ARTICLE

Pathways/Mentorship

Pathways to Physician Scientist Careers in Family Medicine

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Physician-scientists are an essential part of the medical research enterprise, but are underrepresented in the specialty of Family Medicine. The capacity to build an evidence base informed by the needs of a particular specialty is an essential role of researchers in academic departments at schools of medicine. When the number of primary care researchers is limited, research on critical health care issues specific to primary care will also be limited. Well-established pathways for the successful cultivation of physician researchers include the identification and recruitment of aspiring researchers at the college and medical school levels. Major investments in their training are needed to support them over significant periods of time, including through research-oriented residency tracks, focused fellowships, and rigorous mentored career development awards lasting well into the first decade of a postresidency career. Successful models for pieces of this pathway are present in some departments of family medicine but should be enhanced in a systematic manner, and need to be established in a much greater number of departments. Disseminating this model of the physician-scientist pathway across academic departments will be necessary to significantly expand the number of successful family medicine physician-scientists. (J Am Board Fam Med 2024;37:S49–S52.)

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Where We Are in Building a Family Medicine Physician-Scientist Workforce

The counterculture origin of family medicine that valued a nonreductionistic approach to medical care is what made our specialty irreplaceable for medical care delivery within the US.[1,2] However, from its inception, our specialty has recognized the importance of research generated by family physicians to provide an evidence base for clinical practice.[3] Despite substantial efforts to build a research enterprise, family physicians have been underrepresented among investigators funded by the National Institutes of Health.[4,5] A larger physician-scientist workforce needs to be created to provide this evidence-base. Robust pathways to careers for physician-scientists must be expanded in family medicine to ensure that the evidence base that underlies the care provided is informed by and influences the actual daily clinical experiences of the specialty. As shown in Figure 1, a range of pathways can lead to contributions to the evidence base of our specialty, however the leadership of substantial research efforts requires higher levels of investment in training that starts well before residency or even medical school and continues well into the junior faculty stage.

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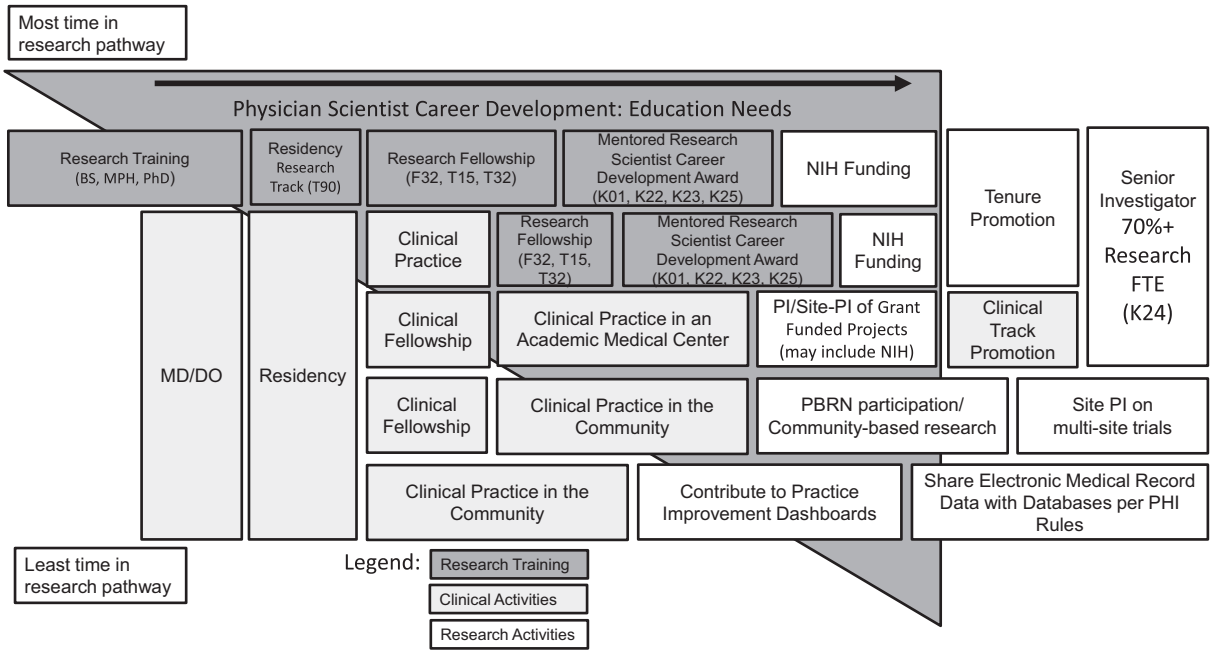
Figure 1. Pathways to physician scientist careers.



To do so, it is necessary to address obstacles to these pathways and learn from and disseminate successful models for building this capacity. Targeting earlier stage trainees, building out residency training in research, and supporting more robust and prolonged junior faculty development than is most common in current pathway efforts is needed.

Initiate Research Pathways Early

Discussions for sustaining the physician-scientist workforce have been ongoing for many years, and various programs to build the workforce have been proposed.[6] One approach is to promote the value of biomedical research and provide support for young learners by showing students the critical role of physician-scientists in biomedical advances. Achieving a physician-scientist workforce in family medicine requires a systematic plan that embraces a pathway program to recruit individuals long before residency or even medical school. Investment in adequate resources, including successful role models and mentors, well-defined goals and objectives, critical evaluation, and continuous process improvements are essential to the success of a pathway program at academic medical centers. Some successful programs to increase diversity in the health care workforce have targeted individuals as young as middle and high school students.[7] Noting that there is a declining number of physician-scientists across all medical specialties, the University of Connecticut has explored the potential for university student experiences to contribute to future researchers.[8] The program focuses on college students and provides research experiences and course content. Integrating students even younger than college may pay dividends but will need a systematic plan with well-defined goals.

Target Medical Students

The selection of a medical specialty by medical students aspiring to be researchers is a crucial point in the traditional pathway to a physician-scientist career; these may include those who have completed graduate degrees in research fields before coming into medical training or during that process (ie, MD-PhD programs) or are planning fellowships after residency.[9] Recruiting such candidates into family medicine residency programs requires providing evidence that opportunities for a successful career of rigorous research can be gained in that specialty through appropriate training. It is also critical to demonstrate that a research career in family medicine is rewarding and enjoyable. This evidence includes research opportunities for medical students to work with investigators leading federally funded research projects (AHRQ, PCORI, and NIH in particular). Researchers in departments of family medicine should engage in existing medical

school research opportunities/programs to provide an opportunity for a rigorous research experience in the summer between the first and second year of medical school or longitudinally based on the curriculum. Researchers should also engage with MD-PhD or MD-MPH programs in their schools to recruit students to complete graduate research projects with them.

Greater efforts are needed on this transition point in medical education to counter a common mistaken view that those interested in rigorous scientific careers should not choose family medicine.[10] Specific interventions needed to support this effort include programs that expose college and medical students to research experiences with teams led by or including family medicine researchers. These opportunities provide students with examples how family physician researchers can integrate research with primary care clinical work. Opportunities to include these learners are common within universities with medical schools and should be encouraged by departmental leadership with the clear aim of recruiting aspiring researchers to the specialty. Additional efforts are also needed to target medical students with research interests at state and national meetings; the annual AAFP National Conference for Residents and Medical Students in Kansas City, MO does not include content related to a rigorous research career, reinforcing the impression that there is no room for researchers in the specialty. Finally, clear prioritization of this effort by chairs of family medicine will help residency leadership develop this area of their recruitment. Coordination of efforts by research and residency faculty in these departments should also be explored.

Resident and Junior Faculty Research

Despite ACGME scholarly requirements for residents that have grown over the decades, family medicine as a discipline has focused more on implementing knowledge rather than creating new knowledge, and scholarship requirements generally focus on quality improvement or teaching.[10] In contrast, other specialties have focused on cultural aspects of research in residency training. Surgery has more than a third of their residents interrupt their residency training to pursue full-time research.[11] They have argued that facilitating research in residency is a way to change the culture and create more physician-scientists. Consequently, creating physician-scientists in family medicine is a cultural challenge that needs to be addressed.[12]

Adding or expanding research tracks within residency programs could be considered, and models that provide for longitudinal experiences exist with or without additional years of training such as The American Board of Family medicine approved Family Medicine Physician-Scientist Pathway (FM-PSP) Program.[13] While not all residents participating in such a track will ultimately choose to pursue a research-focused career, a meaningful research experience in residency will be attractive to some aspiring researchers. Identifying residents with interest and promise for a research career is critical to guiding them to an appropriate fellowship training program such as NIH-funded T32 post residency fellowships or programs such as the National Clinician Scholars Program[13]; fellowships that aim to build research skills for physician-scientists aim to prepare them for successful mentored career development award applications (AHRQ or NIH K series or similar mechanisms). It is important to recognize that such fellowships need not be based in a department of Family Medicine but may instead include faculty from the department and still achieve the goal of cultivating physician-scientists from the specialty.

Protected time for research, both in developing a career and for doing pilot studies is critical. there are a range of career development grant opportunities from both the government and foundations that are designed for exactly those purposes. Providing some protected time for faculty who are clearly on track to becoming a funded investigator is a common approach. A commitment from academic departments for 3 years to get promising faculty members up to speed is not unusual. Clinical revenue tends to subsidize that 3 year period. However, this funding is generally limited to the few individuals who have clearly expressed a desire for a career path as an investigator with an expectation of moving aggressively toward grant funding. Some authors have argued that clinical revenue should be used to provide protected time to the more general group of academic faculty.[14] It is likely that there is not enough surplus funds to provide protected time for all academic faculty beyond a small amount but providing that initial buffer for junior investigators seems useful and necessary for future success.

Mentored career development awards from the NIH are generally from 3 to 5 years, require a 75% effort commitment to research, and aim to prepare an investigator to compete for the R series awards at

NIH. While not absolutely necessary for research success, these awards provide an unparallelled opportunity for rigorous scientific research skill development and are a sign of early investment of the leading funder of bio-medical research in the careers of specific investigators and are markers of early success and promise. Because the career development awards do not generally cover the full salary of a physician, it is necessary to have the commitment of departments to support the junior faculty member through this period with the promise of grant success to follow; this is an investment that leading academic departments of family medicine must make.

Summary

Recognizing that physician-scientists are critical to family medicine and ensuring the development of this workforce requires substantial enhancement of the pathways to research. Particular attention is needed on those aspiring to research-centered careers early in the pathway. Recruiting aspiring researchers to family medicine and supporting adequately robust training to support success as an independent investigator is aligned with successful practices both within and outside the specialty. A systematic effort to enhance and disseminate this career development pathway model among academic departments of family medicine is an essential need for the specialty.

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