

# Primary Care Residency Choice and Underserved Pathway Participation

Family Medicine Grand Rounds  
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# CME

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# Learning Objectives

At the end of this activity, the participant will be able to:

1. Describe factors influencing medical student career choice.
2. Discuss the components of the Underserved Pathway.
3. Explore the association between the Underserved Pathway and residency choice.

# Disclosure: Conflicts of Interest

Dr. Amanda Kost states:

Neither I, nor any immediate family member has any financial relationship with, or interest in, any commercial interest connected with this presentation.

# Disclosure of Off-Label Drug Use

The of material in this CME activity will not include discussion of unapproved or investigational uses of products or devices.

# Medical Student Career Choice

- Student Factors
- Curricular Factors
  - Extracurricular Factors
- Debt
- Institutional Factors

# Underserved Pathway Components

Years

I

II

III

IV

Pre-Clinical  
Electives, Selectives, RUOP,  
Preceptorships in underserved sites

Clinical  
Block Rotations, Core Clerkships,  
Electives in underserved sites

Independent  
Investigation  
(III-3)

Service Learning – 24 hours of volunteer activities

Mentorship – Quarterly contacts with mentors, faculty/staff support

Web Modules- Required to complete a total of 8 web-based modules

# Methods

- Population – 2008-2011 MD Grads who matched
- Residency Match
- UP Participation – included regardless of completion
- Initial Interest
  - Primary Care
  - Underserved Care
- Demographics

# Demographic Characteristics

	All Study Graduates <sup>†</sup>	UP Participation	
		Yes	No
Number (%)	663	69 (10.4)	594 (89.6)
Mean age at match (years)	29.5	28.9	29.6
Gender (% female)	53.8	78.3 <sup>***</sup>	51.0
Race/ethnicity (% non-white)	23.5	40.0 <sup>***</sup>	21.6

\*  $P \leq .05$ . \*\*  $P \leq .01$ . \*\*\*  $P \leq .001$ .

<sup>†</sup> Missing values—age: 1, race/ethnicity: 42.

# Residency Match to Different Specialties

	All Study Graduates (n=663)		Dual Interest Study Graduates (n=513)		Non-Dual Interest Study Graduates (n=150)	
	UP Participation		UP Participation		UP Participation	
	Yes (n=69)	No (n=594)	Yes (n=64)	No (n=449)	Yes (n=5) <sup>§</sup>	No (n=145)
Primary care <sup>†</sup> , n (%)	50 (72.5) <sup>***</sup>	286 (48.1)	47 (73.4) <sup>**</sup>	240 (53.5)	3 (60)	46 (31.7)
Family medicine <sup>‡</sup> , n (%)	23 (33.3) <sup>***</sup>	89 (15.0)	20 (31.2) <sup>*</sup>	81 (18.0)	3 (60)	8 (5.5)
Internal medicine <sup>‡</sup> , n (%)	14 (20.3)	130 (21.9)	14 (21.9)	100 (22.3)	0 (0)	30 (20.7)
Pediatrics <sup>‡</sup> , n (%)	12 (17.4)	59 (9.9)	12 (18.8)	51 (11.4)	0 (0)	8 (5.5)
Medicine-pediatrics <sup>§</sup> , n (%)	1 (1.4)	8 (1.3)	1 (1.6)	8 (1.8)	0 (0)	0 (0)
Non-primary care, n (%)	19 (27.5)	308 (51.9)	17 (26.6)	209 (46.5)	2 (40)	99 (68.3)

\*  $P \leq .05$ . \*\*  $P \leq .01$ . \*\*\*  $P \leq .001$ .

<sup>†</sup> Chi-square calculated to compare primary care vs. non-primary care residency match rates and UP participation.

<sup>‡</sup> Chi-square calculated to compare match rates for individual primary care residencies vs. all other residencies and UP participation.

<sup>§</sup> Chi-square not calculated due to  $n < 5$ .

# Odds of Matching to a Primary Care Residency

	All Study Graduates <sup>†</sup>		Dual Interest Graduates <sup>‡</sup>	
	Unadjusted OR (CI)	Adjusted <sup>§</sup> OR (CI)	Unadjusted OR (CI)	Adjusted <sup>§</sup> OR (CI)
Primary care	2.6 (1.5-4.6)	2.2 (1.3-4.0)	2.2 (1.2-4.0)	1.9 (1.1-3.6)
Family medicine	3.0 (1.7-5.2)	2.9 (1.6-5.2)	2.2 (1.2-4.0)	2.1 (1.1-3.9)
Internal medicine	0.9 (0.4-1.7)	0.8 (0.4-1.6)	1.0 (0.5-1.9)	1.0 (0.5-1.9)
Pediatrics	1.4 (0.7-3.0)	1.1 (0.5-2.5)	1.3 (0.6-2.9)	1.1 (0.5-2.5)

\* OR for non-dual interest graduates not calculated due to n=5 for UP participants.

<sup>†</sup> Missing values—age: 1, race/ethnicity: 42.

<sup>‡</sup> Missing values—race/ethnicity: 31.

<sup>§</sup> Adjusted for age, gender, race/ethnicity.

# Residency Match to Different Specialties for Primary Care Graduates

	Primary Care Graduate (n=336)	
	UP Participation	
	Yes (n=50)	No (n=286)
Family medicine, n (%)	23 (46.0) <sup>*</sup>	89 (31.1)
Internal medicine, n (%)	14 (28.0) <sup>*</sup>	130 (45.5)
Pediatrics, n (%)	12 (24.0)	59 (20.6)
Medicine-pediatrics <sup>†</sup> , n (%)	1 (2.0)	8 (2.8)

\*  $P \leq .05$ . \*\*  $P \leq .01$ . \*\*\*  $P \leq .001$ .

<sup>†</sup> Chi-square not calculated due to  $n < 5$ .

# Discussion

- Who participated.
- Higher match rate to PC via FM.
- When primary care is your outcome.

# Conjecture

- Underserved career linked to FM career.
- Specific program components.
- Non-denominational.

# Limitations

- Selection bias, temporal trends, our unusual school.
- Non-dual interest grads.
- Extent of UP participation.
- Housed in FM department.

# Future Directions

- Residency characteristics.
- Long term outcomes.
- Non-dual interest grads.
- Qualitative study.

# Take Home Points

- Student career choice multifaceted.
- Extracurricular intervention.
- Family Medicine unique.
- More study needed.

# Questions and Comments?

# References

1. Advancing primary care. Council on Graduate Medical Education; 2010 December 2010. Report No.: Twentieth.
2. Rosenblatt RA, Andrilla CH, Curtin T, Hart LG. Shortages of medical personnel at community health centers: Implications for planned expansion. JAMA. 2006 Mar 1;295(9):1042-9.
3. Freeman J, Ferrer RL, Greiner KA. Viewpoint: Developing a physician workforce for america's disadvantaged. Acad Med. 2007 Feb;82(2):133-8.
4. Specialty and geographic distribution of the physician workforce: What influences medical student & resident choices? -- monographs & books -- the robert graham center [Internet].; cited 3/13/2012]. Available from: <http://www.graham-center.org/online/graham/home/publications/monographs-books/2009/rgcmo-specialty-geographic.html>.
5. Senf JH, Campos-Outcalt D, Watkins AJ, Bastacky S, Killian C. A systematic analysis of how medical school characteristics relate to graduates' choices of primary care specialties. Acad Med. 1997 Jun;72(6):524-33.
6. Lawson SR, Hoban JD, Mazmanian PE. Understanding primary care residency choices: A test of selected variables in the bland-meurer model. Acad Med. 2004 Oct;79(10 Suppl):S36-9.
7. Senf JH, Campos-Outcalt D, Kutob R. Factors related to the choice of family medicine: A reassessment and literature review. J Am Board Fam Pract. 2003 Nov-Dec;16(6):502-1.
8. Wayne S, Timm C, Serna L, Solan B, Kalishman S. Medical students' attitudes toward underserved populations: Changing associations with choice of primary care versus non-primary care residency. J Health Care Poor Underserved. 2010;21(2):438-47.
9. Jeffe DB, Whelan AJ, Andriole DA. Primary care specialty choices of united states medical graduates, 1997-2006. Acad Med. 2010 Jun;85(6):947-58.
10. Compton MT, Frank E, Elon L, Carrera J. Changes in U.S. medical students' specialty interests over the course of medical school. J Gen Intern Med. 2008 Jul;23(7):1095-100.
11. Feldman K, Woloschuk W, Gowans M, Delva D, Brenneis F, Wright B, et al. The difference between medical students interested in rural family medicine versus urban family or specialty medicine. Can J Rural Med. 2008 Spring;13(2):73-9.
12. Bazargan M, Lindstrom RW, Dakak A, Ani C, Wolf KE, Edelstein RA. Impact of desire to work in underserved communities on selection of specialty among fourth-year medical students. J Natl Med Assoc. 2006 Sep;98(9):1460-5.
13. Knox KE, Getzin A, Bergum A, McBride P, Rieselbach R, Friedsam D. Short report: Factors that affect specialty choice and career plans of wisconsin's medical students. WMJ. 2008 Dec;107(8):369-73.
14. Senf JH, Kutob R, Campos-Outcalt D. Which primary care specialty? factors that relate to a choice of family medicine, internal medicine, combined internal medicine-pediatrics, or pediatrics. Fam Med. 2004 Feb;36(2):123-30.
15. Mennin SP, Kalishman S, Friedman M, Pathak D, Snyder J. A survey of graduates in practice from the university of new mexico's conventional and community-oriented, problem-based tracks. Acad Med. 1996 Oct;71(10):1079-8.

# References

16. Ko M, Heslin KC, Edelstein RA, Grumbach K. The role of medical education in reducing health care disparities: The first ten years of the UCLA/drew medical education program. *J Gen Intern Med.* 2007 May;22(5):625-31.
17. Quinn KJ, Kane KY, Stevermer JJ, Webb WD, Porter JL, Williamson HA, Jr, et al. Influencing residency choice and practice location through a longitudinal rural pipeline program. *Acad Med.* 2011 Nov;86(11):1397-406.
18. 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 Winter;23(1):77-83.
19. Daniels ZM, Vanleit BJ, Skipper BJ, Sanders ML, Rhyne RL. Factors in recruiting and retaining health professionals for rural practice. *J Rural Health.* 2007 Winter;23(1):62-71.
20. Wheat JR, Leeper JD, Brandon JE, Guin SM, Jackson JR. The rural medical scholars program study: Data to inform rural health policy. *J Am Board Fam Med.* 2011 Jan-Feb;24(1):93-101.
21. 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 Mar;83(3):235-43.
22. Godkin M, Weinreb L. A pathway on serving multicultural and underserved populations. *Acad Med.* 2001 May;76(5):513-4.
23. Shannon CK, Baker H, Jackson J, Roy A, Heady H, Gunel E. Evaluation of a required statewide interdisciplinary rural health education program: Student attitudes, career intents and perceived quality. *Rural Remote Health.* 2005 Oct-Dec;5(4):405.
24. Dehaven MJ, Chen L. Teaching medical students research while reaching the underserved. *Fam Med.* 2005 May;37(5):315-7.
25. Smith JK, Weaver DB. Capturing medical students' idealism. *Ann Fam Med.* 2006 Sep-Oct;4 Suppl 1:S32,7; discussion S58-60.
26. Cox ED, Kosciak RL, Olson CA, Behrmann AT, Hambrecht MA, McIntosh GC, et al. Caring for the underserved: Blending service learning and a web-based curriculum. *Am J Prev Med.* 2006 Oct;31(4):342-9.
27. Carufel-Wert DA, Younkin S, Foertsch J, Eisenberg T, Haq CL, Crouse BJ, et al. LOCUS: Immunizing medical students against the loss of professional values. *Fam Med.* 2007 May;39(5):320-5.
28. Crandall SJ, Reboussin BA, Michielutte R, Anthony JE, Naughton MJ. Medical students' attitudes toward underserved patients: A longitudinal comparison of problem-based and traditional medical curricula. *Adv Health Sci Educ Theory Pract.* 2007 Feb;12(1):71-86.
29. Cox ED, Kosciak RL, Olson CA, Behrmann AT, McIntosh GC, Kokotailo PK. Clinical skills and self-efficacy after a curriculum on care for the underserved. *Am J Prev Med.* 2008 May;34(5):442-8.
30. Crump WJ, Fricker RS, Ziegler CH. Outcomes of a preclinical rural medicine elective at an urban medical school. *Fam Med.* 2010 Nov-Dec;42(10):717-22.

# References

31. Huang WY, Malinow A. Curriculum and evaluation results of a third-year medical student longitudinal pathway on underserved care. *Teach Learn Med.* 2010 Apr;22(2):123-30.
32. 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 Dec;78(12):1211-6.
33. Ramsey AH, Haq C, Gjerde CL, Rothenberg D. Career influence of an international health experience during medical school. *Fam Med.* 2004 Jun;36(6):412-6.
34. Senf JH, Campos-Outcalt D, Kutob R. Family medicine specialty choice and interest in research. *Fam Med.* 2005 Apr;37(4):265-70.
35. Rabinowitz HK, Diamond JJ, Veloski JJ, Gayle JA. The impact of multiple predictors on generalist physicians' care of underserved populations. *Am J Public Health.* 2000 Aug;90(8):1225-8.

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