

# Student Perceptions About Benefits From an Extracurricular Curriculum

## A Qualitative Study of the Underserved Pathway

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### Abstract

**Introduction:** Too few medical graduates choose to care for underserved populations. This qualitative study explores medical student perceptions of the benefits of participating in the Underserved Pathway (UP), a 4-year extracurricular program designed to nurture interest in, and develop skills to serve vulnerable populations.

**Methods:** Fourteen of 28 graduating students in the class of 2013 who completed the UP were interviewed. Using conventional qualitative content analysis, an iterative process was used to code transcriptions until there was high concordance among the assigned codes. The research team analyzed the data for common themes, theme saturation, and unique perspectives.

**Results:** Four major thematic areas emerged: 1) the underserved curriculum scaffold, 2) influence on career choice, 3) influence on residency choice, and 4) capacity to match. Of all participants, 78.6% thought the UP influenced their career choice, 64.3% stated the UP played a role in residency choice and rank, and 85.7% thought participation in the UP would improve match success. No single curricular component of the UP was individually responsible for career or specialty choice, or as being most useful to student understanding of the underserved.

**Conclusions:** Students noted that participation in the UP provided them with a scaffold to support their interest in underserved careers, and influenced their specialty and residency choice. They also perceived it as making them more competitive as residency applicants. This study provides medical educators with insight into the importance of building robust frameworks, even extracurricular ones, to support student interests in serving vulnerable communities.

## Introduction

Despite prematriculation interest in serving vulnerable populations, too few students choose a career serving the underserved.<sup>1-3</sup> Student altruism (measured as empathy, professionalism, idealism, or, inversely, as burnout) diminishes yearly, suggesting that curricula do not sustain interest in serving the underserved.<sup>4-10</sup> Health professions programs that prioritize service show success in retention of values and future careers in underserved communities.<sup>11-13</sup>

Studies of extracurricular programs for medical students focus on knowledge or skill acquisition.<sup>14-19</sup> Some comprehensive curricula focused on producing rural physicians have shown success.<sup>20-22</sup> Others demonstrate associations between extracurricular participation and matching to family medicine residencies.<sup>17,19</sup>

But what do medical students find beneficial from extracurricular participation? This qualitative study explores perceptions of medical students participating in an extracurricular program designed to encourage practice with vulnerable populations. Asking about the benefits of participation and the impact on residency and career decision-making, this study seeks to contribute to the discussion of ways to increase the numbers of students who enter careers caring for underserved populations.

## Methods

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**Setting:** The University of Washington School of Medicine (UWSOM) Underserved Pathway (UP) is a 4-year extracurricular experience that employs a variety of educational modalities and asynchronous learning techniques to foster and maintain student interest in caring for underserved populations (Figure 1). The UP integrates mentorship, service learning, preceptorships, clinical rotations, scholarship, and live and online content into a structured curriculum. Between its inception in 2008 and 2016, 304 students have completed the UP. As of the 2016 academic year, the UP has over 225 participating students distributed through the 4 years of medical school. Completing students receive a certificate and acknowledgment in their Medical Student Performance Evaluation (MSPE) letter.

**Research Team:** The research team was three UP faculty with experience in qualitative research and two medical students. A single faculty member (DVE) interviewed all participants and had no longitudinal relationship with study participants. As UP faculty, DVE had periodic interaction with some of the participants including direct teaching of in-person modules and responding to online assignments. The coding team consisted of two UP faculty (DVE, SD), and a second year medical student (BK). Transcripts were de-identified to the coders.

**Participants:** Students of the graduating class of 2013 who were projected to complete the UP were eligible. Students enrolled in the UP but not projected to complete all the requirements were excluded. Twenty-eight students met eligibility criteria. Participation in the study was voluntary. No inducements were offered. We contacted eligible students by email up to three times. Students who were eligible to participate and did are called “the study group.” Students who were eligible to participate and did not choose to interview are called “UP study nonparticipants.” The total UWSOM 2013 graduating class, including the 28 UP students, is called the “2013 graduating class.”

**Instrument:** We used a semistructured instrument for the interviews (Table 1). All participants were asked each question, and the interviewer had latitude to explore and probe responses. Interview content focused on influences on career choice and residency choice. The interviewer investigated the impact of specific components of the pathway, as well as of other medical school curricular and extracurricular offerings.

**Data collection:** After obtaining written informed consent, a single faculty interviewer (DVE) interviewed study participants individually. Because students complete clinical rotations in five states, interviews were conducted either in-person, by telephone or using Skype between December 2012 and March 2013. Interviews were audio-recorded and transcribed.

**Analysis:** Aggregate demographic data for all three contrast groups was obtained from a routine survey given to every UWSOM matriculating student. Using Pearson chi-square testing, minority status and gender of study group participants were compared to contrast groups. The mean age of the study group participants was compared to contrast groups using sum of square testing.

Full texts of the de-identified transcripts were entered into Dedoose qualitative research data analysis software (Dedoose Version 4.5, (2013) [www.dedoose.com](http://www.dedoose.com)).

Using principles of conventional qualitative content analysis, and consistent with standards developed for qualitative research, we used an iterative coding process.<sup>23-27</sup> Transcripts were coded by three investigators (DVE, SD, BK) between February and July 2013. Each investigator independently coded an initial subset of five transcripts. Using a phenomenological approach, coding was initially open ended.<sup>28</sup> The three investigators then discussed, modified, and reconciled the codes, reaching consensus and generating a common coding lexicon. Following development of a common lexicon, all transcripts (including the initial subset of five) were coded independently by

the investigators. Meeting monthly, investigators reviewed the coding in this iterative process until there was high concordance among the assigned codes on all transcripts.<sup>24-26</sup> Using the Dedoose software tools, we then analyzed the data for common themes, theme saturation, and unique perspectives.

**Oversight:** The University of Washington Human Subjects Division approved the study.

## Results

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**Demographics:** Fourteen of 28 eligible UP graduates were interviewed (the UP study group). Mean interview length was 32 minutes (range 22-52 minutes). The UP study group and study nonparticipant group had more female students (71% and 80% respectively) compared with the 2013 graduating class (57%). No demographic characteristics had statistically significant differences.

**Themes:** These students' interviews revealed four major themes (Table 2):

1. The Underserved Curriculum Scaffold

UP graduates commented on framework of the UP. Noting they were predisposed to seek out service learning and other opportunities to care for underserved populations, the UP made this easier, provided structure, gave validity and provided broad exposure to underserved medicine.

2. Influence on Career Choice

Eleven of 14 (78.6%) interviewed students said the UP influenced career choice (Table 3). Six of seven (85.7%) of those entering primary care and five of seven (71.4%) not entering primary care indicated UP influence on career choice.

3. Choice of Residency Program

Nine of 14 (64.3%) stated the UP affected program choice and rank. (Table 3) Students mentioned applying to programs serving underserved populations, with underserved care in their mission statement, or ranking programs higher if the residency had an underserved commitment.

4. Capacity to Match

Twelve of 14 (85.7%) students thought that participation in the UP would improve their success in matching to a highly ranked choice. Students said residency interviewers asked about the UP during interviews. Participation demonstrated commitment to, and experience with underserved populations.

## Conclusions

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Studies suggest that medical school experiences in underserved settings promote future practice with vulnerable populations.<sup>29,30</sup> What do students value from extracurricular programs designed to support career choice to work with the underserved?

This qualitative study identified four themes for perceived value of this extracurricular program. With the exception of mentorship and the online curriculum, the UP is composed of curricular and extracurricular options available to all UWSOM students, yet participation appears to provide a scaffold supporting interest in underserved careers with the organized framework of the UP adding value; the value of the whole exceeded that of its individual parts.

For both primary care and specialty-bound students, participation influenced specialty and residency choice while possibly making them more competitive residency candidates.

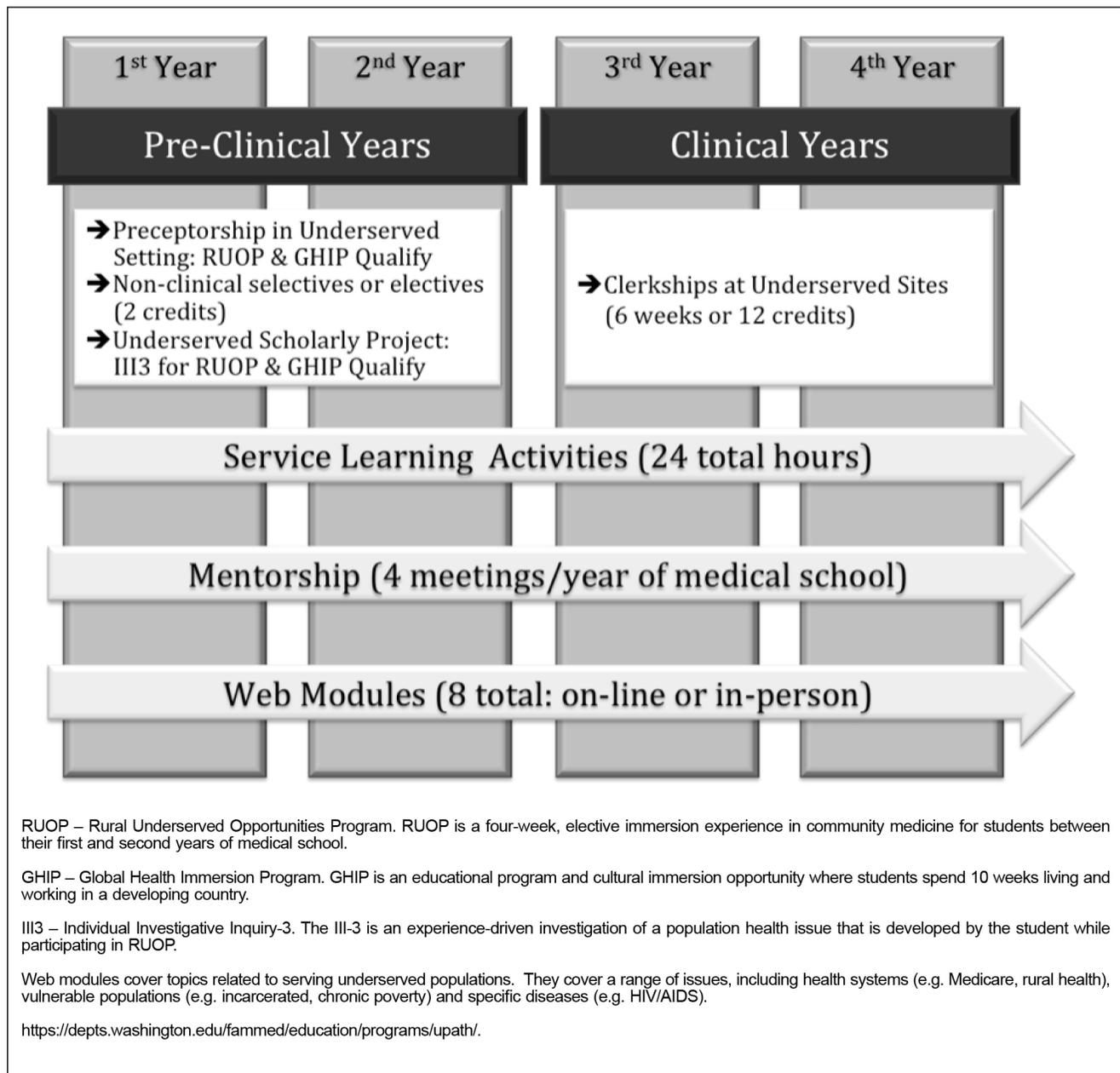
There are limitations. Small sample size and being a single program at one institution limits generalizability. Second, selection bias might exist because of institutional value placed on primary care and addressing the health care needs of this rural five-state region. Participants volunteered to participate in the UP and to be interviewed. Third, two members of the coding team (DVE, SD) had interactions with the study participants outside of the study, with possible previous knowledge of student characteristics that could influence coding decisions. Minimizing this,

transcripts were de-identified prior to coding, the coding team included a student without prior knowledge of participants, and an iterative coding strategy was used. Lastly, no control group was interviewed; comparisons to other students cannot be made.

Robust extracurricular efforts can support student interests in serving vulnerable communities. The educational scaffold created by these programs reinforces interests and may decrease attrition from underserved careers, ultimately leading to a more robust primary care workforce in underserved communities. Future work might include replication of this program elsewhere and analysis of similar programs at other institutions.

## Tables and Figures

**Figure 1: The Underserved Pathway Curriculum**



**Table 1: Semistructured Survey Instrument**

<b>Career Choice</b>
Where are you headed in your future career?
How do your current career plans compare to those you had when you entered medical school?
What is it about you and your life circumstances that has brought you to this career choice?
What factors have either reinforced or altered your career trajectory?
Where in your future work do you see care for the underserved?
Can you speak to the role of the Underserved Pathway had on your future career choice working with underserved communities?
<b>Specialty/Residency Choice</b>
What in the School of Medicine most influenced your career choice?
How did the Underserved Pathway influence your specialty choice?
Did the Underserved Pathway influence which programs within your specialty you applied to?
How does participation in the Underserved Pathway make it more or less likely that you will match in a residency of your choice?
<b>Medical School Curriculum</b>
What classes and experiences in medical school were most influential in shaping the career path you described?
Which components (III-3, Selectives, Clerkships, modules, mentorship, service learning) of the Underserved Pathway curriculum were most influential in the career path you described to me?
Which components of the Underserved Pathway curriculum were least influential in the career path you described to me?
Of the online modules, which ones did you find to be the most helpful in understanding issues related to underserved populations?
Of the online modules, which ones did you find to be the least helpful in understanding issues related to underserved populations?
<b>Mentorship</b>
In what program or department did you find mentoring?
Can you describe the relationship you had with your mentor?
How did your Underserved Pathway mentorship compare to other mentor relationships during medical school?
What did you and your mentor talk about or do with your time together?
Did your mentor relationship influence your career choice?
What would have made your mentorship experience more effective?
<b>Service Learning</b>
Tell me about your service learning activities
How did/does service learning influence your career decisions?
How many hours of community service, on average, did you complete per year?
<b>Other</b>
Is there anything else you would like to share with me today?
What would you change about the Underserved Pathway to make better?

**Table 2: Students' Thoughts on the Themes**

<b>The Underserved Curriculum Scaffold</b>
" I always wanted to go down this path. It (the UP) just helped with the framework for getting there."
"The structure guides you... things you should be doing each year to make sure you are adequately prepared, organizing your thought process, building on your cv."
"If I had not been in the pathway, I would not have been as intentional about seeking out service experiences. (I) would have thought 'I am so busy, I don't have time for that.'"
"The Underserved Pathway acted like another factor that supported my way through medical school"
"The Pathway reminded me what my original intent was and kept me on track of what my values are and encouraged me to find a venue to volunteer in."
<b>Influence on Career Choice</b>
"It (the UP) reconfirmed and indicated to me what I wanted to do. Service learning in the urban community was definitely influential. Seeing the community was more helpful in deciding where I wanted to be eventually."
"I think doing the actual clerkships in the underserved areas are the most valuable because it is not a scenario, not a thought concept, it is actually doing it, actually seeing what it is like."
"My Underserved Pathway mentor has had a huge effect. I liked the example that was set... knowing this can be done and is within reach."
<b>Choice of Residency Program</b>
"Being in the Pathway and wanting to be in an underserved field, I only applied to residencies that offered underserved training opportunities."
"I ended up applying for a few rural training tracks. I may not have done that if not in the Pathway."
"The programs I applied to... I made sure they had an underserved or primary care focus."
"The programs I am interested in were influenced by my underserved experience. I am not ranking as highly residencies with fewer opportunities to work with the underserved."
"It influenced me to apply to programs that were focused on underserved medicine. I applied to whatever residencies would allow me to continue in urban medicine for the underserved."
<b>Capacity to Match</b>
"Programs were pretty excited that I was involved, especially those programs with a strong emphasis on serving the underserved patients with clinics and hospitals in those areas."
"It shows you are dedicated in carrying through on your passion and implementing something."
"They (residency interviewers) asked about my experience in the Pathway because it is very unique."
"It shows on the student side that you do have that underlying kind of determination that for the last 4 years you have been thinking about doing underserved medicine, not just coming up and interviewing and saying you have a passion but you are showing you are actively involved and pursuing it."
"During my interview trail they actually asked me about the Pathway and wanted to know what the Pathway meant and what we gained in terms of the opportunities it provided us. I think it definitely helped my application and they did ask me about it."
"It showed that I wanted to do this and will continue to want to do this in the future. When I say I want to serve the underserved they can believe me."

**Table 3: Student Perceptions of the Influence of the Underserved Pathway on Career Choice, Residency Choice, and Capacity to Match**

	Students entering primary care specialties n=7	Students not entering primary care specialties n=7	Total n=14
Influenced Career Choice	6 (85.7%)	5 (71.4%)	11(78.6%)
Influenced Residency Program Choice	5 (71.4%)	4 (57.1%)	9 (64.3%)
Improved Capacity to Match	6 (85.7%)	6 (85.7%)	12 (85.7%)

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## References

1. Jolly P, Erikson C, Garrison G. U.S. Graduate medical education and physician specialty choice. *Acad Med.* 2013;88(4):468-474.  
<https://doi.org/10.1097/ACM.0b013e318285199d>
2. Physician Shortages to Worsen Without Increases in Residency Training. 2010. [https://www.aamc.org/download/153160/data/physician\\_shortages\\_to\\_worsen\\_without\\_increases\\_in\\_residency\\_tr.pdf](https://www.aamc.org/download/153160/data/physician_shortages_to_worsen_without_increases_in_residency_tr.pdf). Accessed April 18, 2014.
3. Goodell S, Dower C, O'Neil E. Primary care workforce in the United States. Robert Wood Johnson Foundation; 2011. <http://www.rwjf.org/en/library/research/2011/07/primary-care-health-workforce-in-the-united-states0.html>. Accessed July 2017.

4. Woloschuk W, Harasym PH, Temple W. Attitude change during medical school: a cohort study. *Med Educ*. 2004;38(5):522-534. <https://doi.org/10.1046/j.1365-2929.2004.01820.x>
5. Neumann M, Edelhauser F, Tauschel D, et al. Empathy decline and its reasons: a systematic review of studies with medical students and residents. *Acad Med*. 2011;86(8):996-1009. <https://doi.org/10.1097/ACM.0b013e318221e615>
6. Batt-Rawden SA, Chisolm MS, Anton B, Flickinger TE. Teaching empathy to medical students: an updated, systematic review. *Acad Med*. 2013;88(8):1171-1177. <https://doi.org/10.1097/ACM.0b013e318299f3e3>.
7. Smith JK, Weaver DB. Capturing medical students' idealism. *Ann Fam Med*. 2006;4(suppl 1):S32-S37. <https://doi.org/10.1370/afm.543>.
8. Carufel-Wert DA, Younkin S, Foertsch J, et al. LOCUS: immunizing medical students against the loss of professional values. *Fam Med*. 2007;39(5):320-325.
9. Morley CP, Roseamelia C, Smith JA, Villarreal AL. Decline of medical student idealism in the first and second year of medical school: a survey of pre-clinical medical students at one institution. *Med Educ Online*. 2013;18. <https://doi.org/10.3402/meo.v18i0.21194>.
10. Mader EM, Roseamelia C, Morley CP. The temporal decline of idealism in two cohorts of medical students at one institution. *BMC Medical Education*. 2014;14. <https://doi.org/10.1186/1472-6920-14-58>.
11. Erikson CE, Danish S, Jones KC, Sandberg SF, Carle AC. The role of medical school culture in primary care career choice. *Acad Med*. 2013;88(12):1919-1926. <https://doi.org/10.1097/ACM.0000000000000038>.
12. Barrett FA, Lipsky MS, Lutfiyya MN. The impact of rural training experiences on medical students: a critical review. *Acad Med*. 2011;86(2):259-263. <https://doi.org/10.1097/ACM.0b013e3182046387>.
13. McQuistan MR, Kuthy RA, Heller KE, Qian F, Riniker KJ. Dentists' comfort in treating underserved populations after participating in community-based clinical experiences as a student. *J of Dent Educ*. 2008;72(4):422-430.
14. Berman R, Powe C, Carnevale J, et al. The Crimson Care Collaborative: a student-faculty initiative to increase medical students' early exposure to primary care. *Acad Med*. 2012;87(5):651-655. <https://doi.org/10.1097/ACM.0b013e31824d5269>.
15. Godkin M, Savageau J. The effect of medical students' international experiences on attitudes toward serving underserved multicultural populations. *Fam Med*. 2003;35(4):273-278.
16. Cox ED, Kosciak RL, Olson CA, et al. Caring for the underserved: blending service learning and a web-based curriculum. *Am J Prev Med*. 2006;31(4):342-349. <https://doi.org/10.1016/j.amepre.2006.06.024>.
17. Kost A, Benedict J, Andrilla CHA, Osborn J, Dobie SA. Primary care residency choice and participation in an extracurricular longitudinal medical school program to promote practice with medically underserved populations. *Acad Med*. 2014;89(1):162-168. <https://doi.org/10.1097/ACM.0000000000000075>.
18. Freeman J, Dobbie A. Teaching medical students research while reaching the underserved. *Fam Med*. 2005;37(5):315-317.
19. Norris TE, House P, Schaad D, Mas J, Kelday JM. Student providers aspiring to rural and underserved experiences at the University of Washington: Promoting team practice among the health care professions. *Acad Med*. 2003;78(12):1211-1216. <https://doi.org/10.1097/00001888-200312000-00003>.
20. 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*. 2008;83(3):235-243. <https://doi.org/10.1097/ACM.0b013e318163789b>.
21. Florence JA, Goodrow B, Wachs J, Grover S, Olive KE. Rural health professions education at East Tennessee State University: survey of graduates from the first decade of the Community Partnership Program. *J Rural Health*. 2007;23(1):77-83.

<https://doi.org/10.1111/j.1748-0361.2006.00071.x>.

22. Quinn KJ, Kane KY, Stevermer JJ, et al. Influencing residency choice and practice location through a longitudinal rural pipeline program. *Acad Med*. 2011;86(11):1397-1406.  
<https://doi.org/10.1097/ACM.0b013e318230653f>.
23. Bogdan RC, Biklen SK. Research for education: an introduction to theories and methods. In: *Qualitative Research for Education: An Introduction to Theories and Methods*. Boston, MA: Allyn and Bacon; 2003.
24. Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qualitative health research*. 2005;15(9):1277-1288.  
<https://doi.org/10.1177/1049732305276687>.
25. Mayring P. Qualitative content analysis. In: *A Companion to Qualitative Research*. Thousand Oaks, CA: Sage Publications; 2004:266-269.
26. Kondracki NL, Wellman NS, Amundson DR. Content analysis: review of methods and their applications in nutrition education. *J Nutr Educ Behav*. 2002;34(4):224-230.  
[https://doi.org/10.1016/S1499-4046\(06\)60097-3](https://doi.org/10.1016/S1499-4046(06)60097-3).
27. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med*. 2014;89(9):1245-1251.
28. Larkin M, Watts S, Clifton E. Giving voice and making sense in interpretative phenomenological analysis. *Qual Res Psych*. 2006;3(2):102-120.  
<https://doi.org/10.1191/1478088706qp062oa>.
29. Dobie SA, Carline JD, Laskowski MB. An early preceptorship and medical students' beliefs, values, and career choices. *Adv Health Sci Educ Theory*. 1997;2(1):35-47.  
<https://doi.org/10.1023/A:1009721425157>.
30. Norris TE, Coombs JB, House P, Moore S, Wenrich MD, Ramsey PG. Regional solutions to the physician workforce shortage: the WWAMI experience. *Acad Med*. 2006;81(10):857-862.  
<https://doi.org/10.1097/01.ACM.0000238105.96684.2f>.

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