A Qualitative Study of Medical Students in a Rural Track:

Views on Eventual Rural Practice

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BACKGROUND: Rural tracks (RTs) exist within medical schools across the United States. These programs often target those students from rural areas and those with primary care career interests, given that these factors are robust predictors of eventual rural practice. However, only 26% to 64% of graduates from RTs enter eventual rural practice.

METHODS: We conducted a qualitative, exploratory study of medical students enrolled in one school's RT, examining their interests in rural training, specialization, and eventual rural practice, via open coding of transcripts from focus groups and in-depth individual interviews, leading to identification of emerging themes.

RESULTS: A total of 16 out of 54 eligible first- and second-year preclinical medical students participated in focus group sessions, and a total of seven out of 17 eligible third- and fourth-year medical students participated in individual interviews. Analyses revealed the recognition of a "Rural Identity," typical characteristics, and the importance of "Program Fit" and "Intentions for Practice" that trended toward family medicine specialization and rural practice. However, nuances within the comments reveal incomplete commitment to rural practice. In many cases, student preference for rural practice was driven largely by a disinterest in urban practice.

CONCLUSIONS: Students with rural and primary care practice interests are often not perfectly committed to rural practice. However, RTs may provide a haven for such students within medical school.

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Medical schools across the country are engaging in an effort to increase the supply of doctors in underserved rural areas by means of rural tracks (RTs).[1] Many studies have shown that despite their relatively small size, RTs can have a significant effect in increasing the supply of primary care doctors and rural family physicians.[2-13] A secondary benefit of RTs is a possible increase of trainees settling on primary care generally, or family medicine in particular, as a specialty choice.[3,8-10,12,14,15] For example, Quinn and colleagues found rurally trained students were more than twice as likely to match into family medicine residency and enter primary care at rates significantly higher than nonparticipants. Further, over 57% of students who participated in the rural track program chose a rural location for their first practice.[12]

However, a student with primary care interest and a rural background may be targeted for admission and/or participate in a RT, but many, and in some cases, a majority, do not go on to practice in a rural area. Data from program evaluations suggest that eventual rural practice rates range from 26% in one study[9] to 53%–64% in one systematic review.[4] Although rural origin and stated primary care interest are strong predictors of eventual rural practice, they clearly do not account for all or even most of the variance in who enters rural practice and who does not.

For the current study, we examined first- and second-year medical students' (MS1 and MS2) reasons for participating in a RT program, and third- and fourth-year medical students' (MS3 and MS4) experiences

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of that program. We asked about the reasons students decided to pursue a RT program, about what they were thinking in terms of a future specialty and specialty location, as well as what would attract and dissuade them from practicing in a rural community. We utilized the qualitative data produced by these processes to identify emergent themes regarding factors that may be related to eventual practice decisions.

Methods

This exploratory, qualitative pilot study applied a brief ethnographic approach to examine facets of students' participation in a single institution's RT program, including their career goals and commitment to future practice location, style, and specialty. Applying the qualitative methods of focus group discussions coupled with in-depth individual interviews over time, researchers applied data gathered from one session to guide questions and discussions of successive focus group and interview sessions. The study was reviewed and approved by the Institutional Review Board of SUNY Upstate Medical University.

Intervention

The RT in question consists of the following elements:

Admissions Process. Students self-select to complete a supplemental application to the rural track when applying to the medical school; the supplemental application involves an additional essay, an interview with a faculty member associated with the RT, and screening for rural origins using Rural-Urban Commuting Area (RUCA) coding of the applicant's high school address; applicants to the medical school who also apply to the RT program have this supplemental information included in admission committee discussion by specifically appointed members. Applicants who gain acceptance to the medical school through this process are considered part of the rural track upon admission.

Preclinical Elective. Students in the rural track participate in a 2-year didactic rural health elective during the MS1 and MS2 years. The elective is taught interprofessionally with students from the same institution's physician assistant program and involves a monthly meeting with invited speakers and didactic lectures from faculty as well as participation in social media based and traditional assignments.

Clinical Training. Students who opt to continue in the track during clinical training self-select either a 9-month longitudinal placement where they complete three clerkships (family medicine, surgery, and emergency medicine) and 5 months of elective time or a relatively new, shorter placement where they focus on completing the clerkships only. In either case, students remain in the same community for the duration of training, typically conducted with the cooperation of a single community hospital.

Participants. Participation in the study was open to any student currently taking part in either the preclinical or clinical phases of the RT. Four cohorts of medical students (MS1–MS4) were eligible for this pilot study. The students were invited to participate via email and were informed that participation was voluntary. Lunch was provided for the focus groups sessions and the individual interviews. No further reimbursement was provided.

Eligibility by student cohorts included: 30 MS1s, 24 MS2s, 13 MS3s, and 4 MS4s. Institutional policy changes that provided preferential admission to in-state, rural students between the admittance of MS3 and MS2 students, coupled with greater marketing of the RT program, likely played a role in increasing the number of students selecting into the RT program. In the final sample, nine MS1s and seven MS2s from the preclinical elective participated in one of three focus group sessions; five MS3 students and two MS4 students from the clinical training participated in individual interviews. This final sample included nine male and 14 female students. The breakdown of student characteristics is illustrated in Table 1.

Data Collection and Analysis

Researchers began collecting data with MS3 and MS4 students. Interviews were conducted between October 2011 and May 2012. These interviews were held at students' off-site clinical locations during a regularly scheduled site visit. The researcher accompanied program staff to the site and participated in a set schedule of events. These events included either a shadowing visit for third-year students or a presentation of grand rounds by fourth-year students. At the conclusion of these activities, the researcher privately interviewed each student using a semi-structured interview guide. The interviews lasted between 45 minutes to just over an hour; data were captured using a digital recorder and transcribed verbatim into a Microsoft Word document by a researcher or assistant.

Researchers held three focus group sessions for MS1 and MS2 students between October 2012 and November 2012. The group discussions were held on-site at the host institution using a semi-structured discussion guide. Before each focus group session, students were asked to complete a single page survey asking questions related to their demographic information, the likelihood they would continue in the RT program, if they anticipated practicing in a rural community, a six-scale item gauging how important certain factors were in considering their careers in medicine, and their top three specialty choices. Sessions lasted between 30 minutes to an hour; data were captured using a digital recorder and transcribed verbatim into a Microsoft Word document by a researcher or assistant.

Full transcripts from each interview and focus group session were coded openly by two study authors;

Table 1: Demographic Characteristics of Participants

	Participants (n=23)
Cohort	
MS4	2 (9%)
MS3	5 (22%)
MS2	7 (30%)
MS1	9 (39%)
Gender	
Male	14 (61%)
Female	9 (39%)
Method	
Individual interviews (MS3 and MS4)	7 (30%)
Focus Group Session 1 (MS1)	3 (13%)
Focus Group Session 2 (MS2)	7 (30%)
Focus Group Session 3 (MS1 and MS2)	6 (26%)
MS1 and MS2 student questionnaire results (n=16, given ahead of focus groups)	
Do you anticipate working in a rural community?	
Definitely yes	2 (13%)
Probably yes	12 (75%)
Probably no	1 (6%)
Definitely no	0 (0%)
Unsure	1 (6%)
Top specialty choice	
Family medicine	10 (63%)
Pediatrics	2 (13%)
Emergency medicine	1 (6%)
Endocrinology	1 (6%)
PM+R	1 (6%)
Psychiatry	1 (6%)

codes were grouped into similar concepts or themes and, from those emerging themes, the research team derived a meaningful interpretation of the data.[16] This iterative immersion/crystallization method of analysis[17] is consistent with phenomenological methods. This process was conducted in real-time, with the two authors comparing observations in an ongoing process. Data collection ceased when (1) recruitment slowed and (2) when emerging codes and themes became redundant, indicating data saturation. Upon reaching saturation, researchers compared and combined their respective analyses in entirety. By having authors immerse themselves into the data separately then come together to reflect on their opinions of the data, new interpretations were created to ensure trustworthiness and credibility of results.

Data from questionnaires administered ahead of each preclinical student focus group session were entered into a spreadsheet, and a descriptive analysis was conducted using a basic data pivot. Data regarding students' sex, anticipation to work in a rural community, and top specialty choice were the focus data points for this analysis.

Results

Sixteen of 54 eligible preclinical (MS1-2) students voluntarily attended one of three focus group sessions held on-site. Seven of 17 MS3–4s agreed to participate in a one-on-one interview conducted during a regularly scheduled clinical site visit. Among both cohorts, some disclosed they chose the host institution particularly for the rural training track program; however, financial considerations were deemed most critical when they selected medical school. Students predominately self-identified as white, middle class, native New Yorkers, and many grew up in rural communities. A common thread stemming from the analysis was students' romantic images of rural life and how their notions and experiences of small town life had implications for their medical school training choices and intentions for future practice.

Three major themes emerged from the data. The existence of a "rural identity" among participants was articulated by participants, a consequent "program fit" was described, and students' "intentions for future practice" clearly played a role in their decision to participate in the RT.

Rural Identity

A majority of participants described growing up in small towns, or spending long periods of time in small towns, warranting the thematic category "rural identity." Study participants illustrated the identity through their romantic images of small town life as they described activities inherent to the rural lifestyle they shared with one another. Participants presented a predilection toward green spaces, dark nights, and outdoor activities including skiing, camping, and hiking. According to participants, such activities set them apart from their suburban/urban classmates who may have participated in such activities growing up though they were not necessarily essential components of their childhood. For example, one student

remarked that cutting wood for the family's stove was a necessary chore not likely shared by their suburban/urban counterparts. Other examples were ice skating on ponds, churning butter and making candles for 4H, and raising animals. Exemplar quotes of the "rural identity" description are presented in Table 2.

Rural Training Track—Program Fit

The rural identity theme carried over into students' descriptions of program fit. From the students' perspective, a successful RT student would not be overly concerned with grades or competing with their peers; they would be independent learners and students with a high level of maturity and self-reliance.

MS1–2 students found their introductory course in rural health to be a "breath of fresh air" or a respite from the competitiveness associated with medical school training. Referring to the course, one student remarked:

> It's like the promise that you can do good with medicine, and it's not just all about, 'What did you get on your test?' You just sort of escape that.

Through the process of self-selection, the program appeared to successfully group students with shared views of the learning process that connected them to one another through meaningful exploration of future work in lieu of struggling towards perfection through competition, testing, and grades. Describing the elective course, one student observed:

> The part I enjoy the most is the social break, like being able to connect with people with similar interests.

MS3–4 students' descriptions of program fit focused more on the practicalities of living and training in off-site, rural communities. Most students expected to feel isolated from their friends and family, but separation from their peers was, for some, challenging. One student remarked:

> There's a lot of pressure about what a normal medical student does and you worry if you are on track.

Students disclosed keeping in touch with their peers and particularly their fellow RT members at other sites via text messaging to compare and contrast their experiences. Many reported that they would connect with one another by way of their shared experiences growing up in a small town where everyone knew one another and had an affinity for outdoor activities. Students were likely to connect with the RT program because the elective course reminded them of their shared values for community service. Their small-group interactions provided a break from the traditional competitiveness and drive toward perfection inherent to the culture of traditional medical school training.

The upside of their isolation, according to MS3–4 students, was the opportunity for individualized learning and/or for taking on a greater level of responsibility. MS3–4 students were expected to "jump right in and learn in the thick of it." They described receiving unparalleled, focused attention—similar to an apprenticeship. Some remarked how clinical lessons were supplemented by informal lessons unique to providing care in today's social and financial climate, including business management tips, issues related to serving under-resourced patients, and working within the confines of health insurance programs.

Once students began training in their rural locations, an echo of the rural identity surfaced insofar as RT students became an integral part of that site's community. Respondents reported that rural preceptors immediately sought their assistance and that students were expected to learn through participation. They described receiving unparalleled access to cases and responsibility that could take an emotional toll as they were practicing skills and taking on more work than their traditional student counterparts.

Students reported having many opportunities to practice continuity of care as a result of the longitudinality of the RT. As one student summarized:

Table 2: Theme 1—Rural Identity

Subtheme	Exemplar Quotations
Small town upbringing	• My friends were always right there, and I knew just about everyone in my town. I went to a small school so you knew everyone. • When we were kids you went outdoors. You went snowmobiling. You went hiking. You went fishing. You went hunting. You went four-wheeling. You did all of those things. Whereas a lot of my friends from the city, they have done some of those things but they specifically go to a place for that. When you are growing up as a kid you do that stuff because that's what you do.
Small town imagery	• Once I lived in a small town, I realized that's where I belonged. I loved the rural lifestyle and everything about it. It was dark at night and quiet and just being close to the mountains, all those things appeal to me. • A lot of us love the outdoors. We love being able to go outside. At night, it's completely dark; there are no street lights where I come from.

> You see this great scope of ages and perform a great scope of services from prevention for children, adults, and the elderly to performing acute care and managing chronic care.

However, some worried they were missing opportunities to see exotic, complicated cases but reconciled this limitation with the recognition that compared to traditional medical students, RT students had the opportunity to participate in a greater number of typical cases. Some students found that such responsibility took a level of confidence and maturity. As an MS3 student summarized:

> You have to have an emotional maturity or a range of life experiences to draw on to be able to deal with some of the situations you are put in because you can't hide.

Additional quotes representing "program fit" are presented in Table 3.

Intentions for Future Practice

From many of the focus groups and interview discussions, students spoke of their career paths in terms of giving back and serving as leaders in their communities. A good example comes from an MS1 student, who stated:

> I don't want to be the doctor who gets a patient's chart and hands it over to someone else and never sees them again. That's not the way I grew up. My doctor's office was at the end of my road. I babysat her kids. They were very integrated into the community, and that's definitely how I want to be.

Time and again, students described the desire to have strong bonds with their patients and talked about knowing their patients outside of the clinical setting as they engaged members of their respective communities.

For some students, there was "no place like home" insofar as they expected to return to their rural hometowns as practitioners. One respondent stated:

> As far as I'm concerned, having a family in the place where I grew up is ideal.

Another student stated:

> I love the way I grew up, and I am married so I want my kids to be able to have that—to be able to grow up in that sort of environment.

Researchers asked MS1–2 students about their intentions for future practice in the student questionnaire given at the start of the focus group sessions. To the question, "Do you anticipate working in a rural community?" 88% of MS1–2 students selected "definitely yes" or "probably yes" (13% and 75%, respectively). One student selected "probably no," another selected "unsure," while no students selected "definitely no" to the question. During focus group discussions, however, MS1–2 students appeared more reluctant to confirm their intentions to practice in a rural area. Though raising a family in a small town was ideal, it was not necessarily practical. Calculations from focus group transcripts suggest a little over a third of students, or 35%, indicated an expectation to eventually practice in a rural community, while 48% were unsure or not yet committed to rural practice. During interviews, MS3–4 students were also asked about their intentions for future practice. Of the seven interviewed, only two were fully committed to rural practice, while one was unsure and two expected to live in a smaller town but

Table 3: Theme 2—Program Fit

Subtheme	Exemplar Quotations
Break from the competitive culture	• It's like a breath of fresh air because so much of the medical school culture is very competitive and very specialty oriented. Everyone wants to be perfect. Everyone is really driven—focused on results. This is a time when you can step back and have a different perspective on both your own career and get out of the craziness. • I guess it's just sort of like the promise that you can do good with medicine, and it's not just all about, "What did you get on your test?" You escape that.
Isolated from peers	• You have to be self-sufficient. I have had minimal contact with classmates. I have my friends and parents around but not my peers, and it can be isolating. There's lots of peer pressure about what a normal medical student does, and you worry if you are on track.
Independence and maturity	• You have to have an emotional maturity, or life experiences, to be able to deal with some of the situations you are put in. You can't hide. You definitely have to think about if you are able to handle these kinds of situations or not.
Cost	• And, I really didn't want to get a ton of debt by going to a private institution when I can go to somewhere that I love and I am comfortable with and on top of it all, the tuition is like half the price of going to a private university. • I think in the end the biggest factor for me was the tuition and the fact that it was my only in-state option. I think that outweighed just about everything. • The only other places I got into were extremely more expensive so it was a lot about cost.

not necessarily rural. Most MS3–4 students were more concerned with selecting a residency program and the availability of jobs after residency than selecting a future practice location at the time of our interviews.

Specialty interests at the time of the focus groups sessions suggested most MS1–2 students favored family medicine (63%) and pediatrics (13%). MS 3–4 students were asked during their interviews which types of residency programs were of interest to them. A good portion of MS3 students were "open-minded" as they began their clinical rotations. Of those with defined interests, responses varied considerably and included: primary care, pediatrics, general surgery, and emergency medicine. Among the MS3–4 cohorts, many described the appeal of returning to their rural hometowns for training. Training in their own towns meant they could attend their siblings' sporting events and share a home-cooked meal. However, simply removing themselves from the city was considered by some to be a perk of training off-site. As one MS4 student stated:

> I like to see farm land and open space, cows, and all the fun things that go along with country life.

The aversion to living in urban spaces was palpable among a good number of MS1–2 students during the focus group sessions, as well. This was summarized by one MS1 student, who stated:

> I think cities are nice to visit, but I would never actually like to live there.

The factors that would deter students from practicing in a rural community focused on spousal preference and professional opportunities. Students recognized the lack of job opportunities in rural settings as problematic, especially among those who were not married. Some MS1–2 students had not narrowed their specialty choice and felt if they "fell in love" with a highly specialized field, they may not have an option to practice in that field, rurally. One student was concerned that because residency programs are largely outside of rural areas, finding networking opportunities in rural areas would be challenging. A few students felt that if offered loan forgiveness, they would be more likely to return to rural communities. Exemplar quotes regarding "intentions for future practice" are presented in Table 4.

Discussion

The purpose of this research study was to explore the factors that

Table 4: Theme 3—Intentions for Future Practice

Subtheme	Exemplar Quotations
Community service	• My goal is to live and serve the community I am in. Where you are not anonymous, and this is part of an underlying ethics that propels my life. • I went into medicine for the people and to get to know my patients and be involved with their lives. I don't want to be the doctor who gets their chart and hands it over to someone else and never sees them again. That's not the way I grew up. My doctor's office was at the end of my road. I babysat her kids. They were very integrated into the community and that's definitely how I want to be.
No place like home	• I really do want to go back to a rural area. That's where I'm from. That's where my fiancé is from. So, we highly anticipate going back to practice in that area. • As far as I'm concerned, having a family in the place where I grew up is ideal. • I love the way I grew up. And, I am married so I want my kids to be able to have that—to be able to grow up in that sort of environment. • I am much more comfortable in a small town. I don't like driving through traffic. I don't like parking at a meter. I don't like taking the bus. I like to see farm land and open space, cows, and all the fun things that go along with country life. I like piling wood and bringing wood in for the fall. I like working in the sugar bush with my parents, and I like the smell of country air and cow manure.
City averse	• I am definitely not looking to be a physician in a super urban area. If anything, the closest I think I would ever be is like the suburbs. • I wouldn't want to be in a city with a family, whether or not that's near a city or in a rural area, I don't know.
Rural/Suburban considerations	• I honestly can't imagine living anywhere than rurally, but a lot of it also has to do with my husband. I am tied to another person and because of that, it would have to be whatever the opportunities were. • I think about falling in love with a specialty that is not rurally located. Like, ENT—you are not going to be able to do that in really rural areas. • The residencies are not really in rural areas. I worry that I will be networking and then it will be harder for me to get a job in a rural area. • If they offer loan forgiveness, I will go back to a rural area!

current medical students are thinking about when considering a rural medical career. Although there are other points at which physicians make decisions about where to practice, particularly during or after residency training, we believe there may be issues we can identify while medical students are still in school, including motivations to enter the field of medicine, the identification of like-minded colleagues with similar backgrounds, and appeal to extra-curricular interests and training locations suited to student lifestyle preferences. However, there are also a number of factors that affect eventual practice decisions that are beyond the control of medical school RTs.

While "giving back" to the community was a strongly associated theme among participants, future specialty choices and future location of practices were less clear. There appears to be a discrepancy between what students are willing to provide in writing, via student survey or admission application, and how they really express their hesitations toward rural practice among their peers during a focus group discussion. Many RTs attempt to select students through stated preferences for rural practice, through characteristics thought to be predictive of future practice (such as rural origin or primary care interest) or a combination of these factors. However, despite quantitative data that suggest these strategies as best practices, engaging students in open-ended conversations reveals the commitment to rural practice to be less stable an outcome.

Though students praise the upbringing and lifestyle associated with the rural identity, the perceived lack of jobs and professional opportunities may deter them from future rural practice in lieu of suburban practice. One clear solution to mitigate some of their hesitations would be offering student loan repayment for rural practice, though additional research on incentivizing rural practice is needed.

RT programs may sustain students' interest in rural health by first providing an escape from the competitiveness of medical school through meaningful course interactions early on, and second, by offering student-focused learning experiences concentrating on the development of skills through hands-on practice. Bringing RT students together for their first 2 years of medical school, through an elective course, appears to solidify their service-oriented worldview of medicine and provide them with a long-lasting support group with shared backgrounds and values. Off-site, rural training opportunities afford students with the practical hands-on practice of skills in a supportive environment.

However, our evidence suggests that students' intentions to train in rural communities do not necessarily translate to students' intentions to practice in rural communities.

Limitations

The limitations of this study focus on our use of a single program, small sample size, and application of cohorts as opposed to a longitudinal research design. Researchers purposefully intended for the pilot to capture the essence of a single program year through the perspective of students experiencing the program at various training stages. It was important to document how changes in admission policy affected the number of students entering the RT program, as well as characteristics, interests, and intentions for rural practice among the different cohorts. Certainly results of this pilot are not generalizable but lend support for the need to conduct further research in the area of RT programming and the pipeline for rural practitioners.

Conclusions

Despite the best efforts of an RT program, students remain hesitant to commit to rural practice at each stage of their medical school training, though many will outright rule out large city practice. Commitment to rural practice loses efficacy as students describe the lack of job opportunities, residency programs, and specialty options associated with rural practice. Students may be resistant to documenting their hesitations for rural practice in surveys, admission application essays, or course assignments but more willing to share such uncertainties in group discussion format. However, research into predictors of eventual rural practice should continue on a large scale, as additional predictors other than rural origin, primary care interest, and rural practice intentions may emerge through such work. Additionally, this study demonstrates how an RT can serve as a haven for medical students with primary care and/or rural career interests. It appears that students seeking this haven often have durable primary care and/or rural career interests. Students may also be seeking to avoid the competitive and crowded nature of learning in an urban university hospital. The challenge is to discern the strength of these motivators prior to medical school entry so that limited resources can be directed toward students most likely to enter the rural workforce. Nevertheless, it is vital that evaluations of RT programs remain objective and critical regarding both the outcomes they achieve and the motivations and intentions of those students they train.

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