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A qualitative study of the perceived value of participation in a new Department of Surgery Research Residents as teachers program

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ABSTRACT

Objective: This study aims to understand the perspectives of surgical residents who completed a Research Residents as Teachers Program (RRATP).
Methods: Our RRATP included a 6 h workshop followed by formal teaching opportunities across one academic year. Resident teachers participated in semi-structured interviews, which were inductively analyzed for prominent themes.
Results: Eight surgical research residents completed the RRATP workshop and taught 330 h (median = 26 h, range: 8–105). Interview participation rate was 100%; kappa was 0.81. Residents reported four themes: 1) increased knowledge of teaching principles with subsequent teaching changes, specific factors that contributed to their development as a teacher, numerous personal benefits to participation, and broad positive consequences for the surgical department including improved culture and patient care.
Conclusion: A RRATP can generate a significant number of formal teaching hours by surgical research residents, who perceive a high value of formal education training to themselves and their surgical residency program.

Introduction

Teaching has long been a fundamental component of a physician's role. This aspect of a physician's identity is fitting because "doctor" derives from "docere," the Latin word for "teacher." Physicians assume the role of teacher beginning in residency; for decades, residents have been critical to providing medical student education.[1] Recognizing the importance of housestaff teaching, the Liaison Committee on Medical Education (LCME) requires that residents interacting with students be trained in teaching and assessment.[2] There has been an increase in the number of resident as teacher programs over the past two decades at least partly in response to this regulatory requirement.[3]

Just as in other areas of medicine, surgical residents are often the primary instructors of medical students, and students expect and value teaching from surgical residents.[4–7] The quality of instruction provided by the surgical residents can have significant educational consequences. Findings from one university residency program demonstrated that students interacting with the most highly rated resident teachers were more than twice as likely to match into a surgical residency.[8] Other papers demonstrate how students who embrace surgery as a career identify positive interactions with residents as a critical component of fostering an interest in surgery.[9–12] The Accreditation Council for Graduate Medical Education (ACGME) includes effective teaching and instruction of students and junior residents as necessary skills that surgical residents must acquire as part of the surgery milestones.[13]

Yet despite the importance of cultivating the teaching skills of surgical residents, relatively few surgical residency programs offer a formal Resident as Teacher Program (RATP), with 26% of 105 surveyed program directors indicating that such a program existed at their institution.[14] This low rate of RATP programs does not reflect a lack of interest, as over 60% of the same survey respondents indicated an interest in establishing a formal teaching

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Abbreviations

ACGME	Accreditation Council for Graduate Medical Education
LCME	Liaison Committee on Medical Education
MGH	Massachusetts General Hospital
RATP	Resident as Teacher Program
RRATP	Research Residents as Teachers Program

program for their residents.[14] Few published RATP exist in the surgical literature.[15] Across all specialties, formal teaching programs represent a varied and heterogenous collection of curricula with varying levels of evidence of efficacy.[16,17]

In 2017, the MGH Department of Surgery, in an effort to acknowledge the importance of formally cultivating the teaching skills of its residents, launched a new Research Residents as Teachers Program (RRATP). This program was offered to residents during the professional development period, typically between the PGY3 and PGY4 clinical years. The purpose of the program was to provide residents with formal teaching instruction and practice opportunities to prepare them to be senior residents who would be leading a team of junior residents and medical students. The goal of the present study was to use thematic analysis to understand the experience of the residents who participated in this program and, specifically, what they viewed as the value and benefits of participation.

Methods

This study protocol was reviewed and approved by the Partners Institutional Review Board (Protocol#: 2018P000493).

Participants and recruitment

All residents who joined the 2017–2018 MGH Research Residents as Teachers Program (RRATP) were eligible to participate in the current study. Residents for this study were recruited via email and completed interviews from May to June 2018, approximately one year after joining the program. Remuneration for study participation consisted of a coffee drink and/or snack from a local cafe valued up to $10.

The MGH Research Residents as Teachers Program (RRATP)

In the 2017–2018 academic year, the MGH Department of Surgery launched a Research Residents as Teachers Program (RRATP). In this program, surgical residents engaged in full-time research after the clinical PGY3 year who were interested in developing their teaching skills were invited to complete a 6 h workshop led by a surgical educator who teaches about surgical education at the local, national and international levels (R.P.). The workshop occurred in Summer 2017, and workshop contents are detailed in Table 1. The workshop emphasized activities based on Kolb's experiential learning theory, such as simulation of giving an underperforming medical student both formative and summative feedback.[18] The workshop contents were selected based on medical student and junior resident feedback about areas for potential improvement for senior resident teaching. After completing this workshop, resident teachers were presented with a number of opportunities to formally teach junior residents and medical students including but not limited to the MGH Department of Surgery weekly simulation program, medical student orientation to the surgery clerkship, and medical student transition to the wards course.[19,20] All of these sessions were structured teaching sessions, not bedside or wards teaching, with specific and predefined learning objectives. The details of the simulation curriculum and transition to the wards course have been previously described by our group and occurred in a simulation lab or classroom.[19,20] The spectrum of teaching activities was broad and included providing large-group instruction on technical skills, one-on-one or small group coaching during the practice of technical skills after faculty instruction, scoring and providing feedback at times of technical skill examination, lectures/didactics on surgical topics including evaluation of surgical patients, post-operative complications, and tips for the surgical clerkship.

Data collection

A semi-structured interview guide was developed by three members of the research team: a surgical resident (S.M.), a surgical attending with expertise in surgical education (D.G.), and an educational psychologist (E.P.). This guide consisted of open-ended questions regarding the resident's activities as a teacher, motivations for becoming a resident teacher, perceived benefits of being a resident teacher, and suggestions on how to improve the RRATP. Representative questions are presented in Table 2. The interview included a member checking phase at the end of the interview in which the interviewer summarized responses with opportunity for participants to clarify. Participants were also asked to indicate the number of hours they taught after completion of the RRATP. The semi-structured interview guide was piloted on the first participant and was only minimally revised prior to completing the remaining interviews.

All of the interviews were conducted one-on-one, in-person by a surgical resident member of the research team with formal training in qualitative research methods including semi-structured interviewing (S.M.). This peer interviewer was junior or equal to the post-graduate level of study participants and as such had no supervisory or evaluative role over participants. Interviews took place in a private conference room. Before the interview, research participants were informed of the purpose of the study and that their responses would remain confidential. Participants provided verbal consent prior to the beginning of the interview. The interviews were audio recorded and transcribed verbatim prior to being deidentified. Interview transcripts served as the primary data for

Table 1
Research resident as teachers workshop contents (7am – 1pm).

Adult Learning Theory and How to Apply to Students and Residents
Introduction to Growth Mindset
Medical Student Motivations and the Surgery Clerkship
Teaching Technical Skills practice session
Assessment and Feedback with emphasis on Entrustable Professional Activities
Feedback Simulations
Course debrief

Table 2
Representative questions from semi-structured interview guide regarding participation and value of participating in the RRATP.

How have you participated as a resident as teacher?
How did you decide to participate as a resident as teacher?
What were your motivations in giving up your time to participate?
What did you enjoy about participating in the sessions?
How do you think you benefited from participating?
Have you used what you learned in the simulation sessions in other contexts?
How has your teaching changed (if at all) after participating as a resident as teacher?
Was there anything that you would have changed about the residents as teachers program?
How could the residents as teachers program better support you in developing as a teacher?

analysis.

Data analysis

Interview transcripts were analyzed using an iterative, inductive approach without a predetermined coding framework in order to allow themes to be developed by researchers from the text in response to specific research questions.[21] This methodology was chosen because to our knowledge, no predefined coding schema or framework for how surgical residents experience and value residents as teachers programs is available in the surgical education literature. All eight transcripts were initially openly coded by a single author to label each discrete idea/concept. All transcripts were reviewed by four members of the research team (S.M., D.C., D.G., and E.P.), who met multiple times to iteratively refine the codes until a finalized codebook was established. Two independent raters (S.M., D.C.) then coded all of the interview transcripts and interrater reliability was determined by calculating kappa coefficient. In a second phase of analysis, primary codes were then grouped into broader themes, with a definition of each theme generated based on its associated codes. Again, the creation of this themebook was subject to an iterative multidisciplinary review process with the original four research team members (S.M., D.C., D.G., and E.P.). The four themes were presented to a convenience sample of four of the research participants for further confirmation and review; no edits were made to the themes based on participant feedback that the described themes were concordant with their experience.

Results

Of the 17 residents on full-time research who were invited to the RRATP program, 8 completed the workshop and taught in structured settings (47%). The cost of running the RRATP workshop was approximately $150 for food and 12 h of faculty academic time. All 8 residents (3 women; 5 men) who completed the RRATP participated in the interviews. Mean interview length was 22 min (range 15–32 min). In total, the participants reported teaching 330 h across the academic year (median = 26 h, range 8–105 h). These hours were distributed across the junior resident simulation program (172 h), the medical student orientation and curriculum (117 h), and even formal high school teaching sessions as part of department of surgery outreach programs (41 h). Bedside teaching during moonlighting shifts, clinical supervision, intraoperative teaching, research mentoring, or other more informal teaching activities were not included in this tally.

For the 21 identified codes, overall kappa coefficient was 0.81 indicating substantial coding agreement between the two raters. All of the codes appeared in at least two interviews, which is suggestive of thematic saturation. We collapsed these codes into 4 main themes (Table 3). First, participants reported that participating in the RRATP led to a greater understanding of effective teaching with an associated intent to change their personal teaching behavior. Second, participants identified the environmental and programmatic elements of the RRATP that contributed to their development as a teacher. Third, resident teachers reported enjoying a variety of personal benefits from participating in the RRATP. Finally, resident teachers conveyed that the benefits of the RRATP extended beyond the participants to other groups and settings.

Theme 1: Participation in the RRATP leads to greater understanding of one's teaching behaviors

All of the participants reported that their understanding of the components and characteristics of effective teaching had increased and that as a consequence, they changed their teaching behavior in order to increase their teaching quality. Specifically, participants reported an improved ability to give feedback to learners as teaching skills that had improved the most. With regard to communication, multiple participants described the importance of "clear" communication with learners. They also indicated that their feedback had become more "actionable" and "specific" so that a learner could change and improve in response. Resident teachers described that this was a shift from the past when their feedback was more general and vague, therefore less helpful to their learners.

Participants also reported adopting a more learner-centered perspective when teaching. They frequently described the importance of beginning a teaching moment by conducting a mini needs assessment in order to gauge a learner's incoming level of knowledge or skill. The research resident teachers indicated that they would then adjust their teaching to the specific learner. They used the phrases "personalization", "tailored", or teaching "where people are at" to describe the process of assessing a learner and then teaching to the learner. The resident teachers also described how participation in the program provided the opportunity to cultivate becoming "more patient" while teaching, another example of standing in the learner's shoes and adopting a learner-centered attitude toward teaching and learning. Overall, the participants indicated appreciation for explicit, formal training in teaching principles.

Theme 2: Environmental and programmatic factors contribute to development as a teacher

Participants identified a number of programmatic factors that contributed to their development as a teacher. Research resident teachers indicated that the specific context of the formal teaching opportunities contributed to their development as teachers. They described how the simulation lab provides a "low stakes", "stress-free" environment to develop teaching skills because the competing need for delivering timely and efficient patient care is absent. Research resident teachers identified time as an obstacle that was overcome as part of the program because of the

Table 3
Four identified themes and representative quotes.

Participation in the RRATP leads to greater understanding of one's teaching behaviors
I think I've learned mostly how to explain things in a way that makes sense to the medical students … I learn ways to tell them to load the needle in the middle of the needle itself and at the tip of the needle driver and things that I hadn't really vocalized before. (Participant 7)
From the first time around to the second time through the curriculum, I've heard a difference in the way I give feedback, at least. Whereas the first time around it was more like, "Oh, yeah, you did a great job! Um, think about one or two things." And then this time around I've been able to articulate it a little bit better, actionable things. (Participant 1)
I've found that there should be, that there's standards that I do for everyone, and then there's some personalization, based on where the person is at, what they're doing, what their issues are … I think that is what I would take from it [the RRATP], that there are universal ideas, but then those need to be applied to the individual. (Participant 3)
I think having had this framework and this initial teaching … allows me both to see here's how I could be a better teacher but also here are the things that I do poorly that I could be better at. (Participant 6)
I think that in the beginning I was very quick to teach rather than see what someone could do, and what they understood before jumping in and teaching. Now, I think when I'm part of a teaching session, I try to let them be involved in kind of showing what they know already. (Participant 8)
Environmental and programmatic factors contribute to development as a teacher
In the sim lab that's a much lower stakes and lower, lower pressure [environment] (Participant 1)
If there was some way to keep people engaged over time rather than just, we're gonna give you a bunch of information and ask for your help when we need it. If there was a more continuous … Maybe here's a primer but maybe once a month or once every other month … talk about x, y or z [teaching topics]. (Participant 5)
Maybe this exists, but a repository of knowledge, a folder of key papers or papers relevant to or frameworks relevant to what we were taught. (Participant 6)
I'm lucky that you guys have spread out the teaching sessions, at least for us, enough that it isn't, I don't think of it as a huge time commitment … I think that you guys have been very good about not asking too much of the resident educators. (Participant 7)
The benefits to the self of participation in the RRATP are numerous
I think we're also very tactile people and I really liked just practicing with the hands on bowel anastomosis tool, practicing for myself while also helping the junior residents. (Participant 7)
I like the interaction. I like being able to show tricks of the trade. It keeps me engaged in what I'm doing at the moment as well, otherwise, things just become really mundane. There's certainly some excitement you get from it. (Participant 4)
It can feel very isolating to be in the lab, and it's a good opportunity to, you know, continue or to build relationships with the junior residents, particularly the interns with whom I would otherwise have had zero interaction with. (Participant 1)
I liked that I could see over the course of several sessions, for the vascular and anastomosis, the residents improving. It seemed like they really appreciated all the time that the resident teachers and the attendings took out of their schedule to teach them. So, just feeling appreciated and knowing that I could actually use the skills I've learned in my first three years to improve their skills is great. (Participant 8)
I think being a more effective teacher also makes you a more effective learner so there is personal stuff to gain as well as doing for the greater good of the students you're working with. (Participant 5)
I've always had an interest in going into academic surgery and a key component of that is teaching and whether that's teaching in the research setting or the more clinical setting, I expect it will be a core component of my job and so look to use these skills in all those aspects. (Participant 2)
We were using staplers and when you haven't handled a stapler in a year, I think it's really easy to forget how to do that. So as I was suturing and knot tying last night [during moonlighting], I was like, "Thank God I've been practicing this." So it really helps from a clinical perspective. (Participant 7)
Benefits of the RRATP extend beyond self
The more invested you are in their [student] education the more invested they are in the entire patient care process, and the more cohesive the team is and the better care ultimately that you take care of patients. (Participant 5)
[Teaching] makes you a more effective leader if you can have everyone on the team be engaged in some sort of role. If you teach someone how to do something then they will be able to do it and it's one less thing that you need to do. So, from an efficiency standpoint overall, I think there's a huge benefit of patient care and quality of care. (Participant 4)
I just want to stress the importance of keeping senior residents engaged as teachers for the junior residents. Because I think that is something that has often been missing from our program. I don't know if it entirely fills the gap, but I think it helps a little bit.(Participant 1)
I think that the program has done a really admirable job of better organizing the training for residents [and] fostering an environment that is supportive of education and teaching. (Participant 2)
I'll likely have to rotate with them [the learners] again, and so having a relationship with them, understanding, where they're coming from and what they know, what they don't know, what their experiences have been like, I think that's going to be important in running a team and working with these residents. (Participant 1)
There are going to be certain rotations where we work with interns, for instance, and do cases together. Effective communication during those cases, and listening and understanding where they are with their surgical skills will be essential to completing that case safely. (Participant 8)

distributed nature of teaching assignments. In the words of one resident (Participant 5), "figuring out how to … [teach] in a way that is beneficial for the student, doesn't take too much time from you or from patient care, and is truly effective is a lot harder than people think."

While the overall perception of the program was positive, research resident teachers did identify a number of programmatic elements that could be improved in order to support their development as teachers. Multiple residents indicated that in addition to the one day workshop, they would appreciate more, "distributed," "longitudinal" instructional sessions with "refreshers" to further develop their understanding of teaching principles and practice. These additional sessions were described as short, in-person reviews of the teaching principles included in the original workshop or opportunities to discuss what participants had observed about their teaching after having the opportunity to formally practice their teaching and feedback skills with the junior residents and medical students. Participants also felt that after practicing their teaching and feedback skills, they would be ready to learn additional, more advanced education topics. Residents also expressed an interest in having a set of teaching resources that they could access at any time including "canned talks" that would serve as teaching guides on common surgical topics and an online "repository of knowledge" that would include "key papers" or PowerPoint slides about teaching.

Finally, residents commented that they desired more feedback as part of participation in the RRATP. When asked how they would like to receive feedback, residents indicated that they would appreciate feedback from a variety of sources, including from both experienced surgical educators and from learners themselves. Additionally, residents would prefer narrative feedback, "more comments than, like, a Likert scale." Multiple residents reported that they would prefer a feedback mechanism that overcomes the hierarchy between surgical teachers and their learners and permits the junior residents and medical students to give candid feedback to senior residents without fear of retribution or awkwardness. Residents expressed caution about formal feedback mechanisms; in the words of one participant, immediate, candid feedback is "a lot

more valuable than someone harassing you to fill out a survey two months after the fact where you're just writing something down because you have to" (Participant 5).

Theme 3: The benefits to the self of participation in the RRATP are numerous

Participants in the RRATP identified many direct and indirect benefits of the program. In addition to improving their teaching ability, research resident teachers indicated several social aspects of participation. Specifically, teaching interactions with the junior residents and interns were different from normal clinical work. Additionally, the research resident teachers reported intrinsic enjoyment of teaching stating that "it's fun" or "I like it" or that it was extremely "enjoyable". Multiple residents expressed great satisfaction from observing how learners improved as a consequence of their teaching efforts. With regard to their own growth and development, the research resident teachers indicated that teaching in the program was closely tied to their own learning, whether that be on how to learn more effectively or with regard to learning and maintenance of specific technical skills. Finally, relevance to future career roles was frequently cited as a personal benefit of participation in the RRATP, with teaching as a "core" or "important" component of future work as both a senior resident and faculty member.

Theme 4: Benefits of the RRATP extend beyond self

Participants indicated that the RRATP generated a number of benefits for the Department of Surgery beyond the personal benefits of participation that they enjoyed as individual teachers. First, resident teachers acknowledged that the relationship building that was accomplished through participation in the program had consequences in other settings, specifically in the care of patients. Residents indicated that having better relationships with the junior residents contributed to better patient care during moonlighting shifts, or they anticipated that these relationships would improve the patient care that they could deliver as clinical residents in the future. They also described how they believe that improving their teaching skill enhances their ability to lead a clinical team, generating a "huge benefit" for the quality of patient care. Multiple residents commented on how an excellent clinical team leader teaches and invests in team members to allow for "better care ultimately" or take junior residents through cases "safely."

Finally, resident teachers indicated that the program served as an agent for a culture change within the Department of Surgery. Several of the participants commented on the importance of the program in fostering a more positive teaching relationship between junior and senior residents and on increasing the value of teaching and education in the department more broadly.

RRATP ripple effect

Taking these themes together, we propose a "ripple effect" model of the value and contribution of a RRATP to a given department as depicted in Fig. 1. Research resident teaching skill is the target at the center of the ripple, but the effects of the program subsequently extend to other benefits for the participants (social benefit, clinical skill), individuals who learn from the research resident teachers (junior residents, students), the teams that the research residents lead, the culture of the department, and ultimately the surgical patients. Therefore a small investment of resources in a RRATP program could serve as a lever to effect positive effect on the institution as a whole.

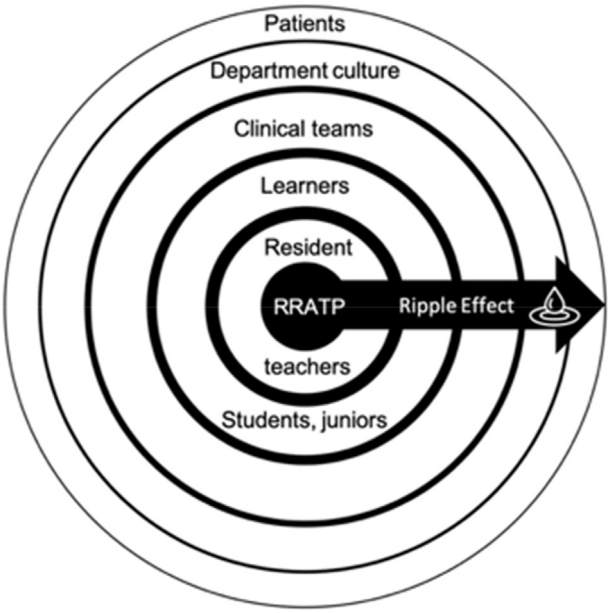

Fig. 1. Model of the "ripple effect" of the RRATP.

Discussion

This study describes the creation, delivery, and assessment of a Department of Surgery Research Residents as Teachers Program for surgical residents during their research and professional development period. We describe the residents as teachers workshop contents as well as the number of hours taught by the research residents who participated in this program. Additionally, we identified major themes in how the participants in this program perceived the value both for themselves and for others.

One important finding is the high number of formal teaching hours provided by residents who participated in the new RRATP. Overall, 8 research residents contributed over 300 h of formal teaching instruction, a significant contribution to the department of surgery. Research residents therefore represent a potential untapped resource for residency programs that would benefit from additional teaching support. It is unlikely that these hours could be easily replaced by hours from faculty. The high number of hours contributes to a low teacher to learner ratio in our junior resident simulation program and medical student curriculum.[19]

An additional important finding is the high perceived value of the RRATP to the research residents who participated. These benefits extend not just to their teaching ability, but to other personal benefits such as positive social consequences and high relevance to their future professional goals. Multiple residents commented that their own learning of technical skills was enhanced by participating as a research resident teacher, consistent with work by others that demonstrates that residents more effectively learn material that they have taught to others.[22]

Resident teachers also perceived that the program had positive consequences beyond formal teaching opportunities and that the program contributed the departmental culture change to the benefit of future generations of surgeons. Yet perhaps one of the most important findings is how research resident teachers believed that participation in the RRATP improved their ability to lead a clinical team and therefore deliver better care to surgical patients. Other work has demonstrated that there is considerable overlap between the characteristics of good resident teachers and clinical skills, providing evidence that the resident view that teaching and

clinical care are closely intertwined has an empiric basis.[23,24] Overall, our findings suggest that a RRATP is perceived by participants to have long-reaching "ripple effects". This result is likely not limited to the specific institutional context of the study. Ramani and colleagues have published a guide to near-peer teaching that succinctly describes decades of literature that is suggestive of the many potential positive consequences of establishing a formal residents as teachers program.[25] While there are challenges to establishing a formal residents as teachers program, other departments may be more motivated to overcoming these challenges given the high perceived value of the program.

One potential study limitation is that like most published resident as teacher curricula, objective measures of teaching changes were not obtained.[16,17] Participants in the RRATP program did not undergo any formal teaching assessment before or after participation in the program, thereby limiting our ability to claim that the program successfully improve the teaching skills of surgical residents. However, residents reported responses that were consistent with the theory of planned behavior.[26,27] In the theory of planned behavior, attitudes, beliefs, motivations interact with factors such as belief in one's own agency, intention, and environmental factors to result in a specific behavior. Residents in this study identified many motivating factors for participation such as relevance to future roles and contributing to departmental culture change. Residents reported success in changing their teaching, reflecting a belief in their own agency and ability to change, and many of them reported an intention to change their teaching in specific ways, such as standing in the learner's shoes or improving the quality of their feedback or other communication. Additionally, the residents describe environmental factors such as the reduced stress in the simulation laboratory as a contributing factor to the positive learning environment in which they taught. According to the theory of planned behavior, all of these inputs contribute to an individual being able to adapt and change, in this case, becoming a more effective teacher.

An additional study limitation regards feasibility of replicating study results in other surgical residency programs. The setting of this RRATP is at a large academic residency program in which a majority of residents take at least two years for research and professional development. Many of these residents enter surgical training with a plan to remain in academic surgery. Therefore, their motivations for participation in the program may not be representative of a national sample of general surgery residents. Even within our department of surgery, the volunteer participants in the RRATP likely represent the residents who are most keen to improve and cultivate their teaching skill, and their views may not be representative of residents who did not choose to participate. Future work could specifically engage the residents who did not volunteer to participate in the RRATP in order to understand the perspective of a broader sample of surgical residents. Such a project might identify the barriers or reasons that residents do not want to engage in formal teaching training opportunities. Anecdotally, we know that some residents expressed interest in participating in the program but were unable to do so due to conflicts with other academic or personal commitments, though there are also likely to be residents who are unenthusiastic about teaching and would prefer not to participate in this program even if offered at a time convenient for them. Teaching instruction offered to this population of residents may have to be modified to be effective in cultivating effective teaching skill or even to nurture a baseline interest in teaching at all.

Furthermore, we acknowledge that not every surgical training program has the resources to offer this type of workshop and subsequent opportunities to practice teaching. We are fortunate to have several members of our surgical faculty with extensive expertise in education, a resource that may not be available universally. Additionally, the large number of formal teaching opportunities may not have been established elsewhere. For example, our program has developed a longitudinal surgical simulation program that offers weekly opportunities to RRATP participants to hone their teaching skills in an environment that is designed to support learning of both junior resident learners and resident teachers without the urgency or high stakes of patient care.[19] Smaller programs may benefit from working with larger academic medical centers to remotely establish a residents as teachers program. This system would allow programs with less resources to benefit from larger programs' experiences and tailor a teaching program for their unique institutional or departmental priorities. National surgical organizations could create an online matching program to pair small programs with academic medical centers with pre-existing teaching programs.

There are a number of potential future avenues of investigation to extend this work. First, it is important to establish whether participation in this program does lead to improvement in teaching effectiveness. Future participants could undergo observed structure teaching evaluation (OSTE) before and after participation in the program as a standardized evaluation of teaching. Another possibility is that once these research residents return to their clinical role, institutional teaching evaluations of the residents who participated in the program could be compared to teaching evaluations of the residents who did not participate in the program or to historical controls, although of course this leads to the potential for bias in that the best teachers already had more interest and were more likely to participate. With regard to long-term outcome, one could track the match outcomes of students who rotate with residents who participated in the RRATP to determine if there was an increased likelihood of entering a surgical field, a finding which would be consistent with at least one other study.[8] Additional methods of investigation would be to triangulate these current findings with the perspective of junior residents who are the primary learners of the research resident teachers. A qualitative, interview-based study could explore whether junior residents perceive the same value of the RRATP or whether their perspective on the program is unique from the research residents who participate as teachers.

Conclusion

We describe the perspective of participants in a new department of surgery RRATP, including the finding that residents perceive high value of the program to themselves and others. Other departments may wish to pursue creating a RRATP for the benefit of their residents, learners, and patients. Programmatic factors such as longitudinal training and feedback on teaching can be incorporated to increase the perceived value of the RRATP to the resident teachers and potentially to more distant beneficiaries such as junior residents, students, and ultimately patients.

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