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Interventional radiology in the United Kingdom - A long-term strategic plan

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Interventional radiology has come a long way since the first angioplasty procedure performed more than 60 years ago. Today, IR performs a major role in the provision of minimal access procedural practice in hospitals throughout the UK. The British Society of Interventional Radiology (BSIR) was formed in 1988 and includes among its membership - IRs, IR trainees, IR nurses, and IR radiographers. The BSIR exists to advance the practice of IR to improve outcomes for patients. Although the Society has delivered many innovations to patients and its members, it is timely to review the progress of IR to date and to formulate a plan for the next 10 or so years. This manuscript presents the long-term strategy for interventional radiology in the UK. Five pillars that underpin the strategic plan are described in the article: 1. Improve patient care and safety, 2. Improve IR workforce planning, 3. Improve IR education and training, 4. Build IR research capability, and 5. Optimise the BSIR for interventional radiologists.

Introduction

Interventional radiology (IR), as a minimal invasive image guided discipline, has come a long way since the first angioplasty procedure performed by Charles Dotter in 1963.[1] Today, IR performs a major role in the provision of minimally access procedural practice in hospitals throughout the UK.[2]

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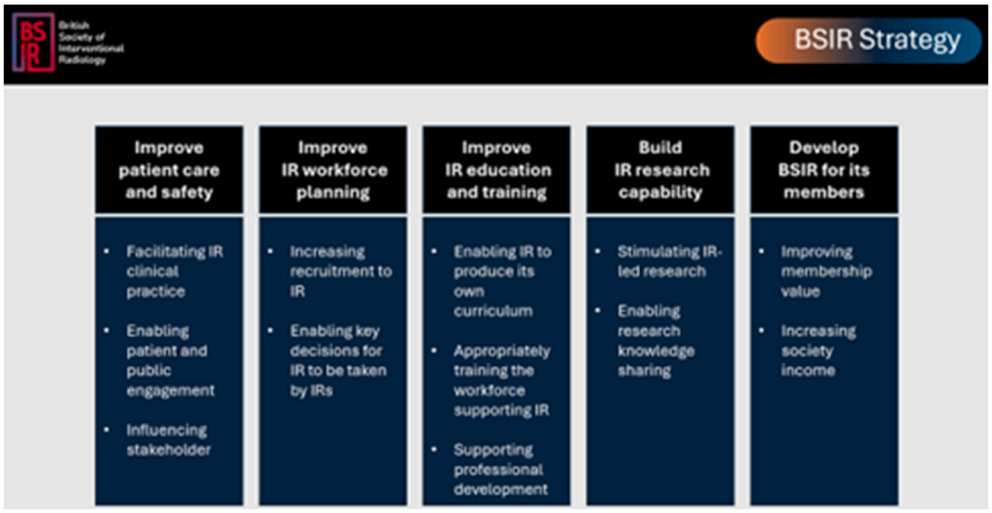

Figure 1 The BSIR long term strategy.

The British Society of Interventional Radiology (BSIR) was formed in 1988 and includes among its membership - IRs, IR trainees, IR nurses, and IR radiographers. The BSIR exists to advance the practice of IR to improve outcomes for patients. The Society is committed to creating a world where every patient receives the best treatment from an appropriate specialist.[3]

Although the Society has delivered many innovations to patients and its members, it is timely to review the progress of IR to date and to formulate a plan for the next 10 years – i.e. develop a long term strategy.[4,5]

IR in the UK: past to present

In the late 1980s, the main IR procedures performed in many teaching hospitals and larger district general hospitals in the UK were diagnostic angiography, including translumbar aortography, simple angioplasty procedures, percutaneous nephrostomy and ureteric stenting, percutaneous biliary drainage and stenting, embolisation of haemorrhage and biopsy and drainage procedures. It is beyond the scope of this article to describe the full panoply of IR procedures, involving many technological and procedural advances, that are performed in most UK hospitals today.

The traditional way of practising IR in the UK has involved only meeting patients when they appeared outside the IR room to be consented, performing the procedure and then not seeing the patient again unless a complication occurred, when the IR may or may not be informed about it unless another IR procedure was required. With increased responsibility for elective and emergency procedural care, the need for IRs to move away from simple proceduralists to provide a more rounded clinical and pastoral role in hospitals has become evident. The requirement of the BSIR to oversee and encourage this change in role for IRs mandates an overhaul of the Society's aims to provide the best guidance and representation for its members, radiology and clinical colleagues and for patients. The aim of this article is to set out the long term strategy for interventional radiology in the UK.

Strategic goals for UK IR

The BSIR has five strategic goals to improve interventional radiology in the UK (Fig 1).

1. IMPROVE PATIENT CARE AND SAFETY

Facilitating IR clinical practice: Interventional radiologists are not procedural technologists and there is an increasing requirement from official bodies that IRs should act as clinicians (accept direct referrals, see patients in pre-procedural clinics to take consent, follow-up patients post procedure).[6–8] At present, while it is theoretically possible for IRs to practise as clinicians, the implementation of a clinical pattern of practice by IRs across the UK is patchy, especially at a time when there are huge pressures relating to the diagnostic radiology (DR) workload. Increasing the provision of facilities for Day Case procedures in dedicated Day Case Units enables IRs to practice as clinicians, increase throughput and to better and safely address demand when hospital beds are better used for other patients.[9] This is just one example demonstrating that increasing clinical practice opportunities for IRs may improve patient care and safety, which was well demonstrated during the Covid pandemic.[10] Wherever IRs work, in university hospitals or district general hospitals, it should be their right to practise as a clinician for the benefit of patients, not a matter of internal individual negotiation or good will from hospital management.[11]

We recognise that although many IRs in the UK are full-time or almost full-time IRs, other IR practitioners have a significant DR workload or may be system specialists (e.g.

Gastrointestinal or Urological). Although it might be more challenging for these IRs to also introduce significant time for Clinical Practice into their busy weekly schedules, we believe that a commitment and allocation of time to Clinical Practice is essential for all radiologists who perform interventional procedures, whatever their subspecialty focus.

Our goal is that all Trusts/Health Boards provide allocated time in job plans to enable IRs to see all patients properly in outpatient clinics, on the wards, and not just before and after procedures.

Enabling patient and public engagement: Current awareness of interventional radiology is low amongst IR stakeholders, patients and the public. This creates challenges and barriers in ensuring consistency in the availability of, and access to, minimally invasive image-guided surgical treatments across the healthcare landscape. Historically, the BSIR has delivered limited work in this space, focussing mainly on providing patient information leaflets online. The strategy development process has identified opportunities to embed meaningful patient involvement, promote patient support groups and engage with the media to raise public awareness of IR. Over time, the BSIR Communications Committee will increase its focus on patients as a target audience for BSIR.

Our goal is to increase patient and public awareness of interventional radiologists and the treatment options they provide.

Influencing stakeholders: The Royal College of Radiologists (RCR) workforce census in 2024 highlighted that the widening gap between the capacity of the IR workforce and the increasing range and complexity of IR treatments being provided is leading to delays for patients and reduced capacity to train the next generation of IRs, as well as burnout within the IR community.[12,13] The BSIR aims to ensure that IR becomes a healthcare priority for local and national decision makers. In partnership with the RCR, the BSIR will work with key stakeholders to represent the IR community, support evidence-based policies, and provide expert guidance to partners to improve NHS systems.

Our goal is to work with the government and the NHS to inform policies and processes that will improve the working environment for the IR community and ultimately offer better care to patients.

2. IMPROVE IR WORKFORCE PLANNING

Increasing recruitment to IR: The number of IRs in the workforce needs to increase to meet ever-increasing patient demand and the requirement for 24/7 coverage of life-saving procedures. Equally significant is the exponential increase in the contribution of interventional radiology to cancer care. The CR(I) ST1 pathway has improved the situation but has not resolved it.[14] Moreover, the available number of CR(I) ST1 trainees year on year is reducing not increasing, indicating that although a very worthy initiative when it was introduced by the RCR three years ago, this is not yet producing the desired increase in run-through CR(I) IR trainees. Evidence from the USA, since IR became a US primary specialty within the American Board of Radiology, suggests that providing a clear and separate identity for IR from DR can increase the visibility of IR and drive a significant increase in recruitment.

IR status currently depends on self-identification. Under the current system, it is not possible to accurately count the number of IRs, making it difficult to plan workforce requirements for interventional radiology in the UK. There should be a more reliable method than self-identification to determine the number of practising IRs in the UK, whether full-time or part-time equivalents. One potential solution might be the use of a post-nominal abbreviation to designate individuals as IRs as was recently suggested by RANZCR (Royal Australasian and New Zealand College of Radiologists).[15] For example, BSIR members could place MBSIR (Member of the BSIR) or something similar after their name. Other examples of post nominals include FRCR and EBIR.

Our goal is to increase the IR workforce to address the increasing demands for IR in the UK.

Enabling key decisions for IR to be taken by IRs: At present, decisions about IR are often taken by people who do not always understand IR in depth or have IR at the forefront of their priorities. At the national level, IR is a subspecialty of the RCR. Inevitably, the majority of senior RCR officers are DRs, who have many other issues to address in DR than the needs of IR. IR leaders at senior leadership level in the RCR would be better able to address the needs of IR at the college level. Better still would be the change of IR status from a subspecialty of the Faculty of Clinical Radiology to a standalone Faculty of Interventional Radiology within the RCR, which would enable key decisions for IR to be made by the IR leaders of the Faculty of Interventional Radiology.

At a local level, Radiology Clinical Directors are usually not IR specialists with a few exceptions. Typically, non-IR CDs may focus on meeting reporting demands instead of letting IRs use non-procedural time for clinical practice like outpatient clinics. This has the effect that at present, Radiology CDs are not required to mandate clinical practice time for IRs, nor even obliged to offer even life-saving IR procedures, such as arterial embolization and percutaneous nephrostomy, on a 24/7 basis. The BSIR strategic goal is for there to be IR CDs in each hospital to look after the interests of IRs and to work alongside DR CDs.

Our goal is to establish national, regional and local structures whereby IRs are easily identified and responsible for decision making about IR.

3. IMPROVE IR EDUCATION AND TRAINING

Enabling IR to produce its own curriculum: The current IR curriculum is produced and owned by the RCR. There is no doubt that DR training is critical to becoming a competent IR, and that IRs will always need to ground their learning and practise in DR. A new curriculum, produced by the BSIR in collaboration with the RCR, to focus on IR with relevant DR topics included, would reduce less relevant subjects and introduce training (and exams) in techniques,

equipment and relevant clinical skills and competencies. The production of the IR curriculum by the BSIR would allow IRs to better adapt the curriculum to meet changing training needs, which is necessary due to constantly evolving technologies, including the introduction of AI into IR, and to respond appropriately to clinical practice.

An alternative to a new UK IR curriculum might be the adoption of the European IR Curriculum and Syllabus that is produced by the Cardiovascular and Interventional Radiology Society of Europe (CIRSE), now in its third iteration.[16] However, although potentially appealing, there are also obstacles to using this, which might include opposition by the UK General Medical Council.

Our goal is for the BSIR, in collaboration with the RCR, to develop a new UK IR curriculum.

Appropriately training the workforce supporting IR: Whether a full time IR or a DR/IR, who may spend 20% of their time in IR, the effective delivery of IR procedures is not possible without the rest of the IR team (including nurses, radiographers, anaesthetists, ACPs and AHPs), as well as the support of other clinical specialities. It is imperative that all members of the IR team are supported through appropriate training and education which should be facilitated by IRs, in collaboration with other relevant stakeholders. The BSIR supports dedicated IR Nurses and Radiographers through their Special Interest Committees and is committed to supporting growth in this area.

Our goal is to empower the entire IR team to optimise their IR practice to provide the best care to patients.

Supporting ongoing professional development: The continuing professional development of IRs, and the wider IR team, is an area within which the BSIR plays an important role. The BSIR supports IRs by producing, or circulating, Clinical Practice Guidelines to promote optimal practice. The BSIR also supports the IR team at all stages of their career pathway by providing Educational & Training events, as well as enabling CPD accreditation in partnership with relevant stakeholders.

Engagement with the European IR speciality exam, EBIR, is high amongst UK IRs. As this accreditation becomes increasingly established, it is likely to create more demand in the job market for IRs with specific IR accreditation. Although there may be interest in some quarters, the creation and delivery of a UK-owned specialty IR exam would be complex, time consuming and costly. The BSIR has recently officially endorsed the EBIR examination in a communication to all BSIR members.

Our goal is to promote the EBIR examination to all UK IR trainees who wish to undertake this recognised internationally known badge of IR accreditation.

4. BUILD IR RESEARCH CAPABILITY

Stimulating IR-led research: For IR to thrive, research is central to growth in IR. Many IRs are leaders in research and are involved in NHS trust and national governance structures working alongside all stakeholders including patients. Moreover, research active NHS trusts provide better patient care.[17]

IR trainee researchers particularly working towards higher research degrees have experienced a conflict between the demands of IR training and the time to focus on their research. The BSIR must support IR researchers to engage in research at whatever stage they may be in their careers. The role of the BSIR is to stimulate IR-led research and to support knowledge sharing through skills development. The BSIR also aims to assist IRs to gain access to research degrees, and to promote academic interventional radiology departments. By offering research grants/bursaries, forming partnerships with industry and stakeholders, and enabling registries for index IR procedures, the society will continue to support research activity within the IR community in the UK.

Our goal is to identify IR research priorities and galvanise the IR community to work together and instigate research in these areas.

Enabling research knowledge-sharing: Currently, the visibility of the level of IR research activity across the UK is limited. The Society aims to promote research awareness and support research collaborations and networking at a local and national level. Through scientific meetings, workshops, webinars and online tools, the BSIR will aim to inspire IRs at all levels to develop a research-active practice, promoting and providing resources to enable research networks and multi-centre projects to develop across the UK.

Our goal is to increase IR investigator-initiated research going forward.

5. OPTIMISE THE BSIR FOR INTERVENTIONAL RADIOLOGISTS

The BSIR is committed to meeting the needs of UK interventional radiologists. This will include a better understanding of the needs of interventional radiologists and identifying opportunities to provide them with the support that they require. Within IR there are several special interest groups, based on career stage (such as Trainees and Juniors) and on specialist interests (such as paediatric IR, interventional oncology, vascular anomalies and vascular IR) which the Society aims to support as best it can.

The BSIR must also support IRs where issues of turf arise from other clinical specialties (e.g. vascular surgery and interventional nephrology). Where these issues also impact on IR training, the BSIR will work with the RCR to resolve disagreements wherever they arise.

The role of the BSIR

The BSIR's values guide how the Society intends to go about achieving its strategic goals. These values exist to demonstrate how the Society wants to engage with members and stakeholders. They also reflect the community that we are striving to build in Interventional Radiology.

Inclusive: The BSIR values the diversity of the IR team and seeks to include everyone in the future of IR. As such,

the Society aims to improve the current gender gap within the IR community.[18]

Innovative: The BSIR thinks creatively, embracing new devices and digital technology, developing new ideas and learning from their implementation. The Society will continue to work in partnership with key stakeholders in IR to encourage adoption of new technology.

Collaborative: The BSIR works well together, internally and externally, to achieve improvements in patient care. The Society recognises the importance of working within local, national and international systems to effect positive change for patients.

How to achieve the strategic goals

In the UK, interventional radiology is a subspecialty of radiology within the Clinical Radiology (CR) Faculty of the RCR. Undeniably, there are both benefits and drawbacks to being a subspecialty of radiology. The benefits to IR of the current arrangement are that IR exists under the umbrella of an internationally recognised professional organisation and IRs are fully trained and accredited in diagnostic radiology (DR). However, many IRs do not consider that the RCR recognises fully all the needs of IRs, especially in relation to clinical practice and regarding their interaction with other specialties.

The BSIR strategy themes aim to improve all aspects of IR to benefit patients, to enable IRs to improve their practice, and to give a greater voice to IR in the UK. It is clear to the BSIR that all five strategic themes are underpinned by enabling greater specialisation of IR. The strategic goals outlined above will require significant work and application by both the BSIR and the RCR to achieve them. The strategic aims would be easier to achieve if the status of IR could be changed to either an independent IR Faculty within the RCR or an IR specialty within the RCR. An unpublished analysis of the benefits of an IR Faculty compared with an IR specialty indicated that full specialty status for IR would achieve some of the above goals but not as many as an IR Faculty would.

If faculty status could be achieved for IR, IRs could potentially obtain dual certification in IR and DR, as occurs in the USA. While there are significant potential barriers to achieving an IR Faculty, not least logistical and economic challenges within the RCR, the BSIR believes that an IR Faculty, delivering dual DR/IR certification, would enhance working relationships between IR and DR, positioning the RCR at the forefront of the NHS's move towards minimally invasive surgery.

Conclusion

Interventional radiology continues to grow within the UK. The goals presented above align with the objectives highlighted in a recently published document promoting the main aims of interventional radiology around the world.[19]

This long-term strategic plan sets out a five-pillared approach to improve interventional radiology in the United Kingdom for IRs and for patients. The five pillars are: 1. Improve patient care and safety, 2. Improve IR workforce planning, 3. Improve IR education and training, 4. Build IR research capability, and 5. Optimise the BSIR for interventional radiologists.

The goals set out in the strategic plan may be more easily realised if there is enhanced status of IR in the UK.

Author contributions

1. Guarantor of integrity of the entire study RM, NA, RL
2. Study concepts and design RM, RL, IM, MH
3. Literature research TMW, PH, RK,
4. Clinical studies N/A
5. Experimental studies/data analysis N/A
6. Statistical analysis N/A
7. Manuscript preparation EM, MH, TMW, RK, IM, PH, NA, RL
8. Manuscript editing EM, MH, TMW, RK, IM, PH, NA, RL

Ethics statement

The nature of our study meant formal ethical approval was not required.

Conflict of interest

The authors declare the following financial interests/personal relationships that may be considered as potential competing interests: Robert Morgan is the President of the British Society of Interventional Radiology. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

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