International Journal of Surgery 67 (2019) 101–106

Contents lists available at ScienceDirect

International Journal of Surgery

journal homepage: www.elsevier.com/locate/ijsu

Editorial

Structure and quality assurance of Fellowship Training in General Surgery: Consensus recommendations from the Association of Surgeons in Training

ARTICLE INFO

Keywords:
Surgical training
Fellowship
Trainee
'Live poll'
Audience response system (ARS)

ABSTRACT

Background: Over three-quarters of surgical trainees intend to undertake clinical fellowships to improve competence, confidence and the development of super specialised skills. At present there is no standardised national regulation for fellowships in the UK, leading to variability. The Association of Surgeons in Training (ASiT), an organisation representing surgical trainees in the UK and Ireland, sought to provide recommendations on the structure and quality assurance of fellowships in General Surgery.

Methods: A consensus session was held by ASiT at the Association of Surgeons of Great Britain and Ireland (ASGBI) 2017 Congress in Glasgow. A variety of perspectives on fellowships were presented by invited speakers, and thereafter a moderated discussion ensued in order to reach consensus. Live-polling using an electronic application facilitated consensus discussions. A writing group thereafter developed an initial consensus document which was then subject to electronic review by all authors and by ASiT council.

Results: Thirty-four delegates attended the consensus session. Views of the delegates and online discussants were that fellowships should be optional and not mandatory. There was (n = 16) no preference expressed between UK and international fellowships by half the group, while half expressed a preference for international fellowships. Regarding UK fellowships, the majority (n = 24) said that national registration of such fellowships should be established and (n = 23) agreed that a defined curriculum was required. However, national selection into fellowship training was not supported (n = 20). Perceived advantages of UK fellowships included ease of relocating within the same country (which was considered more family-friendly and cost-effective), and familiarity with the NHS system. Delegates considered the advantages of international fellowships to include: access to high-volume centres; diversity of case-mix; and structured, regulated fellowship programmes.

Conclusion: The consensus session found unanimous support for maintaining the option of both UK and international fellowships. While trainees support quality assurance of fellowships, they do not support a national selection process.

1. Introduction

1.1. About the Association of Surgeons in Training

The Association of Surgeons in Training (ASiT) is an independent professional body and registered educational charity working to promote excellence in surgical training for the benefit of patients and surgical trainees alike. With a membership of over 2500 surgical trainees from all 10 surgical specialties and trainee specialty associations, ASiT provides support at both regional and national levels throughout the United Kingdom and Republic of Ireland. Originally founded in 1976, ASiT is independent of the National Health Service (NHS), Surgical Royal Colleges, and specialty associations.

1.2. Benefits of Fellowship Trained Surgeons

Training in the UK is completed by the award of a Certificate of Completion of Training (CCT) For general surgery, this is in both general surgery and a subspecialist interest e.g. colorectal. In order to achieve CCT the trainee must have met certain competencies, and also passed the exit exam- FRCS. This is the same for the Republic of Ireland, although it is termed a Certificate of Completion of Specialist Training (CCST). Fellowship training is commonly undertaken in General Surgery. However, the term itself has many definitions. In its purest sense, fellowship means "friendly association, especially with people who share one's interests". In many ways, fellowship training facilitates networking and building of national and international friendships and collaborations. For the purpose of this study and consensus statement, fellowship was defined using ASiT's previous publication and states "an optional, additional period of clinical work undertaken within a defined specialty or subspecialty area by a surgeon not yet appointed to a substantive consultant position, and for whom this additional period is not a mandatory requirement of their training program." [1] This definition of fellowship training focuses on additional training beyond that provided in the curriculum, which the trainee has chosen to pursue. While usually done as a fellowship after CCT and after passing the FRCS, some trainees will undertake a fellowship pre-CCT.

There are many reasons to pursue fellowship training. These may include to experience another healthcare system and way of working, to augment skills and to enhance case load. Most importantly, fellowships can help develop niche skills or provide exposure to pathology and treatments beyond those typically included in standard surgical

https://doi.org/10.1016/j.ijsu.2019.03.002
Received 14 December 2018; Received in revised form 25 February 2019; Accepted 4 March 2019
Available online 25 March 2019
1743-9191/

curriculae or available within local training environments e.g. robotic surgery, pelvic exenteration or intestinal failure. Such additional training has benefits for both surgeon (additional training and skill accrual, potentially increasing their attractiveness to employers) and patients alike. A 2015 meta-analysis suggested a significant association between fellowship-associated hospitals and improved outcomes, as well as a slightly reduced rate of conversion for laparoscopic procedures for fellowship trained surgeons versus non-fellowship trained surgeons [2]. Thus, high quality fellowship programmes should benefit all stakeholders-the fellow, the patient, the unit and the system. Fellows receive high quality advanced training and individual units are recognised as places of high-quality training. Fellowship training programmes are associated with improved patient outcomes and broad system benefitsby enhancing collaboration, skill dissemination and innovation within the global healthcare system. Fellowships should not be needed or indeed used to replace deficiencies in the training program – training time must be used efficiently to produce excellently trained surgeons regardless of whether they go on to pursue fellowship training. It is important to be mindful of the training capacity in a unit and ensure that fellowship training doesn't dilute specialist registrar training [3]. Surgical training in the UK and Ireland is overseen by the Joint Committee for Surgical Training (JCST) which mandates the surgical curriculae in all ten surgical specialties [4]. Training in General Surgery produces a surgeon capable of independent practice in both general surgery and their special interest. Graded autonomy increases throughout training and competency assessments are increasingly used to guide entrustment decisions during training [4–6]. Current special interest areas include Colorectal, Breast, Endocrine, Upper GI, Advanced Trauma, General Surgery of Childhood, Transplant and until recently, Vascular Surgery [5]. Therefore, given the high level of surgical training, fellowships are not essential to practice as an independent surgeon. Surgeons need to demonstrate competencies to “Level 4” in the core subject areas of their special interest, e.g. anterior resection for a colorectal surgeon. For some highly specialised procedures where it is often more difficult to gain sufficient exposure within the traditional training pathway, e.g. oesophageal resection in upper gastrointestinal surgery, level 4 competency is not required for completion of training and instead trainees must reach level 3 competency. For these specialties, fellowships may be required to reach independent practice unless the trainee has managed to achieve beyond the curricular requirements pre CCT. In general, however fellowships are reserved for highly niche areas of practice that one would not be expected to gain sufficient exposure to as a trainee. As mentioned, another advantage of fellowship training is that it is often undertaken in an alternative location to where a trainee has undertaken their primary training. As such, fellowships are uniquely placed to allow both the development of technical competencies, and allow the trainee to experience and learn from another hospitals culture whilst working in new teams and understand different strategies to approach surgery and problem solve.

2. UK versus International Fellowship Training

2.1. Modern Fellowship Training in the UK

In the UK, over three-quarters of trainees across all surgical specialties state an intention to undertake clinical fellowships [1]. Fellowship training usually lasts between six months to two years and most commonly takes place at the end of training. The main skills sought by trainees from surgical fellowships include improved competence, confidence and the development of subspecialty skills [1]. Fellowship positions allow surgeons to personally develop and advance their role as the ‘trainer’ having reached a competency level to comfortably supervise registrars performing procedures[2]. Currently, UK trainees can select one of two routes for fellowship, those within the UK or those abroad. Internationally, many fellowships are highly structured and regulated, e.g. USA and Canada [7]. However, currently, there is no national regulation of surgical fellowships in the UK, with the exception of a small number of competitive fellowships that cross specialties called Training Interface Groups (TIG) fellowships (e.g. Oncoplastic breast surgery at the interface between plastics and breast surgery curriculae). Another small number of fellowships are quality assured by the Royal College of Surgeons (England). Currently incorporating eight specialty areas, a more detailed list of currently accredited fellowships can be found on the RCS senior clinical fellowship register [8]. The majority of fellowships in the UK (and Ireland) however remain without formal accreditation or quality control for the training experience they provide. The JCST, as the intercollegiate body that oversees training to CCT level, would be well placed to formalise and quality assure surgical fellowships in the UK and Ireland.

2.2. Consensus Group Methodology

In 2013, ASiT published results of a National pan-specialty workforce survey regarding clinical fellowships in surgical training. In 2017, delegate opinions on surgical fellowships were assessed at an ASiT consensus session at the annual meeting of the Association of Surgeons of Great Britain and Ireland (ASGBI) in Glasgow using electronic live polling. Following a number of invited speakers debating various aspects of fellowship training, a set of key questions were widely discussed in both an open group debate and thereafter in a smaller focus group. Voting was undertaken in real time as each question was addressed, using an online application [9,10].(see Fig. 1) To ensure that the views presented were representative of the wider trainee view, a draft consensus document was further within the Council of the Association of Surgeons in Training encompassing representation from all specialties and regions in the UK and Ireland. While the number attending the focus group at ASGBI was small, the structure of ASiT council with input from all surgical specialties, including representatives of general surgery subspecialty groups allowed for a representative sample. Furthermore, the results of the consensus session were broadly in keeping with results of previous quantitative work by ASiT in a 2013 survey of 1500 members [1]. Both delegates who attended the consensus session and those who participated via electronic input and review of the paper are listed as collaborators. Authorship is reported using the model previously published in IJS for collaborative authorship [11].

3. Results

3.1. Demographics of those attending the Consensus Session

Thirty-four delegates attended the consensus session at ASGBI. Fifteen attendees were specialty registrars in General Surgery with a variety of sub-specialty interests, and 7 were core trainees. Other members of the consensus group included Foundation Year doctors and medical students [(n = 3) each], and post-CCT trainees, Consultants and Specialty and Associate Specialist (SAS) doctors ((n = 2) each)) (see Table 1).

3.2. Timing and Location of Surgical Fellowships

Overall opinions on fellowship training are summarised in Table 2. Only 11 believed that fellowship training should be mandatory for all trainees. Twenty felt that the optimal timing for fellowship training was post-CCT. With regard to pre-CCT fellowships, 20 reported that these should be considered as out of programme training (OOPT) and therefore counted towards overall specialty training, rather than OOPE that doesn't count towards training. In terms of location, 16 preferred international fellowships and 16 expressed no preference for UK versus international fellowships.

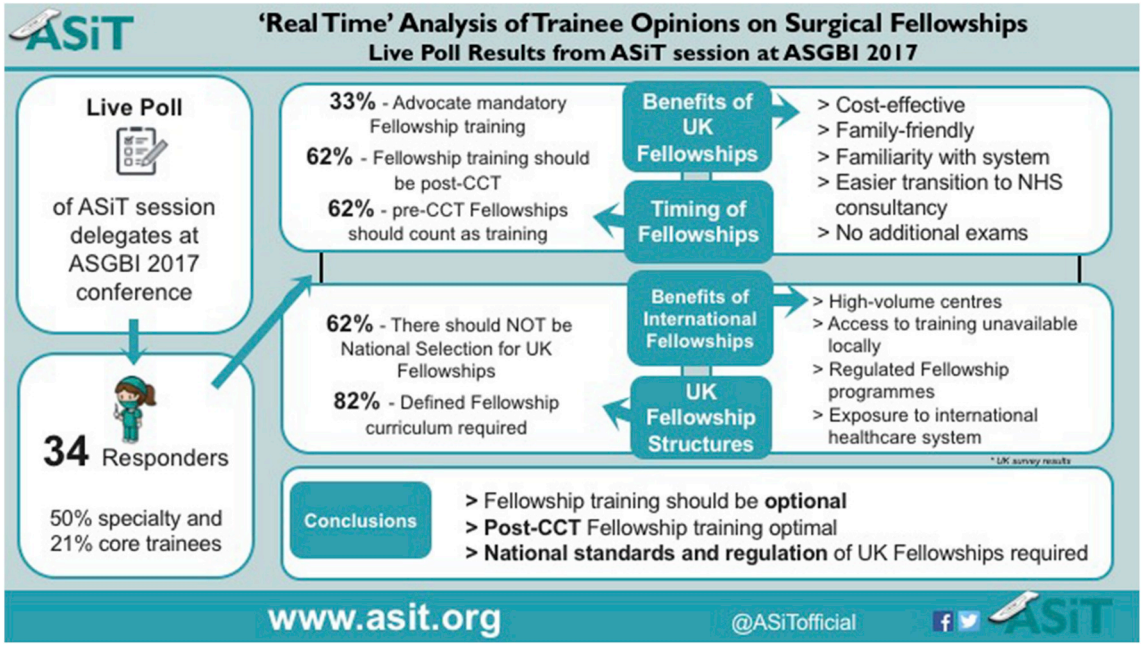

Fig. 1. Infographic summary of study.

Table 1
Demographics of respondents to 'live poll'. SAS = specialty and associate specialist; CCT = certificate of completion of training; GI = gastrointestinal; HPB = hepatobiliary.

	N
Demographics	
Grade	
Consultant	2
Specialty Trainee	15
Post-CCT Trainee	2
Core Trainee	7
Foundation Years	3
SAS doctors	2
Medical Students	3
Specialty Interest	
Upper GI/HPB	14
Colorectal	10
Vascular	4
Breast	3
Endocrine	2
Transplant	2
Other	6

Table 2
Opinions on Fellowship Training. CCT = certificate of completion of training; OOPE = out of programme experience (time not counting towards training); OOPT = out of programme training (time counting towards training).

	Respondents	N
Should fellowship training be mandatory?	33	
Yes		11
No		22
What is the optimal timing of fellowship training?	32	
Pre-CCT		12
Post-CCT		20
Should pre-CCT fellowships be considered as OOPE or OOPT?	32	
OOPE		12
OOPT		20
Preference for U.K. or international fellowships.	32	
U.K.		-
International		16
No Preference		16
Should there be national selection for U.K. fellowships?	32	
Yes		12
No		20
Should U.K. fellowships comply with national regulations?	26	
Yes		2
No		24
Should fellowships have a defined curriculum?	28	
Yes		23
No		5
Should there be a national register of fellowship positions?	28	
Yes		26
No		2

3.3. Curriculae and Standards of Surgical Fellowships

Over 23 agreed that fellowships should have a defined curriculum. Trends in response from all polled suggest that fellowship training should focus on sub-specialised areas of specialty practice and complex procedures that are infrequently performed in local centres and to which exposure is limited to during routine training. Exposure to complex multi-disciplinary procedures were particularly recommended for fellowship training e.g. pelvic exenteration. Twenty agreed that UK fellowship training should comply with a specific, nationally regulated purpose and standards. While 26 believed that a central repository of nationally-approved UK fellowship opportunities should exist so trainees could explore all potential options and see what options are available, the majority (n = 20) felt that national selection into fellowship posts was not appropriate. This was also reiterated in feedback from ASiT council.

3.4. Comparison of Advantages and Disadvantages of U.K. versus International Fellowships

A summary of the advantages and disadvantages of both UK based and international fellowships as highlighted by pooled delegates is outlined in Table 3. The advantages of UK fellowships include the ease of locating to fellowship sites in the same country which is more family-friendly and cost-effective. It is overall more convenient and less expensive. Also, familiarity with the system and healthcare culture

Table 3
A summary of qualitative responses to advantages and disadvantages of U.K. and International Fellowships.

Advantages of Fellowship Training
UK
1. Cost-effective and affordable
2. Family friendly, convenient
3. Familiarity with system
4. Potential easier transition NHS consultant position
5. No additional board exams
International
1. High-volume centres/Diversity of case-mix and experience
2. Access to training that is unavailable locally
3. Structured, regulated Fellowship programmes available
4. Develop a network of International colleagues for future collaboration/advice
5. Exposure to international healthcare system and structures
Disadvantages of Fellowship Training
UK
1. Competing with other trainees as fellowship positions not 'ring-fenced'
2. Inadequate regulation
3. Lack of experience of international healthcare systems
4. High volume of subspecialised procedures may not be available locally
5. Limited experience of worldwide practice and techniques
International
1. High cost
2. Highly competitive
3. Family logistics
4. Language barriers
5. Logistics (extra exams, international medical licencing, immigration issues)

facilitates easy transition and there are no additional board exams required. However, the disadvantages of UK fellowships were highlighted as inadequate regulation and quality standards in place for UK fellowships, reduced experience of an international healthcare system and limited experience of worldwide practice and techniques. Furthermore, it may be impossible to experience high-volume of subspecialised procedures that may not be avilable locally.

The advantages of international fellowships were described as: access to high-volume centres and diversity of case-mix; structured, regulated fellowship programmes; exposure to international healthcare systems and structures and an opportunity to develop a network of international colleagues for future collaboration and advice. Perceived disadvantages included: high cost of relocating; high competition for high quality approved fellowship posts, language barriers and other issues including international medical licencing and immigration obstacles.

4. Consensus Recommendations

Recomendation 1: Fellowship training should be optional. The JCST surgical training curriculum to attain a certificate of completion of training (CCT) should produce surgeons capable of independent practice in both General Surgery and their Special Interest, e.g. Colorectal Surgery.

Recommendation 2: The timing of fellowship training should be at a senior level. Post-CCT is the most popular timing for fellowships. However, maintaining the option of pre-CCT fellowships is important. This flexibility is particularly important for trainees who may have taken leave, e.g. maternity leave, who may need to convert a planned post-CCT fellowship into an OOPT in order to avoid missing the fellowship opportunity if they need to extend their CCT date. Pre-CCT high quality fellowship training should count towards training and be recognised as OOPT (out of programme training) rather than OOPE (out of programme experience) ideally.

Recommendation 3: Quality assurance of fellowships is desirable and recommended. JCST, being intercollegiate, are in a good position to quality assure fellowship training. Surgical fellowships should be focused on niche areas which are not covered within CCT, e.g. intestinal failure.

Recommendation 4) A national repository of information on fellowships should be made available. Ideally, this would include both details of the fellowships and a means to contact previous fellows who can give verbal feedback and advice to potential future fellows. This could contain number of cases the trainee is exposed to (both as an assistant as well as the operating surgeon), on-call responsibility and academic output where appropriate. This may be situated for example within a defined area on the JCST website.

Recommendation 5: Fellowships should have a defined curriculum. This may be a document submitted by the fellowship institution to JCST with a tailored curriculum for the fellowship in their institution but these curriculae should be available to fellows and future fellows on the JCST website so the fellow can see what they can expect to learn from the fellowship. A training contract between the fellow and the institution setting out roles, responsibilities and what the minimum training standard is within that institution should be signed by the fellow and the hosts and overseen by JCST.

Recommendation 6: There should not be national selection into fellowships. Fellowship training happens in a much more tailored fashion than other aspects of training, tailored to the fellows training needs and also family and personal circumstances. For dual-career households, this may involve planning fellowships to be in the same geographical location. Fellowship planning is often done years in advance by trainees allowing them to shape this to their own specialty ambitions and plan their family life and geographical location. Trainees may apply for fellowships in institutions where they may ultimately become future colleagues. The flexibility to suit family life and professional ambitions at an advanced stage in a surgical career is not well facilitated by a national selection process.

Recommendation 7: With the advent of credentialing, we foresee the niche areas of fellowship e.g. intestinal failure, being the mainstay of credentials in general surgery.

Recommendation 8: It is important in the credentialing process to ensure that international fellowships are recognised and that trainees are not discouraged from seeking high quality fellowship opportunities overseas. A UK fellowship should not be mandatory to achieve a credential. Rather, presentation of logbook evidence and references from international fellowships should be recognised in order to grant recognition of equivalent qualifications and to allow a credential to be awarded.

Recommendation 9: It is essential, especially in the context of the current political uncertainty surrounding Brexit in the UK that every effort is made to ensure continued access of Irish trainees to UK fellowships and UK trainees to Irish, European and other international fellowships [12]. The learning experience of international fellowships extends beyond the mere clinical knowledge gained, to the novel perspectives and ideas that can be generated as well as international collaborations and external advisors who can enhance patient care by allowing discussion of complex cases long after the fellow returns to take up a substantive consultant post.

5. Conclusion

These consensus recommendations are remarkably similar to results of ASiTs previous national survey of trainees views on fellowship training [1]. Trainees are clear that fellowship training is considered desirable but should not be mandatory. Fellowships should serve to develop and augment niche skills, rather than to replace deficiencies in training. Both UK and International fellowships can provide excellent training opportunities and should be recognised. Access to both UK and international fellowships for UK and Irish trainees must be maintained despite a changing political landscape. ASiT does support quality

assurance and accessible reliable information on fellowships. However, ASiT is opposed to national selection into fellowships. ASiT looks forward to working with national training bodies, e.g. JCST to promote high quality fellowships. Fellowships remain an important cornerstone of collaboration and networking nationally and internationally, as one global surgical community.

Ethical approval

Not applicable – voluntary consensus process therefore did not require ethical approval.

Sources of funding

None.

Author contribution

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Conflicts of interest

Jonathan Lund is the head of the Intercollegiate Surgical Curriculum Programme (ISCP)

Helen Mohan and the steering group, data collection group and writing group are members of the Association of Surgeons in Training council which advocates on behalf of surgical trainees, or sister surgical trainee associations.

Research registration number

Open Science Framework Registration link https://osf.io/r7vke/.

Guarantor

Helen Mohan.

Provenance and peer review

Not Commissioned, internally reviewed.

Data statement

The individual responses are not available in order to preserve survey responder anonymity and confidentiality.

CRediT authorship contribution statement

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