Changes in Family Medicine and Underserved Care Interest Among Underrepresented Minority (URM) and Rural Medical Students from Matriculation to Graduation

Significance of Study, Gaps in Knowledge, and Potential to Transform Care: By 2020 the US will face a shortage of 45,000 primary care physicians. This is important, because in communities with less access to primary care, patients are more likely to use ER and hospital care, receive less preventive care, and have poorer health outcomes. Access to primary care physicians (PCPs) is associated with lower mortality for heart disease, cancer, and strokes; lower overall mortality; and substantially lower health care spending.

The worsening shortage of PCPs will have particularly profound implications for racial and ethnic minorities, who historically have had limited access to healthcare. By 2050, minorities will account for almost half of the US population. Despite this, disparities in healthcare quality are significant. The Agency for Healthcare Research and Quality (AHRQ) reports that for over 40% of core quality measures, Blacks and Hispanics receive worse care than Non-Hispanic Whites. For example, minority individuals are less likely to receive colorectal cancer screening, have delayed prostate cancer diagnosis and treatment, and receive lower care quality at the end of life. Blacks and Hispanics are also up to 25% more likely to live in an area with no or few PCPs.

Diversification of the physician workforce is a solution. Racial and ethnic concordance between patients and physicians is associated with greater patient trust, patient satisfaction and adherence with treatment plans. URM students are also more likely to enter primary care (PC) specialties and practice in underserved areas. Despite this, URM groups remain under-represented in medical schools and the physician workforce. In 2013, URM groups accounted for over 30% of the U.S. population while representing just 8.9% of the physician workforce and 10% of PC physicians. A parallel problem exists for rural medical students: these students are more likely to eventually choose PC specialties and care for underserved rural populations, but are underrepresented in medical schools.

There are several barriers to commensurate representation of URM and rural students. URM students are less likely to have access to educational opportunities. They have more educational debt and may view specialty prestige differently. Also, interest in PC and undeserved care decreases during medical school, but it is unknown whether this decline is steeper among URM or rural students, why the decline occurs, or to which specialties students are likely to switch to. Understanding such issues—and developing targeted solutions—has the potential to improve the PC workforce and specifically address healthcare disparities for populations that are currently underserved, improving health outcomes and decreasing costs for these vulnerable patients.

Aims: Study aims are to: 1) Explore how interest in PC and underserved care changes among URM and rural medical students from matriculation to graduation; 2) Describe how changing interest in PC is stratified by race, ethnicity, gender, and rural/urban origin; 3) Describe how changing interest in PC impacts interest in other specialties; and 4) Explore whether students interested in working in Health Professional Shortage Areas (HPSAs) at matriculation are practicing in HPSA’s five years after graduation, stratified by race, ethnicity, gender, and rural origin. We anticipate that students will have high interest in PC at matriculation, which will decrease by graduation; and that changes in interest will vary by demographic factors. We also predict that URM and rural students may be more likely to practice in HPSA’s regardless of specialty. Results will allow researchers to identify areas of potential action for retaining URM and rural student interest in PC and underserved care.

Description of Study: Annually, the Association of American Medical Colleges (AAMC) administers the Matriculating Student Questionnaire (MSQ) to all first year medical students assessing a range of topics including future career interest. A comparable survey, the Graduate Questionnaire (GQ), is administered at graduation. MSU-CHM owns American Medical Association (AMA) Physician Masterfile data, which includes specialty and practice location, and AAMC Admission data, which includes demographics, for graduates. We will use these sources to compile a comprehensive merged dataset of all graduates. We will use the publicly available Health Profession Shortage Area (HPSA) Shapefile, a geographic database, to determine which graduates currently practice in shortage areas (HPSAs). We will identify and describe those graduates interested in PC careers as first year students and will compare to eventual specialty to determine changing PCP interest and drift to other specialties, describing trends based on student demographics. We will examine changing interest in caring for underserved populations from matriculation to practice by comparing MSQ data, GQ data, and eventual HPSA practice locations. Descriptive statistics, chi square analysis and logistic regression will be used to compare data and control for variables known to impact specialty choice, such as rural origin and age.
Innovation: Among medical students as a whole, there is a decline in interest in both PC and underserved care during medical school,9 but it is not known whether this decline is greater for URM students and students from rural communities. By using highly reliable existing retrospective datasets, the proposed study will generate new knowledge, potentially generalizable to other medical student populations as well.

Relevance to CFIR Mission and Vision and Sparrow Health System: A robust supply of PCPs is essential in order to transform the delivery of healthcare; implement high quality, safe care; improve patient outcomes, and lower costs. Medical students from diverse backgrounds are more likely to serve both rural and urban underserved populations, in mid-Michigan and beyond. Physicians from diverse backgrounds also foster high-trust patient-physician relationships with under-represented patients, improving patient satisfaction and engagement.7–8 Describing trends in specialty interest over the course of medical school may lay the groundwork for development of interventions that increase representation of URM and rural-origin students in PC specialties, and ultimately increase the size and diversity of the PCP workforce. This work is particularly relevant for Sparrow Health System, because 22% of MSU-CHM students educated at Sparrow eventually practice within 50 miles of the community.10

Timeline:

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<td>IRB approval (obtained).</td>
<td>Identify and train research assistant. Match and merge datasets. Confirm accuracy.</td>
<td>Analyze data. Submit work-in-process presentation(s).</td>
<td>Submit manuscript for publication. Submit R-21 to NIMHHD.</td>
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Researchers and Affiliations:

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Co-I: Julie Phillips, MD, MPH,1,2 Assoc. Professor; Asst. Dean for Student Career & Prof. Development

Co-I: Andrea Wendling, MD, Assoc. Professor; Director of Rural Medicine Curriculum

Co-I: James Olson, MD, Assoc. Professor; Director, Sparrow-MSU Family Medicine Residency Program1,2

Consultant: Wanda Lipscomb, PhD, Associate Professor; Associate Dean for Diversity and Inclusion2

1 Sparrow-MSU Family Medicine Residency Program, core faculty

2 Michigan State University College of Human Medicine

Dr. Edwards-Johnson is a junior faculty member with an interest in workforce diversity, particularly within family medicine. Drs. Phillips and Wendling are experienced researchers who have authored multiple studies examining the impact of medical student education on the primary care workforce and have experience managing large datasets. Dr. Phillips has expertise in student career decision-making; Dr. Wendling has expertise in rural diversity issues; and Dr. Lipscomb has extensive expertise in URM diversity issues. Dr. Olson is an experienced physician leader in medical education. All proposed researchers have actively collaborated to develop this proposal.

Potential for National Funding: We anticipate support for future research from the National Institute on Minority Health and Health Disparities (NIMHHD). PAR-16-222 specifically funds “innovative exploratory and developmental health services research to improve minority health and/or reduce health disparities at the health care system-level as well as within clinical settings.”11 We anticipate applying for R21. Future research will be based on results of this exploratory study, but may include ongoing quantitative assessment of URM and rural student attitudes toward family medicine and primary care, qualitative interviews to generate new hypotheses, or both. NIMHHD has previously funded similar work examining the outcomes of U.S. graduate medical education-sponsoring institutions, and identifying the characteristics of institutions producing physicians who practice in underserved communities (project #5K22MD006135-02, PI Candace Chen). This study will expand on this work by examining patterns of primary care and underserved interest, and eventual practice characteristics, among URM and rural-origin students.

1. AAMC Physician Shortages Factsheet. AAMC Center for Workforce Studies. 2014.
2. Zerehi MR. How is a Shortage of Primary Care Physicians Affecting the Quality and Cost of Medical Care in the United States?