Bridging the Gap for Future Clinician-Educators

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Abstract

Background: In contrast to the training required in the UK, opportunities for medical education training in the US are limited. Resident-as-teacher programs are typically insufficient to prepare trainees to be successful clinician-educators, but few pursue formal education degrees. We sought to assess the need for and feasibility of a training pathway for subspecialty fellows in a large Department of Medicine that would prepare our trainees to be effective educators.

Methods: Quantitative and qualitative methods were used. Previous fellowship applicants and current program directors were surveyed to determine the potential benefits of the program. A pilot program was conducted with fellows interested in education to determine the feasibility of the program. Pilot participants were interviewed regarding the benefits they gained from the pilot and the logistical challenges they experienced.

Results: Five highly-ranked fellows would have ranked our programs higher if we offered this training pathway. Pilot participants and fellowship program directors agreed that there is a compelling need for such a training pathway. A number of themes arose from the interviews that enabled us to build the framework for a strong program.

Discussion: Our findings suggest that a clinician educator training pathway that draws from multiple subspecialties has the potential to improve recruitment, provide needed career counselling and skills development to trainees, and to build a community of educators that will benefit the institution. Important insights from pilot participant interviews will inform program design, in order to keep trainees engaged and overcome logistical challenges.

Introduction

The role of the clinician-educator (CE) has evolved over the past several decades in the US; it now involves varying degrees of teaching and education administration responsibilities in addition to clinical duties.[1, 2] Those seeking promotion for their work as CEs often must demonstrate scholarship and leadership as both educators and clinicians.

Indiana University's internal medicine department has 184 residents and 87 fellows (who are completing an additional 1-3 years of subspecialty training after residency). A resident-as-teacher program is delivered to all residents via a brief session during orientation and a 2-day retreat during the second year. Skills gained from these types of programs are sufficient for teaching medical students. However, we believe that a few teaching workshops do not fully prepare trainees to be successful clinical education leaders.

While the UK maintains professional standards that describe the training and skills required of their medical educators.[3] In contrast, , training in health professions education is not required in the US, although some educators choose to pursue a formal degree, certification, or attend faculty development workshops, and some learn informally from role models. Formal programs provide the most complete training experience but are expensive and time-consuming. A number of programs have recently been created for the purpose of training future CEs,[4-7] and these have been shown to be a valuable recruitment tool.[6, 8] By conducting a needs assessment and pilot program, we sought to further explore the need for and process to embed a clinician-educator training pathway (CETP) into an existing fellowship program.

Methods

Needs assessment

To assess the need for this program, we sought to determine how the program might benefit our fellows and our institution. We first surveyed fellowship applicants who were ranked highly enough to match into our department's fellowships, but who chose to train elsewhere. Email addresses were obtained from six of 12 fellowship program directors (PDs), and applicants were sent a link to a survey (see Appendix A) using REDCap.[9] Responses were collected anonymously, but applicants could supply an email address to be randomly-selected to win one of four $25 gift cards. Our fellowship PDs also completed a survey about the need for and benefit of this type of program (see Appendix B). Surveys were developed by two authors with training in survey design based on review of the literature and data needed to plan the program. Means and standard deviations were calculated using Microsoft Excel, where appropriate.

Pilot program

The goal of this portion of the project was to determine the benefit of the pilot for fellows and to gather perspectives to inform the development of the full CETP program.

PDs from Internal Medicine subspecialty fellowship programs at our institution nominated fellows with an interest in education. Participants provided informed consent at the time of their enrollment. We chose topics to provide a sampling of those in similar programs, emphasizing career development and teaching strategies.[4, 5, 10] The sessions included:

- What does a career as a CE look like?

- Assessing learners

- Bedside teaching

- Turning your clinical work into scholarship

- Teaching clinical reasoning

- Giving effective feedback

- Preparing and delivering a lecture

The sessions were held in a conference room central to clinical practice sites every other week from 5pm-6pm on Wednesdays, between August and November 2016. Facilitators were chosen based on their subject-matter expertise and availability. Refreshments were served as a way to build community and incentivize participation. Approximately 40 minutes of each session were spent delivering content, and 20 minutes were spent in directed reflection activities in small groups.

After the pilot program, fellows completed a retrospective pre/post survey (see Appendix C) and semi-structured interview (see Appendix D). The PI conducted recorded interviews (with participants' permission), then transcribed, coded, and analyzed the content using thematic analysis.[11]

To provide a more complete description of the experience, qualitative interview data and open-ended survey questions were interpreted together with quantitative survey results. These were integrated by theme into tables. Member checking was performed at the conclusion of the study to ensure validity.

Results

Needs assessment

Fifty-five applicants were sent survey invitations, and 19 responses were received (35% response rate). Applicants, participants, and PDs suggested multiple potential benefits of a CETP program, as displayed in Table 1. Notably, 5 of 14 of these highly-ranked applicants who

plan to be CEs indicated that they would have ranked our fellowship higher if the CETP program were offered.

Pilot program

Of the 8 fellows nominated, 6 participated. Two wanted to participate but clinical duties were prohibitive. Attendance ranged from 2-6 fellows per session. Five fellows were interviewed after the pilot. All PDs who nominated fellows took the survey. Several themes emerged from the analysis of the interviews and surveys describing the pilot's benefits (Table 2) and feasibility (Table 3).

Discussion

A CETP program would be valuable

PDs and fellows agreed that the program would be valuable to fellows' career development, beyond what the institution already offers. This program fills a gap between the minimal resident-as-teacher training that our residents receive and the major investment of time and money that a formal degree requires.

Although our programs already attract excellent fellows, our data indicate that we might have been able to recruit 5 additional highly sought-after applicants who planned to be CEs if we offered the CETP. Recruiting future educators to our fellowship programs would enrich the recruitment pool for faculty CEs, which would help build our community of educators. Better training for future faculty has the potential for downstream effects such as improved teaching quality and a stronger education community. It remains to be shown whether this would further

increase the likelihood of attracting competitive applicants to fellowships, or if it would improve the overall reputation of the institution.

Reasons fellows found the pilot valuable

Participants valued career preparation, gaining skills they could immediately apply, and learning from strong role models; this is similar to what Kumar and colleagues proposed would be necessary for a successful CE training program.[1] The theme of valuing community was also strong, which is consistent with the philosophy Smith and colleagues used to develop their training program.[4]

Lessons for planning the CETP program

Our findings regarding the challenges with scheduling are consistent with prior work.[12] To be truly integrated into existing programs, the CETP sessions should be scheduled during normal work hours; however, even with our sessions held after hours, two fellows could not participate due to clinical load. While Rama and colleagues suggest that displacing clinical or research time may be necessary,[7] our findings suggest that alternative scheduling, such as 3-4 month blocks of sessions, would enable fellows to arrange their training schedules so that they can focus on fellowship needs during busy months and CETP training during less demanding months. As the program matures, we expect to generate increased buy-in from PDs, who will hopefully be willing to free up more of the fellows' clinical time for this important training.

Pilot participants favored sessions on career development and immediately applicable teaching strategies over more theory-based material. Therefore, when we develop the full program, we plan to sequence topics consistent with Knowles' adult learning theory,[13] starting

with an introduction to the career and building a sense of community among participants, then providing a series of practical teaching strategies with opportunities to practice these skills. As fellows gain experience with teaching and using these principles, we will introduce educational theory to help them understand how theory supports the teaching techniques. Throughout the program, fellows will have opportunities to practice and receive feedback on new skills; this would benefit both the fellows and the institution. We expect to offer an informal certificate at the end of the program.

Strengths

The incorporation of trainees from multiple subspecialties into one program is unique. This approach enables us not only to pool resources and provide different perspectives on teaching and learning, but to foster relationships between trainees from different divisions, which may lead to future collaboration.

The mixing of qualitative and quantitative methods in this study allowed for a fuller picture of fellows' needs, which will enable us to tailor the program to those needs.

Limitations

Our study was designed at one institution to determine the potential benefits and feasibility of creating a CETP program. While these results may not be broadly generalizable, comparing published literature with our results reveals similarities among academic medical centers. Response bias and social pressure may have affected survey results, skewing in favor of applicants and PDs who already value education; social pressure may have affected interview results. Our surveys were not pilot tested, nor was validity evidence collected.

Conclusion

In conclusion, our fellowship programs, fellows, and institution have the potential for substantial benefit from an interdisciplinary CETP. The feedback we received from participants and PDs regarding program feasibility will inform the development of our training pathway; we hope that others designing similar programs will find our study useful as well. We would suggest this type of program to institutions that want to offer future educators more than a basic resident-as-teacher program but not something as in-depth as a formal degree. An ideal program would include training in education skills as well as career development. When we evaluate the final program, we will explore some of the questions that have arisen during this project and from others' work.

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Tables

Table 1 – Suggested benefits of the CETP

Category	Evidence
Benefit for recruitment of fellows	
Importance of CETP for recruitment of fellows to IU programs	• CETP might be useful in marketing fellowship programs (interview – participant 1) • "… a program where throughout the course of your fellowship you're going to be fast tracked on learning how to educate educators and learning how to essentially progress yourself in an academic environment… would be extremely attractive." (interview - participant 2)
	Value of CETP in recruitment • Moderately important - mean 77.2 ± 13.85, where 0 is "very unimportant," 50 is "neutral" and 100 is "very important." (PD surveys)
Benefit for fellows' career development	
Worth the time investment	Participant surveys - 100% felt it was worth the time they invested
Valuable for fellows' career development	PD surveys - Mean rating of 79.71 ± 13.84, where 0 is "very unimportant, 50 is neutral, and 100 is "very valuable."
More prepared for future jobs	"I learned several valuable skills to help teach and evaluate." (participant survey 6)
	"I wish I could do it longer, so I could be a little bit more prepared for a faculty position next year." (interview - participant 4)
More competitive for academic jobs	[Told a story of a session at a national meeting where a speaker was advising fellows on becoming a clinician-educator.] "So I was like, this is great because I felt like I had a leg up on these other fellows." (interview - participant 2)
Benefit to the institution as a whole	
CETP offers something other faculty development opportunities do not	"[Another faculty development program] was a nice experience actually because you see perspective from other departments… but they're mostly talking about like classes and lectures which is really not the type of teaching a clinician educator focuses on. ..Having something dedicated for clinician educators would be interesting." (interview - participant 3)
CETP may benefit residency and medical school	• "So I think implementing it in Indiana makes all of the fellowships more attractive, makes the residency more attractive, makes the med school attractive, just by trickle down." (interview - participant 2) • "Building clinician educators has tremendous value [for the institution.]" (interview - participant 1)

Table 2 – Reasons pilot participants found the pilot valuable

Theme	Evidence
Pilot helped clarify the role of the clinician-educator and provided career counselling.	"I don't think I really knew what [CE] meant before starting the program." (Participant 2) "Defining the different types of clinician educators was really helpful." (Participant 4)
Sessions were valuable because the facilitators were excellent educators.	"I think individually they're all very good educators themselves, and I think that those are the right people to be learning from." (Participant 1)
Pilot was valuable because it provided applicable tools and techniques.	"you get good hand-on examples of stuff that we would use on a day to day basis." (Participant 5) "... I'm willing to put in an extra hour per day if it means it's going to save me time for presentations in the future, for applying for grants for education in the future..." (Participant 2)
Pilot was valuable because fellows valued being part of a community.	"… getting different people's ideas and socializing I think... sort of being able to see people from other specialties on a non-work basis. That was nice." (Participant 4)

Table 3 – Themes regarding suggestions for planning the full CETP program

| Theme	Evidence	Implications for design of full program
Availability varies from month to month and by year of training	• "... We're on service constantly the first year and once you get to your third year you don't have as much time on service, you have more time to do stuff like this." (Participant 5) • "Availability to meet is dependent on which rotation they are on … So, I think you just need to pick a time and make everybody work around it." (Program director 7)	Program schedule may need to be flexible enough to enable fellows to focus on CETP during less demanding rotations.
Fellows should have a strong sense that they are part of a community of educators.	"I think the relationship aspect of it is huge as far as getting involved in research together but also having multiple components of the team that are looking at things from different angles." (Participant 2)	Group size and participants will need to be carefully planned.
Too large of a group might impair community identity and might change the format of the sessions, with less interaction and discussion and more lecture.	• "It was just nice that we're small enough that everyone was able to participate... I think too big a group and people wouldn't participate as much." (Participant 4) • "[If the group were] too big and it would turn into just being lectures and you would miss out on any interaction with everybody else, which I think is part of what made this really good." (Participant 5)	Group size will need to be small enough to promote an interactive format for the sessions.

Appendices

Appendix A – Survey of prospective fellows who chose another institution for subspecialty

training

Please recall the factors that influenced your choice of a program for internal medicine

subspecialty fellowship training.

1. If you were to choose a career pathway/track today, which of the following would best describe your choice?
   a. Clinical research
   b. Basic science research
   c. Clinician-educator
   d. Private practice
   e. Public service or service to a special population
   f. Other (please explain)
   g. undecided
2. How important was it to find a program that trained you specifically in a particular career path (for example, clinical research or private practice)?
   a. Very important
   b. Somewhat important
   c. Not important
   d. I preferred not to have specific training in a career pathway
3. If you had ranked two programs equally high, and then learned that one program had a training pathway that aligned with your career interests, how would that change your ranking of the programs?
   a. I would rank the program with the training pathway higher.
   b. My ranking would not change.
   c. I would rank the program with the training pathway lower.
4. If you learned that Indiana University had a training pathway to prepare subspecialty fellows for a career as a clinician-educator prior to the match, how would that have changed your ranking of the program?
   a. I would have ranked IU higher.
   b. I'm not sure if I would change my ranking.
   c. I would have ranked IU lower.
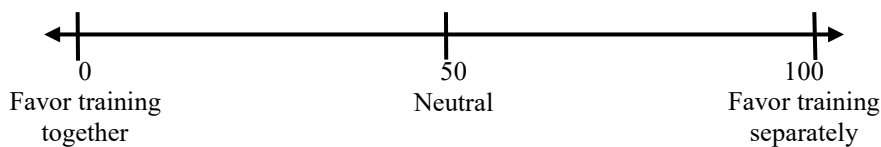
Appendix B – Program director survey
1. Were you aware that your fellow was participating in a Clinician Educator Training Pathway pilot program?
    a. Yes
    b. No
2. In the future, we hope to have a longitudinal experience to prepare fellows for careers as clinician educators. Fellows would be expected to be excused from clinical duties in order to participate. What timing would work best for your fellow(s)?
    a. Early mornings, one hour, once per week or every other week
    b. Evenings, one hour, once per week or every other week
    c. Noon hour, once per week or every other week
    d. One afternoon, three hours, once per month
    e. One morning, three hours, once per month
    f. One Saturday, three hours, once per month
    g. Entirely online, with some virtual meetings
3. How big of a burden is it on your fellowship when a fellow needs coverage for 1-3 hours during a work day?
    a. We do not have sufficient coverage for a fellow to miss time during a work day.
    b. If a fellow misses time during a work day, another fellow must generally cover for him/her, and we usually do not have sufficient manpower for this.
    c. We usually have sufficient manpower but we must provide coverage for 1-3 hours of a fellow's time.
    d. It is generally not a problem for a fellow to miss 1-3 hours.
4. What problems or challenges did you experience with your fellow(s) participating in the pilot program?
5. How important is this type of pathway for fellows' career development?

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 |———+——————————————+——————————————+—→
 0                 50                100
very unimportant   Neutral      Very important
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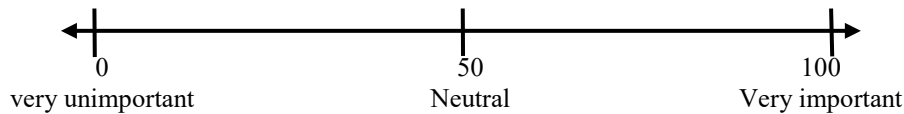
6. How important is this type of pathway in recruiting fellows to your program?

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     +———————————————+——————————————+—→
     0               50             100
  very unimportant   Neutral     Very important
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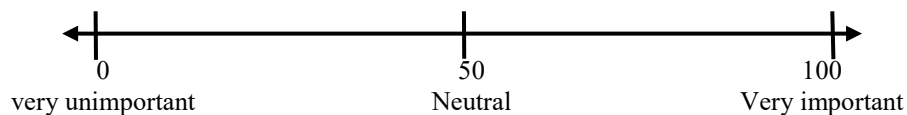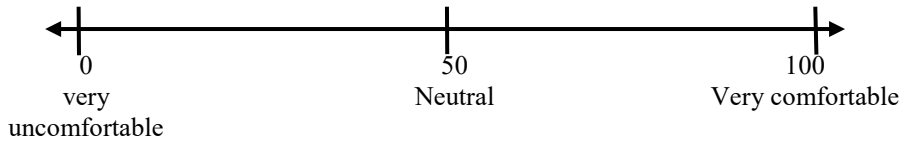
7. Do you think it is important that fellows from different subspecialties train together, or would you prefer that each specialty train separately?

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 +—————————————————+——————————————+—→
 0                 50             100
Favor training    Neutral      Favor training
  together                       separately
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Appendix C – Retrospective pre/post survey for pilot program participants
1. Please answer the following questions regarding your comfort with your skills in these areas before and after the pilot (we realize that not all areas were addressed by the pilot):
All responses were recorded on a slider bar.

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 |---------------------+----------------------|--->
 0                     50                    100
 very                 Neutral          Very comfortable
uncomfortable
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   a. Describing the role of a clinician-educator to a colleague
   b. Navigating the promotion and tenure process
   c. Teaching at the bedside
   d. Giving and receiving feedback
   e. Teaching procedural skills
   f. Teaching clinical reasoning
   g. Assessing learners
   h. Preparing and delivering a lecture
   i. Performing education research
   j. Turning your clinical work into scholarship
   k. Mentoring
   l. Developing curricula
   m. Developing and evaluating a program
   n. Evaluating the effectiveness of your teaching
   o. Conducting quality improvement projects
2. What promotion track do you anticipate following?
   a. Clinical
   b. Tenure
   c. Research

The next questions ask about your experience in the pilot program. Your answers will help

plan a larger program for future fellows.

3. What timing for the professional development sessions would fit best with your current fellowship responsibilities?
   a. Early weekday mornings, one hour, once per week or every other week
   b. Evenings, one hour, once per week or every other week
   c. Noon hour, once per week or every other week
   d. One afternoon, three hours, once per month
   e. One weekday morning, three hours, once per month
   f. One Saturday, three hours, once per month
   g. Entirely online, with some synchronous virtual meetings

4. To what extent did your participation in this program put an additional burden on your colleagues?
    a. Not at all
    b. A colleague spent less than 1 hour working on my behalf.
    c. A colleague spent about 1-3 hours working on my behalf.
    d. A colleague spent 3 hours or more working on my behalf.
5. Was this program worth the time you invested?
    a. Yes
    b. No
    c. Please explain your response
6. What suggestions do you have for a future program training fellows for a career as a clinician-educator?

Appendix D – Semi-structured interview questions

1. Would you be comfortable with me recording this conversation?
2. How much teaching experience or education training did you have before you came into the program?
3. Before the pilot, were you planning to become a clinician-educator?
4. What did you like about the sessions?
5. What didn't you like?
6. Was the content appropriate for your background?
7. Any feedback on the food/snack?
8. Was the timing of the sessions difficult?
9. Is there a more ideal timing for you?
10. Did you have your teaching observed? If so, did you find that helpful?
11. If you were going to be a fellow next year, would you be interested in the program?
12. As part of the full program, would you be interested in a longitudinal education research project?
13. Would you be interested in a writing accountability group?
14. How would you feel about other education faculty being invited to the sessions?
15. Any other comments or feedback?