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Creating Educational Leaders: Experiences with Two Education Fellowships in Emergency Medicine

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Abstract

Academic physicians aiming to build careers on the scholarship of teaching require specific career development opportunities designed to provide the skills necessary for successful advancement and promotion as clinician-educators and scholars. Completing this training prior to embarking on an academic career may facilitate a smooth transition to a faculty position, and establish mentoring networks and research collaboratives. This article describes two pilot medical education fellowships that have been successfully implemented in separate and unique departments of emergency medicine (EM). By comparing and contrasting the curricula and incorporating the experiences of graduating 10 EM education fellows over the past decade, the authors propose a fellowship structure that may be adapted to meet the needs of medical educators in a broad variety of fields and disciplines.

INTRODUCTION

Over two decades ago, Boyer, and Glassick et al. introduced the term “scholarship of teaching,” redefining professorial advancement to include four aspects of scholarship: discovery, integration, application, and teaching.[1,2] Promotion and tenure committees have developed specific benchmarks to evaluate educational scholarship, addressing the difficulties that clinician-educators face documenting their unique scholarly contributions in traditional academic pathways.[3–5] However, with the expanded definition of scholarship now firmly in place, the role of the “educator” has also been redefined. Today’s educators are still expected to be active clinicians and enthusiastic teachers, but advancement and promotion additionally require scholarly productivity, including the publication of peer-reviewed, enduring educational materials, reliable and valid assessment instruments, and the evaluation of outcomes of educational interventions. Recognizing the need for existing faculty educators to acquire and refine these skills, over half of U.S. medical schools have instituted some form of faculty development for established clinician-educators.[6–20]

Education leaders in EM have recognized a similar need. The Emergency Medicine Foundation/American College of Emergency Physicians Teaching Fellowship, and the Council of Emergency Medicine Residency Directors collaborative with the Association of American Medical Colleges’ Medical Education Research Certificate program

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(MERC,)[21–23] enhance skill development, the formation of national collaborative networks, and mentoring. However, educators participating in such programs as full-time clinicians and academicians have limited time to devote to their own faculty development.

An alternative training pathway is a formal post-graduate fellowship in medical education modeled after Accreditation Council for Graduate Medical Education (ACGME)-accredited fellowships designed to provide residency graduates with the protected time and structured training necessary to develop subspecialty expertise. Fellowship training is increasingly recognized as a valuable precursor to a successful academic career. Stern asserts that fellowship training is necessary and that the benefits of mentorship and protected time for professional development will enhance graduates' likelihood for career satisfaction, leadership opportunities, and the development of expertise in one's area of interest.[24] A career outcomes study of primary care physicians showed that those who were fellowship trained were more productive academically and reached higher academic ranks.[25] Academic surgeons who completed an academically oriented fellowship were more likely to be satisfied with their careers than those who had not undergone training.[26]

We describe two full-time post-graduate fellowships in medical education at separate academic departments. Based on our combined experience over the past decade, we have compared our two-year curricula and proposed a suggested structure for education fellowships in EM, framed in the curriculum development approach described by Kern et al.[27] This curriculum template is intended to train future leaders in medical education, and can be adapted and applied to fields outside of EM.

MEDICAL EDUCATION FELLOWSHIP CURRICULUM

Problem Identification and General Needs Assessment

There are limited opportunities for EM residency graduates to pursue formal medical education training prior to attaining a full-time academic EM faculty position. This deficit affects residency graduates, faculty, department chairs, learners, and ultimately patients. Lack of proper preparation may diminish academic productivity, career satisfaction, faculty retention and promotion rates, departmental costs and resources, achievement of learner competency, and patient care outcomes. A literature review demonstrated a lack of any published curricula or outcomes for dedicated post-graduate medical education fellowships. Targeted learners are recent graduates of accredited EM residency programs who wish to develop an academic niche of expertise in medical education scholarship.

Goals and Objectives

The goal of the fellowship is to provide formal training in adult learning theory and the skills necessary to navigate a successful career path as an education scholar.

Learning Objectives—The two-year fellowship experience will prepare the learner to:

1. Apply tenets of adult learning theory.
2. Employ multiple strategies for effective clinical teaching.
3. Design, implement, and evaluate curricula and enduring educational materials.
4. Develop an educator's portfolio, and describe the steps needed to achieve academic advancement and promotion as a clinician-educator.
5. Function as an academic leader, such as a clerkship director, residency program director, assistant dean, or chair of a national education-related organization or committee.

6. Design and implement methodologically sound medical education research projects.

Educational Strategies

The education fellowship has four basic components: Clinical, Didactic, Administrative/Service, and Research. Sample components for the respective fellowships are shown in Table 1. The *clinical component* includes the hours that the fellow works in the emergency department (ED), and represents service to the department, generation of revenue, and refinement of clinical skills. Clinical time allows fellows to engage in modeling patient care and bedside teaching, serving as a "practical classroom" for the adult learning theory and specific teaching skills the fellow is developing. Fellows develop leadership and team management skills while attending in the ED. The *didactic component* is comprised of lectures, practicum, small group sessions, formal master's or certificate programs, or online learning, and is designed to deliver the core content of the fellowship. The *administrative or service component* describes the academic roles and responsibilities of the fellow, which include both service to the educational mission of the department or medical school, and experiential training for the fellow. The *research component* includes a strategy for interpreting the existing medical education literature and becoming familiar with the common study designs (e.g., experimental, quasi-experimental hypothesis testing research, survey methods, and qualitative methodology). The fellow designs and implements project(s), which may be quantitative or qualitative, with an educational focus. Sharing of the work at scientific meetings and through peer-reviewed publication is essential.

Implementation

Potential fellowship directors can model the implementation on existing non-ACGME fellowships at their institutions, such as research, administration, global health, or simulation. Clinically, our fellows function in the same capacity as other attending physicians in our clinical ED and may benefit from reduced clinical hours to focus on their own education, which serves as their top non-clinical priority during the duration of the post-graduate fellowship. Salary and benefits may be administered through the institution's Graduate Medical Education office, Department of EM, or extramurally. The clinical revenue fellows generate in patient care activities may subsidize this cost. Departments with different approaches to profit-sharing and clinical bonus structures will have institutional-specific approaches toward salary supplementation, benefits, tuition stipends, and continuing medical education allowances.

Evaluation and Feedback

Fellows receive regular structured feedback from the fellowship director regarding progress towards achieving the objectives of the curriculum. Fellows participate in a formal annual performance evaluation that is adapted from the annual review process already in place for faculty. This formal annual evaluation may be conducted by the fellowship director, vice chair for education, or department chair, depending on the organization of the department.

The fellowship curriculum should be revised annually based on fellow feedback and assessment of whether fellows are consistently achieving the objectives of the curriculum. It is important to implement a mechanism for keeping in contact with fellows after graduation, as some outcomes may only be measured longitudinally. Fellowship directors may apply models for continuous review that have been adapted from local medical school or residency programs, or published models for fellowships in other fields.[28,29]

OUTCOMES

It is feasible to implement an EM medical education fellowship. Our fellowships were created in 2000 and 2005, and a total of 14 fellows have matriculated, with 10 successfully completing the fellowship to date. Job descriptions of the graduated fellows are listed in Table 2. Our fellows have reported that fellowship training provided a distinct advantage during the job search, and many of our graduates have transitioned into roles that built on the niches and areas of interest that they developed during their fellowships. From a program perspective, we have made annual revisions to our specific fellowship curricula to meet changing availability of mentors and educational opportunities, and to meet the needs of the fellows. For example, one fellow's primary interest was to gain expertise in simulation in medical education. For this fellow, individual curricular elements included simulation as the preferred method of delivery of information, when appropriate. Collaboration with our institution's and nationally recognized leaders in medical simulation was of great importance. Another fellow matriculated into the fellowship with an expressed interest in exploring the use of humanities for teaching and evaluating interpersonal communication skills and professionalism in medical education, improving empathy in clinical practice, and nurturing physician wellness. Her mentored fellowship project involved designing and implementing a Humanities in Medicine elective for medical students, and she was matched with mentors with expertise in this area. Upon graduation, she was recruited to an institution that is developing a Foundry in Arts and Humanities in EM, and she is leading efforts to launch this entity with the university.

We have identified several ways that our medical education fellowships are an asset to our departments. First, as the fellows have engaged in various local, regional, and national training opportunities, they have developed mentor relationships and networks that continue to facilitate collaboration within and between institutions, even after the fellows have graduated. These relationships serve as a resource for chairs of academic departments to promote ongoing scholarship for all faculty. Second, the energy, interest, and commitment that the fellows have brought to their service and administrative roles have increased the productivity of our education sections, and allowed for a steady stream of new ideas and perspectives into our established educational curricula. Finally, the fellows have disseminated the clinical teaching training they have received by role modeling in medical student and resident education, and leading faculty development opportunities for a broader audience. Feedback from annual performance reviews demonstrates that our fellows have consistently met expectations for scholarly productivity, but further follow-up is needed to determine the long-term effects of fellowship training on our graduates' academic performance, career satisfaction, and success with career advancement.

DISCUSSION

Our work builds upon previously described faculty development initiatives with an innovative structure and timing for fellowship training that has not yet been proposed in the medical education literature. This format has been designed specifically for EPs, but draws on content and needs that may be adapted for implementation into any field of medicine.

There are two design features of our proposed model that are instrumental. First, in order to build the expertise and scholarly products described in our objectives, we have implemented a two-year format rather than a single year. We believe the two-year format allows the fellow to attain the knowledge and practical teaching experience necessary to build expertise and then apply the new knowledge and skill in scholarly endeavours. A two-year period appears to be sufficient for rigorous training in master's level degree or certificate programs, which confer external validity to the time spent during the fellowship years acquiring the

skills necessary for educational leadership (personal communication, G. Kuhn, April 2011). Many institutions offer certificate or degree programs that range from a practical teaching certificate, to educational leadership and administration degrees (EdM and EdD), to a PhD that focuses on research. Potential candidates should consider whether the intent of the proposed degree will help them achieve their career goals, and whether it is specific to medical educators. Strategies to meet program costs include: interdepartmental collaboration to waive tuition, augmented fellow salary support for tuition (may have tax advantages), departmental support, or extramural funding.

A second design feature that is integral to the success of the fellowship is designating a committed mentor for each fellow. In contrast to a new faculty hire with a pre-defined administrative assignment, the fellow's primary goal is career development. It is the fellowship mentor's responsibility to groom the individual for success, and coordinate institution-specific resources and opportunities to provide the fellow with a rich and productive training experience. This may include introducing the fellow to other academicians who share similar interests, facilitating collaboration in the area of interest, and supporting the fellow throughout the learning process. Creating a fellowship opportunity that is dynamic enough to meet the diverse needs of medical education sub-specialists requires a close mentor-mentee relationship.

Other successful fellowships may exist that have not been described formally in the literature. As we gain collective experience from emerging post-graduate opportunities, long-term outcomes can be measured. Most of our graduates are currently junior faculty and may not have yet fully realized the benefits of their fellowship training. We did not perform a systematic comparison of our fellowship graduates and other junior faculty in educational leadership roles for productivity or career satisfaction. Outcomes that we hope to follow with quantitative and qualitative follow-up studies include: evidence of scholarship (including publications and presentations), career trajectory (time to promotion, retention rates, awards and recognition), evidence of leadership (institutional, national, medical schools, residency programs), and effect of fellowship training on career satisfaction and quality of life measures.

CONCLUSIONS

Postgraduate fellowship training in medical education provides EM residency graduates with the time and skills necessary for an academic career, including leadership, scholarship, and teaching. Ongoing mentorship will maintain a network of medical educators in EM.

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Table 1

Education Fellowship Structure Examples

	Example A	**Example B**
Didactic	Master's degree or certificate program, with individual mentoring by fellowship director and designated research mentor Navigating academic waters (CORD) Institution-specific educators' curriculum ACEP teaching fellowship	University's Faculty Medical Education Fellowship (certificate program), with individual mentoring by fellowship director Navigating academic waters (CORD) Pre-clinical course faculty development classes Departmental fellowship curriculum
Clinical	56 clinical hours per month in ED as clinical instructor	56 clinical hours per month in ED as clinical instructor
Administrative	Member of Department of EM Education Committee (policies, evaluations, resident selection, RRC preparation, etc.) Mentored co-director of didactic curriculum Faculty mentor for medical students and residents Course faculty (small group leader, clinical preceptor) for pre-clinical course in medical school	Member of Department of EM Education Committee (policies, evaluations, resident selection, RRC preparation, etc.) Sub-internship Assistant Director (mentored course directorship, SLOR writing, feedback, evaluations) Faculty mentor for medical students Leadership role in the Acute Care College and member of advisory board Course faculty (small group leader) for pre-clinical course in medical school
Career Expertise Development	Fellow develops expertise in desired area (e.g., specific core competency, simulation, administration, medical topic). Assist in preparation of textbook chapters, reviews Lectures to residents and students	Fellow develops expertise in desired area (e.g., curriculum development, simulation, administration, medical topic). Assist in preparation of textbook chapters, reviews Lectures to residents and students
Research	Fellowship capstone or master's thesis integrated with master's degree or research certificate program Presentation at scientific meetings and submission for publication	Mentored research projects with fellowship director and medical school department of Educational Development and Research Presentation at scientific meetings and submission for publication

CORD = Council of Residency Directors; ACEP = American College of Emergency Physicians; RRC = residency review committee; SLOR = standard letter of recommendation

Table 2

Job descriptions of graduates of two education fellowship programs

Director of Continuing Education
Director of Longitudinal Preceptorship (mandatory third year medical school course)
EM Residency Program Director
Director of Education (for residents rotating through community site affiliated with EM residency program)
EMS educator (designs programs for EMS providers at a rural hospital)
EM Residency Program Director, Fellowship Director
Director of Simulation Education
AHRQ-funded education researcher, School of Medicine Teaching College Faculty Mentor
Clinician-Educator,
Steering Committee Member, Center for Medical Humanities
Education Faculty, with a focus in simulation and education research.
Core education faculty

EMS = emergency medical services; AHRQ = Agency for Healthcare Research and Quality