Published in final edited form as:

South Med J. 2018 August ; 111(8): 471–475. doi:10.14423/SMJ.00000000000000844.

Moving Career Development Upstream: Evaluation of a Course for Internal Medicine Trainees Contemplating Career Pathways in Academic Medicine

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Abstract

Objectives—Despite training in academic medical centers, many residents and fellows lack an understanding of the different career paths in academic medicine. Without this fundamental knowledge, choosing an academic career pathway and transitioning to junior faculty is challenging. We started the Pathways in Academic Medicine course (“Pathways”) to introduce residents and fellows to the wide array of academic career pathways and to expose them to the concepts and resources needed to transition successfully from trainee to junior faculty.

Results—Sixty-nine medicine residents and fellows participated in Pathways programming. Surveys and focus groups revealed high satisfaction with the course sessions. Trainees indicated that Pathways helped them to envision an academic career, clarified the steps needed to pursue an academic career, and normalized common challenges.

Conclusions—Pathways is an important educational innovation that gives participants experiences to jumpstart successful careers in academic medicine. We hope that our program will serve as an example for other institutions interested in improving the trainee-to-faculty transition.

Keywords

academic medicine career; career development; career transitions; mentoring

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The remaining authors did not report any financial relationships or conflicts of interest.

None of the authors have any proprietary interest in any aspect of this article or in the UAB Pathways in Academic Medicine program.

Physicians-in-training experience several notable career transitions—from layperson to medical student, medical student to resident, (in some cases) resident to fellow, and finally resident/fellow to practicing physician.¹ Perhaps the most challenging transition is the final one, which often represents the first time the trainee commits to a long-term career path beyond specialty selection. The trainee may be confronted with questions about the advantages of private practice versus academics, and if academics is chosen, whether to pursue a career as a clinician-educator/leader or a clinician-investigator. Little time is spent during medical training explicitly discussing career options.

Previously published programs have addressed the acquisition of teaching and research skills among residents^{2–6} and junior faculty career development.⁷ There has been little focus, however, on department-wide programs for residents and fellows specifically aimed at career development. To our knowledge, only one program is reported in the literature that directly addresses career development for physicians-in-training with academic aspirations, which targets pediatric subspecialty residents.⁸ Given this training gap, we sought to devise a program aimed at helping residents and fellows across our Department of Medicine better understand careers in academic medicine. We viewed this as an opportunity to intervene with trainees who may benefit from preparation before rather than after they assume the challenges of an academic career. Furthermore, more residents train in internal medicine or a medicine subspecialty than any other field⁹; therefore, a career development program for internal medicine trainees would represent an important advance. Our program aimed to introduce the wide array of academic career pathways and expose participants to relevant concepts and resources that they could use to jumpstart an academic career.

Methods

Program Description

The University of Alabama at Birmingham's Department of Medicine (UABDOM) Pathways in Academic Medicine program ("Pathways") was inspired by course faculty's experience in mentoring senior residents and fellows. We noticed that trainees often made crucial career decisions close to graduation.¹⁰ This prevented them from gaining experiences that would inform them about the benefits of choosing private practice versus academics, obtaining research training, or developing additional specialized clinical expertise ideal for an academic position.

In 2014, we developed a 2-week course held in August for 2 hours each afternoon for residents and fellows in the Department of Medicine who were interested in academic careers. The course content was inspired by a course at the University of Pennsylvania in which two of the study's authors (J.S.M. and A.N.) participated during their residencies (a 2-week, full-time elective for second- and third-year residents covering both career development and basic research methods). At the completion of the UABDOM 2-week course, based on session evaluations as well as conversations with attendees and program leadership, we identified the most useful sessions that would be carried forward into future iterations of the course. This process also allowed us to refine course delivery logistics, and the course was changed to a monthly longitudinal program.

Going forward, we structured Pathways as a 3-hour evening retreat, and 12 seminars throughout academic year 2015–2016. Resident retreats, held in May and June, were targeted to second-year residents about to begin the fellowship or job search process. The fellow retreat was held in September to reach first-year fellows who were making decisions about their second year (or beginning a job search, in the case of a 1-year fellowship). All of the retreats included a broad overview of the career possibilities in academic medicine, advice for trainees on finding their academic niche, a comparison of academics versus private practice, and a panel discussion with junior faculty who had transitioned recently to academic careers (Table 1). At the conclusion of each retreat, interested participants could sign up for year-long programming in two tracks: clinician-educator/leader and clinician-investigator (Table 2). The six clinician-educator/leader seminars were held during the noon hour with lunch, while the six clinician-investigator seminars were held in the early evening with dinner, but protected time was not provided for any seminar. The sessions were coordinated by Pathways faculty identified as exemplar clinician-educator/leaders or clinician-investigators. The UABDOM provided meeting space, food, and salary support for the course director. The UAB Center for Clinical and Translational Science funded the program's evaluation.

Program Evaluation

Our program evaluation was designed by the investigators in collaboration with the Evaluation and Assessment Unit in the UAB School of Public Health. The evaluation methodology was based on Kirkpatrick's model for training evaluation.¹¹ Kirkpatrick's model comprises four levels: (1) reactions (did the participants like the training?), (2) learning (did the participants learn what was intended from the training?), (3) behavior (did the participants put material from the training to use?), and (4) results (what outcomes can be attributed to the training?). Our early program evaluation, reported here, focused on levels 1, 2, and 3.

Our evaluation had two components: surveys and focus groups. We conducted surveys before and after the retreats and after each session throughout the year. These surveys quantitatively evaluated participant satisfaction (Kirkpatrick level 1), usefulness of the content (Kirkpatrick level 1), and self-reported understanding of available career pathways in academic medicine (Kirkpatrick level 2). Two hour-long focus groups were conducted by a trained focus group leader (J.F.W.): one to discuss the clinician-educator/leader pathway, and one to discuss the clinician-investigator pathway. The purpose of the focus groups was to understand how participants have used or will use information learned in the course (Kirkpatrick level 3) and how, if at all, the course influenced their thinking on their choice of academic medicine as a career (Kirkpatrick level 3). Inclusion criteria were that the participants attended the retreat plus at least one other session in the relevant pathway. These focus groups were audiorecorded and transcribed. This project was granted an educational evaluation exemption for human subjects research by the UAB institutional review board.

Statistical Analysis

Survey data were collected using Qualtrics. Session attendance and selected survey data were tracked per participant in an SPSS database (IBM SPSS Statistics, Armonk, NY)

across the program year. Basic descriptive statistics were generated for each session and retreat. The primary analysis is qualitative in nature. Two of the coauthors (J.S.M., J.F.W.) reviewed the focus group transcripts and coded thematically. A larger group of the authors (R.R.K., A.N., J.F.W., N.E., J.S.M.) met to discuss the coding scheme and select representative quotes.

Results

Sixty-nine trainees (41 residents and 28 fellows from a total of 224 trainees in the UAB Department of Medicine [31%]) participated in at least one Pathways session (a retreat or 1 of the 12 year-long sessions, mean 2, standard deviation 2). Fellows' specialties included cardiology, endocrinology, gastroenterology, geriatrics, hematology/oncology, infectious diseases, palliative care, and rheumatology. Participant ratings of overall satisfaction and perception of usefulness (Kirkpatrick level 1), as well as the extent to which each session was successful in increasing understanding of academic career pathways (Kirkpatrick level 2), were high for both retreats and sessions (Table 3).

Focus groups revealed three main themes. Pathways allowed trainees to envision an academic career, clarified the steps needed to pursue an academic career, and normalized the challenges encountered. Table 4 includes comments and representative quotes for each theme.

Discussion

To our knowledge, this is the first published description of a program designed to address important gaps in internal medicine trainee knowledge about academic career pathways. Pathways participants were satisfied with the curriculum. They were appreciative of receiving information that helped them envision an academic career, clarify necessary steps, and normalize common challenges. In addition, our qualitative work suggests that the information they learned during Pathways is not found elsewhere during internal medicine training and is not learned simply by existing within an academic medical center as a trainee.

We hope that our program will be an example for other institutions interested in improving the trainee-to-faculty transition. Although an important limitation of our work is that Pathways was implemented and studied only at one university, there are lessons that may be applied more broadly. The Pathways course has benefited from a financial investment from the UABDOM (8% salary support for the course director and a \$2500 annual food budget) and from enthusiastic endorsements by the department chair, residency program director, and other leadership. These conditions could be replicated at other institutions. In addition, Pathways topics are sufficiently broad and experiential that many large academic medical centers will have individuals with the necessary expertise.

We note that although the Pathways leadership frequently provided one-to-one advice and mentorship informally during the year, there was no formal mentorship component to our course. Other institutions initiating a similar course may consider adding a mentorship component to further improve the trainee-to-faculty transition.

We acknowledge that course attendance was modest, but it was a good start for a new program that is optional among trainees in clinically busy programs. Attendance was strongest at the retreats (38 trainees) and at the fall/winter sessions, with lower attendance in the spring. To increase attendance going forward, we are partnering with many of fellowship program directors to provide interested fellows with protected time to attend. Several of our fellowships are making this a program improvement project to help fulfill Accreditation Council for Graduate Medical Education requirements. Although we have been unable to secure protected time for the residents to attend, we are coordinating with the residency office to schedule Pathways sessions on days when there are no competing conferences for the residents. Because our spring sessions had more competing conferences, we are starting the conference series earlier in the fall to finish earlier in the academic year. We hope these efforts and the incorporation of continuous feedback from participants will increase course attendance and make the program sustainable. In addition, to address Kirkpatrick's final level, we plan to track long-term program outcomes, such as career choice and job placement.

Conclusions

Many of our medical trainees are interested in careers in academic medicine. In response to this desire, programs around the United States have developed resident-as-teacher programs to instruct residents in basic teaching skills.¹² More recently, many programs have developed clinician-educator/leader and clinician-investigator tracks to provide more specialized teaching and research skills. Clinician-educator/leader tracks often focus development in several areas, including clinical teaching, curriculum development, administration, and education scholarship.² Clinician-investigator tracks often provide significant time to perform research on and training in research-related skills. Despite having such tracks at our institution, we found a more basic need among our residents and fellows. Our trainees wanted a clearer picture of what the day-to-day life in academic medicine entails. They wanted to know the various clinical, teaching, administrative, and research components that can make up a faculty member's duties. They valued seeing examples of different academic career paths and hearing about career options that they could pursue. Furthermore, they wanted to know what steps are necessary to achieve academic success and what pitfalls lie along the path. They relished hearing stories of success and failure, which serve to normalize common challenges. Finally, they appreciated advice on practical topics such as how to find and use mentors, how to write and strengthen one's curriculum vitae, and how to find an academic job.

Pathways represents an educational innovation that gives residents and fellows exposure to concepts and resources critical to understanding the various career paths in academic medicine. We hope that, armed with this knowledge and understanding, trainees will acquire the jump-start they need to have successful careers in academic medicine.

Acknowledgments

We acknowledge the UAB Department of Medicine and Center for Clinical and Translational Science for their support of the Pathways program and our mentors at the University of Pennsylvania, Drs Vincent LoRe and Lisa Bellini, for their input during initial course development.

This research was supported by the National Center for Advancing Translational Sciences of the National Institutes of Health and the University of Alabama at Birmingham (UAB) Center for Clinical and Translational Science (UL1TR001417).

The opinions or views expressed in this article are those of the authors alone and do not reflect the views of the US Department of Veterans Affairs.

R.R.K. has received compensation from the National Center for Advancing Translational Sciences of the National Institutes of Health and the UAB Center for Clinical and Translational Science (UL1TR001417) and the American College of Physicians.

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Key Points

- Despite training in academic medical centers, many residents and fellows lack an understanding of the different career paths in academic medicine.
- Trainees indicated that the University of Alabama at Birmingham Pathways in Academic Medicine program helped them to envision an academic career, clarified the steps needed to pursue an academic career, and normalized common challenges.
- The Pathways program can be replicated at other institutions to give trainees the jump-start they need to have successful careers in academic medicine.

Table 1

Summary of retreat content

Talk title	Speaker	Content overview ^a
Careers in Academic Medicine: Looking at Your Options	Former dean	Reviewed options for academic careers, expectations of clinician-educators and clinician-investigators, and the tenure and promotion process
Finding Your Niche	Midcareer clinician-educator	Discussed examples of different career paths and provided general advice about finding a niche
Choosing Between Clinical Practice and Academics	Various clinicians in academics and private practice	Compared and contrasted academics with private practice
Panel Discussion with Junior Faculty	4–5 junior faculty	Engaged in a discussion of career paths, day-to-day job responsibilities

^a A total of 40 minutes per topic with a 5-minute opening, closing, and 10-minute break.

Table 2

Summary of clinician-educator and clinician-investigator track content

Session	Clinician-educator track	Clinician-investigator track
1	<i>How to Find and Use Mentors</i> Professor, senior clinician-educator	<i>Finding a Research Mentor</i> Associate Dean
2	<i>The Clinician Educator's Role in the Academic Medical Center</i> Chair, Department of Medicine	<i>Finding Your Research Niche</i> Panel of senior clinician-investigators
3	<i>Career Strategy for the Clinician-Educator: Treat It Like a Business</i> Business school faculty	<i>Career Strategy for the Clinician-Investigator: Treat It Like a Business</i> Business school faculty
4	<i>Strengthening Your Application and CV</i> Chair, Department of Medicine, promotion/tenure committee	<i>Training Grant Alphabet Soup (Ks, Ts, and Others): What They Are and How to Get One</i> Panel of current awardees and internal program staff
5	<i>Scholarship in Medical Education</i> Senior clinician-educator	<i>How to Be Productive in Research as a Resident/Fellow</i> 4–5 fellows
6	<i>The Trainee to Faculty Transition</i> 3–4 clinician-educator faculty members	<i>Ask Me the Tough Questions: Research Nuts & Bolts</i> Junior clinician-investigator

Table 3

Evaluation results

Measures	Mean score (SD)		
	Retreat	Monthly sessions by track	
		Clinician-educator	Clinician-investigator
Overall satisfaction (Kirkpatrick level 1) (1 = not at all satisfied, 5 = very satisfied)	4.6 (0.7)	4.6 (0.7)	4.7 (0.6)
Perception of usefulness (Kirkpatrick level 1) (1 = not at all useful, 10 = very useful)	8.5 (1.7)	8.1 (1.5)	8.8 (1.3)
Program success at increasing understanding of academic career pathways (Kirkpatrick level 2) (1 = not at all successful, 10 = very successful)	8.4 (1.5)	7.9 (2.1)	8.8 (1.4)

A total of 38 participants (17 residents and 21 fellows) attended one of the three retreats, and 34 (89.5%) responded to the postretreat surveys. A total of 48 participants (29 residents and 19 fellows) attended at least one monthly session, and the survey response rates varied from 29% to 100% across sessions, with nearly all of them >75%. SD, standard deviation.

Table 4

Summary of qualitative findings

Theme	Comments and quotes
Envisioning an academic career	Multiple participants explained that Pathways allowed them to better envision an academic career. For one participant, hearing speakers discuss their own personal trajectories was particularly helpful in this regard: "I just wanted to see people, what was their personal journey through academic medicine.... I am getting closer to that point, so I wanted to concretely start visualizing what my career could be like."
	One participant reflected on whether Pathways changed his likelihood of going into academic medicine. Although it may not have made him more or less likely to have an academic career, it enhanced his understanding of what academics entails: "I think my likelihood is about the same as it was, but at least I know and have a better understanding of what the career would look like. I think that has been invaluable."
Clarifying the steps needed to pursue an academic career	Several participants believed that Pathways clarified the steps needed to pursue an academic career. Some participants mentioned particular talks that were helpful in this regard (e.g., scholarship in medical education, strengthening your application and curriculum vitae). Others spoke more generally. For example, one participant stated: "It [Pathways] hasn't really changed my mind [about a career in academics], my career aspirations. I think it has just given more transparency to the steps involved."
	This participant went on to explain that understanding the steps needed to pursue an academic career is an important curricular gap, and how the Pathways presenters, all of whom were chosen because they are successful academicians, helped with this clarification process: "There are a lot of very obvious questions that we all have but ... there is not really a forum for us to sit and learn about these topics.... We have to navigate those waters on our own. I think the fact that Pathways has been successful shows that we all have these questions that can be easily addressed by people one or three or five steps ahead of us."
	Another participant underscored the importance of storytelling by successful academicians: "I really like hearing the stories of different faculty members and what their thoughts were when they were in our shoes and the steps that they took to get to that spot in their career."
Normalizing the challenges encountered	Many participants reflected that Pathways was reassuring. For example, seeing successful academicians whose path was not "linear," as one participant put it, was especially valuable. For example: "It is very reassuring to trainees to see that well this person is now a successful junior faculty, but she actually used to do research on X and didn't work out or you know, lost funding.... It is really helpful for the trainees to recognize that everybody has had some missteps along the way and it is still feasible to achieve this goal."
	Another participant explained how helpful it was to see examples of the challenges that aspiring academicians face: "I think it kind of makes you realize that we all deal with this. We all go through the same situations.... Just seeing people who are recently going through the same process you are does help."
	Normalizing challenges also can make a successful academic career seem more attainable: "I think it made me realize it was more feasible than I expected. Yes, you need to work a lot. But you need to work a lot at everything. As long as you have your goals and you keep doing stuff and just take opportunities as they come, it made me realize I shouldn't be as stressed as I thought I should."