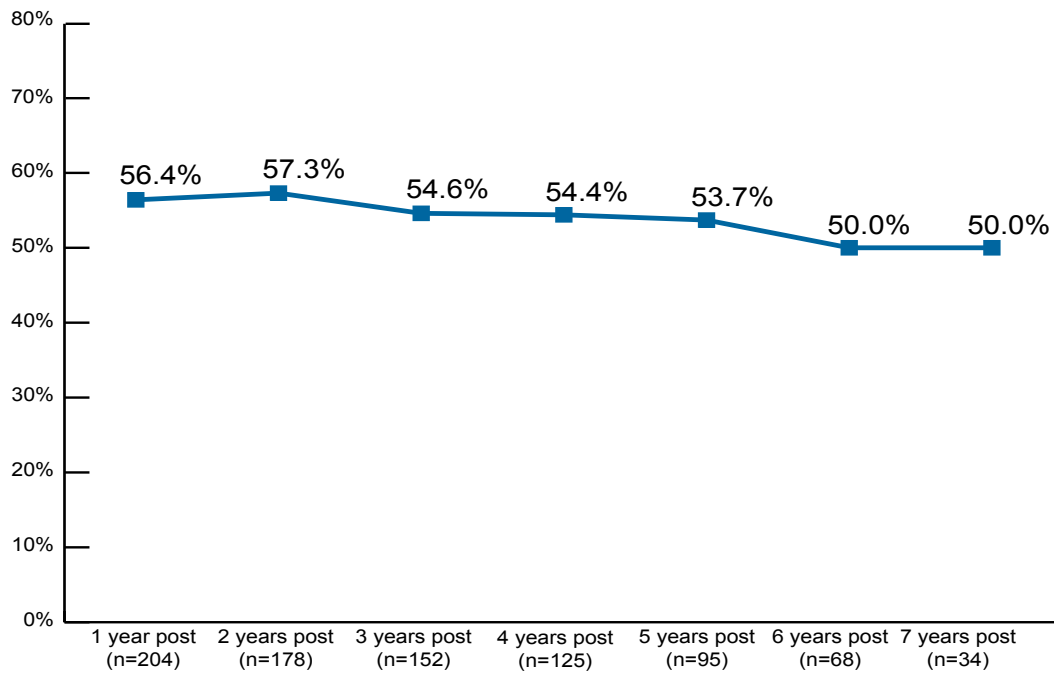
- Pursue new funding sources, for example, from foundations or from rural communities that seek to align patient care, health professional recruitment and education, and economic development initiatives.

**Figure 2. Family Medicine RTT Residency Graduates (2008-2014): Proportion Practicing in Rural Areas**



Data sources: graduates identified by 21 RTT programs, NPI business practice location address ZIP codes classified by Rural-Urban Commuting Areas.

**Figure 3. Family Medicine RTT Residency Graduates (2008-2014): Proportion Practicing in Primary Care Health Professionals Shortage Areas (HPSAs)**



Data sources: graduates identified by 21 RTT programs, NPI business practice location address ZIP codes, Robert Graham Center.

- Collaborate with Federally Qualified Health Centers (or Look-Alikes), Rural Health Clinics, rural hospitals, Area Health Education Centers, and state offices of rural health to create new RTTs
- Seek technical assistance to optimize reimbursement, continuously improve, and maintain full accreditation.
- 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 education 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, Phillips RL Jr, Skillman SM, Doescher MP. Policy brief: rural residency training for family medicine physicians: graduate early-career outcomes, 2008-2012. Seattle, WA: WWAMI Rural Health Research Center, University of Washington; Jan 2013.
2. 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; Jan 2012.
3. Association of American Medical Colleges. AAMC Matriculating Student Questionnaire: 2015 All Schools Summary Report. Available at: <https://www.aamc.org/data/msq/>. Accessed January 19, 2016.
4. 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.
5. 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.
6. Rosenthal TC. Outcomes of rural training tracks: a review. *J Rural Health.* Summer 2000;16(3):213-216.
7. 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.
8. Surveys were conducted in 2011, 2012, 2013, and 2015.
9. There were 38 active RTT programs at the time of writing; 2 closed in 2012, 1 closed in 2013, and 1 converted to a “4-4-4” program.
10. Six programs were too new to have graduated any residents during the study period; one program that has graduated residents responded to the survey and did not identify any graduates.
11. The Centers for Medicare & Medicaid Services (CMS) National Plan and Provider Enumeration System (NPPES). <https://nppes.cms.hhs.gov/NPPES/>. Accessed February 17, 2016.
12. RUCA codes considered rural included 4.0, 4.2, 5.0, 5.2, 6.0, 6.1, 7.0, 7.2, 7.3, 7.4, 8.0, 8.2, 8.3, 8.4, 9.0, 9.1, 9.2, 10.0, 10.2, 10.3, 10.4, 10.5, and 10.6 (<http://depts.washington.edu/uwruca/ruca-uses.php>). For 2008 and 2009 practice locations, the 2004 RUCA codes (version 2.0) were used, and for 2010-2015, the 2010 RUCA codes were used (version 3.1: <https://ruralhealth.und.edu/ruca>).
13. Accreditation Council for Graduate Medical Education. Data Resource Book: Academic Year 2013-2014. <https://www.acgme.org/acgmeweb/tabid/259/Publications/GraduateMedicalEducationDataResourceBook.aspx>. Accessed February 15, 2016.
14. American Academy of Family Physicians. Facts about family medicine, Table 2: Selected Demographic Characteristics of AAFP Members (as of January 5, 2015). <http://www.aafp.org/about/the-aafp/family-medicine-facts/table-2.html>. Accessed December 14, 2015.
15. 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*: [www.aafp.org/dam/AAFP/documents/medical\\_education\\_residency/program\\_directors/Reprint289A\\_Rural.pdf](http://www.aafp.org/dam/AAFP/documents/medical_education_residency/program_directors/Reprint289A_Rural.pdf). Accessed January 20, 2016.

**For More Information**

Web site: <https://www.ruralhealthinfo.org/rtt>

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**Other Policy Briefs  
from the RTT Technical Assistance Program**

***Training physicians for rural practice: capitalizing on local expertise to strengthen rural primary care.*** Patterson DG, Longenecker R, Schmitz D, Skillman SM, Doescher MP. Seattle, WA: WWAMI Rural Health Research Center, University of Washington. Jan, 2011.

***Rural residency training for family medicine physicians: graduate early-career outcomes.*** Patterson DG, Longenecker R, Schmitz D, Xierali IM, Phillips Jr RL, Skillman SM, Doescher MP. Seattle, WA: WWAMI Rural Health Research Center, University of Washington. Jan, 2012.

***Rural residency training for family medicine physicians: graduate early-career outcomes, 2008-2012.*** Patterson DG, Longenecker R, Schmitz D, Phillips RL Jr, Skillman SM, Doescher MP. Seattle, WA: WWAMI Rural Health Research Center, University of Washington. Jan, 2013.

***Graduate medical education financing: sustaining medical education in rural places.*** Patterson DG, Schmitz D, Longenecker R, Squire D, Skillman SM. Seattle, WA: WWAMI Rural Health Research Center, University of Washington. May, 2015.

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