

The Interventional Radiology Interest Group: An Integral Tool for Medical Student Recruitment

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ABSTRACT

Education is evolving in the field of interventional radiology. Technical skills are no longer the primary focus of training, while a stronger emphasis is placed on longitudinal patient care. Interventional radiologists are now expected to perform rounds on their patients in the hospital and promote continuity of care in the outpatient setting (Murphy *et al.* Semin Intervent Radiol 2005;22:6-9). The recent establishment of residency programs in interventional radiology (RPIR) aims to foster this transition by integrating clinical rotations such as the intensive care unit and expanding resident time in the clinic (Siragusa *et al.* J Vasc Interv Radiol 2013;24:1609-12). With the new training model comes a greater need for early exposure of medical students to the field, as trainees now apply for RPIR during their 4th year of medical school. To address this issue, interventional radiology interest groups (IRIGs) have been developed by passionate students with a desire to educate their colleagues and further their own knowledge of IR. IRIGs inform medical students about the specialty through unique activities such as hands-on device workshops and information sessions. In coordination with supportive advisors, IRIGs play a vital role in recruiting talented trainees, many of whom may well become the next leaders of our field. This article will discuss the process of starting an IRIG and how to maximize available resources to foster its success.

Key words: Education, interest group, recruitment, symposium, workshop

INTRODUCTION

Charles Dotter established the interventional radiology (IR) specialty in 1964 with a successful percutaneous angioplasty in a woman with painful limb ischemia.^[1] In the decades to follow, technical skills, and innovation dominated the training process. There was a lack of emphasis on the clinical skills necessary to optimally manage patients and their conditions.^[2] As other clinical specialties began to learn the technical skills for certain IR procedures, interventional radiologists began to lose territorial rights. This affected the trainee recruitment in IR training programs,

as many prospective trainees instead pursued specialties such as vascular surgery and gastroenterology. The supply of IR trainees could not match the demand for procedures, which continued to grow as innovation and research thrived. This sparked a paradigm shift in IR education toward the clinical model.^[3]

The advent of residency programs in interventional radiology (RPIR) addresses a need for training that produces high-quality longitudinal patient care. Fundamental aspects of the IR clinical model include a thorough understanding of disease processes, medical management of conditions, critical care exposure, and greater follow-up in the clinic setting. Improvement in these areas will enable IR physicians to provide comprehensive care for their patients. Furthermore, this model provides an opportunity to strengthen relationships with primary care physicians and develop referral patterns at the trainee level.^[4]

During the fellowship era, diagnostic radiology trainees applied for IR fellowship during their 3rd year of residency.

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With the transition to RPIR, fellowships will essentially disappear. However, there will continue to be opportunities for diagnostic radiology residents to become board-certified interventional radiologists through the independent pathway. The independent pathway allows programs to fill additional IR training positions with graduating diagnostic radiology residents. Such trainees would enter the RPIR during its final 1-2 years, which are dedicated to IR training and clinical care. Despite this alternative pathway, the majority of positions will be filled by medical students who directly apply through the residency match. As a result, students must now decide on a career in IR as medical students, 5 years earlier when compared to the previous model. This presents a challenge with respect to recruitment of trainees. Medical student exposure to the IR specialty is limited in the first 3 years of medical school training, as core specialties such as medicine and surgery are the initial focus during the transition from the classroom to clinical setting. Many medical students currently do not rotate through radiology until their 4th year of school, at which point a specialty may have been chosen already. As such, early engagement of students in IR is critical for recruiting talent and maintaining the growth of the specialty.^[5] interventional radiology interest groups (IRIGs) are playing a fundamental role in this effort, with over 80 groups currently active across the country.^[6] This article will explain how an IRIG can effectively increase student engagement in the IR field at an institutional and national level.

DISCUSSION

Interest groups are a crucial entity of medical school education, acting as a catalyst for exploration of various specialties before core clinical rotations begin. Managing an interest group well, especially a new one requires passionate student leadership, resident and faculty involvement, good marketing and a variety of avenues for student participation. Further complicating matters, IR is a subspecialty that many medical students have not heard of or are unaware of its entire scope of practice. A well run interest group can compete for student involvement, spread awareness of IR and provide opportunities for resident, faculty, and student interaction.

What is an IRIG?

An IRIG is a student organization that promotes early exposure to the field of IR through panel discussions, workshops, and special events. Similar to interest groups for other fields of medicine, 1st and 2nd year students are active in event organization and attendance, while 3rd and 4th year students adopt an advisory role. The head of an IRIG is an IR faculty member, who oversees and directs the group with assistance from enthusiastic residents and fellows. Under this hierarchy students are shown the opportunities, strengths, and pressures within the field. Students are not trained in

IR through the IRIG, but rather mentored and encouraged to explore the field through educational activities.

A board of approximately 5-8 medical students, composed largely of 2nd years, is established to assign leadership positions and coordinate events. To be well run, such leaders must be enthusiastic about the field, known by their classmates and approachable. A passionate and highly involved IRIG Chair, combined with a panel of students to share the division of labor works well. At the University of Rochester Medical Center (URMC), we have multiple positions on the board – clinical education, events, and social media – along with class liaisons and recruitment.

The IRIG board is responsible for recruiting students who wish to learn more about the specialty and may not necessarily serve a leadership role. Such students are added to a growing spreadsheet, which is used as a database for announcing upcoming events through email. At URMC we currently have 65 members in the database. The list of members grows most rapidly following the annual interest group fair, held at the medical school in August.

The transition of leadership positions happens over the summer as current leaders pass on the responsibilities to rising 2nd years. Selection of new leaders should be from preexisting 1st year members who were active in the group. If multiple individuals are interested in the same position, elections should be held within the group.

How to form an interest group

Starting an interest group is a formidable task that requires an organized approach and an awareness of school policy. In general, a threshold number of students and a designated faculty mentor are required, along with student senate approval to become a school sanctioned group. As a first step, we recommend reaching out to the society of IR. One of the society's primary recruitment initiatives is the growth of IRIGs across North America. The Medical Student Council is a section of the society that develops a

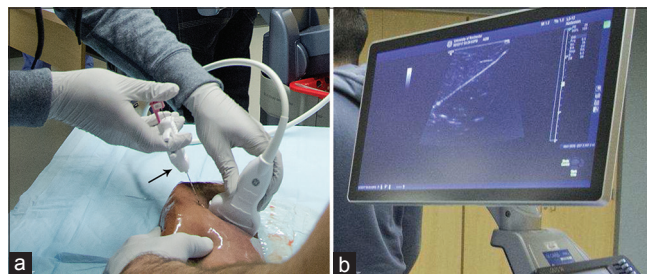


Figure 1: (a) A medical student attempts an ultrasound-guided liver biopsy using an 18-gauge biopsy needle (arrow). Olives and grapes were implanted into the liver to simulate lesions. (b) Ultrasound demonstrates the needle passing through the liver.

variety of educational resources for students. They created “The “IRIG roadmap,” a step-wise guide for students interested in starting a group at their respective schools.^[7] This manuscript aims to complement the IRIG roadmap’s principles and philosophies from the perspective of a single institution. The society’s resident-fellow-student section is another helpful resource for students looking for guidance from enthusiastic trainees with a vested interest in IR education and recruitment. Both groups provide an array of opportunities to learn more about the field, whether it be through educational projects, webinars, or live events. This in turn generates interest in the field and maximizes recruitment opportunities.

Communication and marketing for events play a key role in the growth of IRIG. Mass emails are generally ineffective due to the large volume of irrelevant emails received by students every day. Gathering a cohort of interested students at the beginning of the academic year and sending targeted emails to those select individuals yields the highest participation. At URMC, there is a student activity fair at the beginning of every academic year that serves as the initial point of contact with the student body. Over the course of the year, more students are added to the email list through word of mouth spread of events. Establishing a web presence can help garner interest, share important information about the specialty, and advertise IRIG events. A student with a background in Information Technology would be an ideal candidate to lead this effort.

Funding for an IRIG is primarily dependent on allocations from the Radiology Department and the Medical School. This varies by institution, and the IRIG board should budget their activities accordingly. Food is an excellent incentive for attracting members and should be factored into the budget. The use of expired equipment for hands-on workshops is a means to save money for other activities, including a large-scale event such as a regional IR medical student symposium.

Factors that influence the success of an IRIG

The key factors that influence success of an IRIG are a cohesive leadership board, a wide range of events, and supportive resident and faculty mentors. To maintain cohesion, the IRIG board holds meetings on a monthly basis to plan events and discuss recruitment strategies. The chair of the board, typically a 2nd year medical student, leads the meeting while the other board members talk about their areas of responsibility. A significant portion of these meetings is allocated to future activity planning with a goal of hosting an event every month during the academic year.

Although there is inter-institutional variation of activities, several are common to most IRIGs and gain particular

popularity among students. Open Q&A sessions with a panel of residents and fellows provide an efficient way to address questions regarding the new IR residency program in a comfortable environment, while at the same time forming relationships with those in the field.

One of the most popular events held by IRIGs is a hands-on workshop. Hands-on workshops, regardless of the specialty, are always in high demand. Students relish the chance early in their educational experience to start building hands-on skills, combined with the opportunity to ask questions. By nature, workshops fragment the large group of attendees into smaller ones, facilitating close interaction between medical students, residents, and the attending advisor. To compete, IR must take advantage of this recruitment tool and the cutting-edge technology inherent to the field.

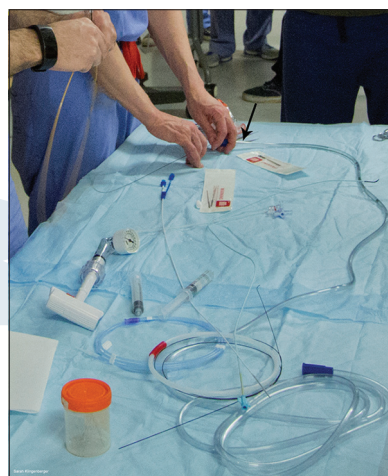


Figure 2: Interventional Radiology fellow shows various types of angiography catheters and guidewires to medical students. A nasal cannula tube was used to simulate a blood vessel, through which the wires and catheters were passed (arrow). Since this is only a demonstration using expired sterile equipment there was no indication for wearing gloves. However, appropriate sterile technique was explained to the students prior to the demonstration.



Figure 3: (a) A radiology resident illustrates a Turkel needle (arrow) and its application for ultrasound-guided drainage. (b) A Radiology resident oversees a medical student attempt to drain a simulated fluid collection within a liver. The tip of the needle (arrow) is seen within a round anechoic lesion. Packets of soy sauce were implanted into the liver to simulate the fluid collections.



Figure 4: Interventional Radiologist at our university performs a group-wide demonstration of angioplasty and stent deployment for the medical student group. Arrow points to the balloon inflation device.

Using expired equipment students design stations, chosen by level of interest and design feasibility, to simulate a particular IR procedure. The first IR workshop at URMC was a success, with up to 52 students rotating through five stations: ultrasound-guided liver biopsy (Figure 1), angiography and embolization (Figure 2), gastrostomy tube placement, ultrasound-guided paracentesis (Figure 3) and central venous access/tunneled central line placement. The faculty advisor supplemented these stations with a group-wide demonstration of stent deployment (Figure 4). Stations were run by both residents and fellows in the Radiology Department. Workshops require a great deal of planning, active student leadership, an involved attending advisor, and residents/fellows willing to contribute time.

For female medical students considering a subspecialty traditionally dominated by men, having access to a female voice is quintessential. It is important to address this aspect of the career decision as well. The female voice does not have to become that student's advisor or role model, but it is a reassuring presence that helps break down a perceived gender barrier. At URMC, one of our female IR fellows gave Women in IR talk highlighting her personal path to IR and obstacles faced. The society of IR supports this initiative and continues to grow its own Women in IR committee at the resident and attending levels. They collaborate with other committees in the society to promote the professional development of women in the specialty and increase the number of leadership positions held by women. Furthermore, the Women in IR committee provides a forum through which women in IR can network and develop educational resources.^[8]

The IR medical student symposium

The creation of an IRIG bolsters faculty mentorship in the student body and increases the prospects for a larger-scale event

such as an IR symposium. An IR medical student symposium is a day-long event consisting of speakers from the field and hands-on demonstrations with device representatives. It is usually held on a Saturday at an institution that helped organize the event. The event allows students to interact with residents, fellows, and attending physicians from a variety of backgrounds. It is an effective way to increase awareness of IR and highlight the innovation inherent to the specialty. Similar to their IRIG roadmap, the society of IR's Medical Student Council created a "symposium cookbook" to assist students who wish to develop a symposium at their medical school.^[9]

Supportive faculty and advisors is key for recruitment of speakers and coordination with device companies. The primary expenditure is providing breakfast or lunch, which can be costly with a large group. If your IRIG does not have enough funding from your institution to plan a regional symposium, another approach is to apply for an institutional grant through a device company. Their representatives enjoy the opportunity to educate trainees about the latest devices and will likely take your grant for a symposium into strong consideration. It is also encouraged to reach out to nearby IRIGs in the area to explore the possibility of a regional symposium coordinated by multiple institutions.

CONCLUSION

Recruitment, education, and innovation are three critical components necessary for continued growth of IR. This starts at the medical student level with early engagement in the field and an emphasis on clinical care. IRIGs are at the forefront of this initiative, with a nation-wide effort supported by the society of IR. A successful interest group requires a combination of strong student leadership and engaging activities. The IRIG at the University of Rochester has increased medical student awareness of IR and its vast potential as a specialty. We propose that medical students currently lacking an IRIG at their school use the above experience as a model for creating one. It is a welcoming challenge to those with a passion for the field and the motivation to pursue a leadership role. The process will help prepare our future IR leaders and advocates for the challenges that will face our specialty in the years to come.

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