



What are the perceptions of interventional radiology amongst foundation doctors and how can awareness be improved?

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AIM: To assess perceptions of interventional radiology (IR) amongst foundation trainees (FYs) and to explore how awareness can be improved.

MATERIALS AND METHODS: Seventy-nine FYs completed a survey developed by the Radiology Department.

RESULTS: Forty-five percent of FYs were introduced to IR throughout their training posts, whereas 38% learnt more via self-directed reading. Fifty-nine of the 79 FYs would not consider a career in IR with 53/59 lacking interest in radiology and 13/59 lacking enough information. The majority were aware that interventional radiologists have on-call commitments; however, 55% realised that they attend clinics. Just over 85% were familiar that ultrasound-guided biopsy was performed by IR closely followed by inferior vena cava (IVC) filter and nephrostomy insertions (81% and 72% respectively). Around one-third of FYs thought that interventional radiologists come from a surgical background while 64% knew that juniors are able to apply directly for radiology. Sixty-five percent rejected the notion of learning more about IR; however, the most preferred methods to raise awareness were elective placements and teaching throughout foundation years.

CONCLUSION: FYs perception of IR is generally poor due to lack of adequate knowledge. This may dissuade them from selecting radiology as a career. Efforts need to be exerted to raise awareness with the aim of attracting more juniors to IR in order to address the significant shortage of interventional radiologists in the UK.

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Introduction

Interventional radiology (IR) is a rapidly evolving subspecialty, which has significantly revolutionised patient care.¹ Key hole, and even pinhole, are terms used to describe procedures performed by interventional radiologists and as

such, their minimally invasive nature confers benefits in terms of patient recovery, morbidity, and mortality. The Royal College of Radiologists has written extensive guidelines to support emergency, urgent, and timely access to IR services²; however, a significant shortage of personnel means that 45% of services in England are unable to readily offer IR access.¹ The aim of the present study was to survey foundation (internship) year trainees (FYs) to assess their perceptions of IR, and also to explore the means by which these perceptions could be addressed with the overall

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outcome of encouraging junior doctors to consider a career in this advancing sub-speciality.

Materials and methods

An anonymised survey to address the study aims was designed and distributed to both FY doctors and medical students. The survey was published on the local university intranet and the students were given 1 week to respond. The response rate was, unfortunately, extremely poor and would not have given accurate outcomes. These results were therefore discarded. A total of 79 physical copies of the survey were distributed to FY 1 and 2 FYs on the wards and at a weekly teaching session. The study was registered at the Research and Development Department, Pennine Acute Hospitals NHS Trust.

Results and discussion

The response rate of the FY doctors was 100%. Forty-five per cent (34/79) of FYs were introduced to IR within their prescribed training posts with 38% (29/79) interested enough to learn more through self-directed reading. Around 28% (22/79) had heard of IR during medical school rotations and a few trainees (6/79) were exposed to IR during elective placements.

Despite reasonable awareness of the IR sub-speciality, 75% of FYs (59/79) stated that they were not willing to consider a career in IR and around 11% were unsure about pursuing a career in IR. Of those who did not wish to consider IR as an option, 53/59 lacked general interest in radiology and 13/59 felt they did not have enough information about this career option (Figs 1 and 2).

To assess the general knowledge of IR, participants were also asked questions about the IR Consultant role, procedures, and required training. Almost all respondents demonstrated awareness that IR is both an elective and emergency speciality, and the majority knew that out-of-hours on-call commitments were required. Over 45%, however, were unaware that attending clinic is part of the IR Consultant role. A study in the USA found that less patient contact discourages medical students from selecting radiology as a speciality,³ and it is understandable that inadequate knowledge of the typical IR Consultant job plan may dissuade junior trainees from pursuing IR as a future career.

Would you consider an interventional radiology career?

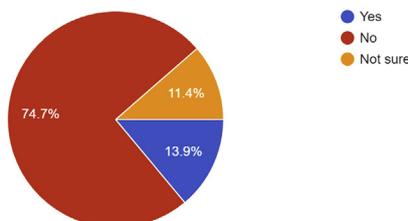


Figure 1 Pie chart of whether foundation trainees would consider a career in IR.

- If you answered "No" or "Not sure", what might be the reason? (Tick all that apply)

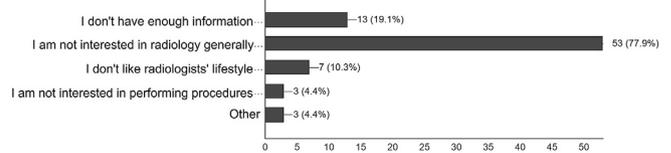


Figure 2 Bar chart for the reasons why FY trainees may not be interested in IR as a career.

On a list of nine different procedures, seven of which are performed by IR in the authors' NHS Trust, just over 85% could state that ultrasound-guided biopsy was performed by interventional radiologists closely followed by inferior vena cava (IVC) filter (81% of FYs) and insertions (72% of FYs). Hickman line insertion and endovascular aneurysm repair (EVAR) were selected by approximately equal number of FYs (47/79 and 46/79 respectively). Twenty-five per cent of FYs falsely thought that femoral–popliteal bypass procedures were performed by interventional radiologists (Fig 3). Overlap, both perceived and actual, between various specialities, such as vascular surgery, IR, and cardiology, likely contributes to the confusion demonstrated.⁴ More than 90% of FYs were aware that a full blood count, renal function, and clotting profile are required prior to an IR procedure and around two-thirds knew that local anaesthesia is a key component of many such procedures.

Fifty-eight per cent of FYs believed that there is a significant shortage of IR personnel in the UK with a further 37% unsure. Around one-third thought that core surgical training was required to enter IR. Although undoubtedly of value, previous surgical (or indeed medical) experience is not a requirement, and the rest identified that direct application to radiology training was the route to become an IR Consultant. The spread of answers received to the question "The total number of training years to become an Interventional Radiologist is..." indicates the inherent ambiguity of the question (Fig 4). Although the authors considered the correct response to be 6 years, the question did not specify whether this included foundation training, core training, speciality training, sub-speciality training, or a combination. It is true that trainees within the radiology programme come from a variety of backgrounds and experiences, and trainees in other training schemes may also be trained to perform a number of IR procedures including image-guided injections, biopsies, and endovascular interventions, adding further to the confusion.

- Interventional radiologists perform the following procedures: (You can select more than 1 option)

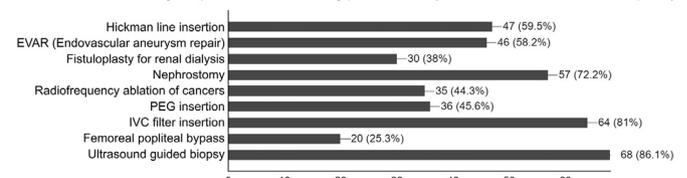


Figure 3 Bar chart of the response to the potential procedures performed by interventional radiologists.

- The total number of training years to be an interventional radiologist is:

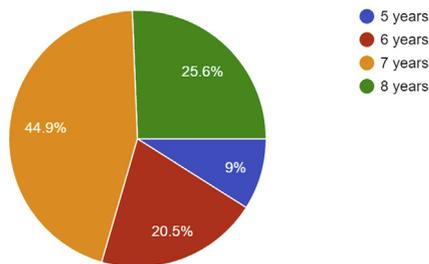


Figure 4 Pie chart of how long FY trainees believe IR training is.

- On a scale from 1 to 5, how would you rank these methods to raise awareness of interventional radiology?

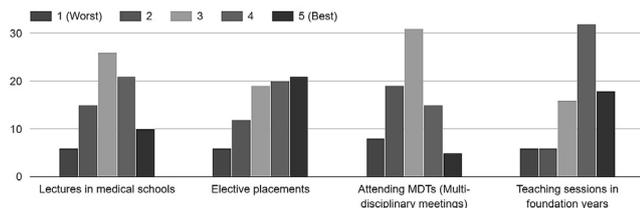


Figure 5 Bar chart of the preferred methods of raising awareness among FY trainees.

In the present survey, suggestions as to how to raise awareness of IR were proposed. The FYs were asked to rate these methods individually on a scale of 1–5 with 1 being worst methods to 5 being best methods. Surprisingly, 65% (50/79) rejected the notion of learning more about IR at all; however, the most preferred methods of raising awareness were elective placements and teaching throughout foundation years followed by lectures in medical schools, and lastly, attending multidisciplinary team (MDT) meetings (Fig 5).

The findings of the present survey are indicative of the poor general knowledge of FYs regarding IR, and highlights that IR is not introduced appropriately to undergraduates. The Royal College of Radiologists has already made recommendations regarding the embedding of clinical radiology as a whole in medical education.⁵ Interventional radiologists must take a leading role in the education of both undergraduate and junior doctors to address the apparent lack of interest in radiology of newly qualified doctors. In addition, universities and societies should ensure that a basic level of general radiology and IR knowledge is obtained by medical students prior to graduation. Multiple strategies can be employed including radiology placements, electives, and student-selected modules, encouraging attendance at IR procedures, provision of student access to IR conferences, and embedding appropriate MDT meetings within the student timetable. A study published in the *American Journal of Roentgenology*

concluded that integrating radiology into the curriculum of the first year of medical schools promoted the perceptions of radiology amongst students.⁶ Foundation schools also need to play a role in continuing to foster radiology teaching and awareness post-graduation. This can be done through teaching sessions, adequate access to taster week programmes, and including radiology rotations within their foundation posts. Again, the IR community need to step up and ensure they are involved in both decision-making and face-to-face teaching levels to capitalise on available opportunities.

Conclusion

The demand on IR services is increasing, and there is an imminent need for more staff. The recruitment of enthusiastic trainees is a necessity to allow surging patient needs to be met and the standards outlined by the Royal College of Radiologists to be achieved. The present survey provides some insight into the likelihood of FYs choosing IR when planning their future career, and suggests that a lack of general IR knowledge, particularly of the IR Consultant role and training routes, may be contributing to the low numbers willing to consider this sub-speciality. Early exposure to a career in IR, especially at undergraduate and foundation stages, will help to raise awareness and promote this ever-changing, exciting area of medicine. It is essential that we, as a radiology community, take responsibility for this crucial issue and work to boost perceptions of IR amongst the consultants of tomorrow.

Conflicts of interest

The authors declare no conflict of interest.

References

1. The Royal College of Radiologists. British Society of Interventional Radiology. Available at: ISBN: 978-1-905034-64-2 Ref No. BFCR(14)12 The Royal College of Radiologists. Accessed October 2014
2. The Royal College of Radiologists. Standards for providing a 24-hour interventional radiology service, second edition. Available at: https://www.rcr.ac.uk/system/files/publication/field_publication_files/bfcr171_24hr_ir.pdf. Accessed October 2016.
3. Fielding JR, Major NM, Mullan BF, et al. Choosing a specialty in medicine: female medical students and radiology. *AJR Am J Roentgenol* 2007 Apr; **188**(4):897–900.
4. Leong S, Keeling AN, Lee MJ. A survey of interventional radiology awareness among final-year medical students in a European country. *Cardiovasc Intervent Radiol* 2009 Jul; **32**(4):623–9.
5. Chowdhury R, Wilson ID, Oeppen RS. The departments of radiology and anatomy: new symbiotic relations? *Clin Radiol* 2008 Aug; **63**(8):918–20.
6. Branstetter 4th BF, Faix LE, Humphrey AL, et al. Preclinical medical student training in radiology: the effect of early exposure. *AJR Am J Roentgenol* 2007 Jan; **188**(1):W9–14.