

EDITORIAL

HPB fellowship training: consensus and convergence

Andrew J. Robson & Rowan W. Parks

Department of Clinical Surgery, University of Edinburgh, UK

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Correspondence R.W. Parks, Department of Clinical Surgery, University of Edinburgh, Edinburgh EH16 4SA, UK. Tel: +44 131 2423614. E-mail: R.W.Parks@ed.ac.uk

Hepato-pancreato-biliary (HPB) surgery is an attractive choice for those interested in the multidisciplinary care of patients with a broad spectrum of complex benign and malignant diseases. Patient outcomes are improved by care within high volume centres.^{1,2} The process of centralisation and the coincident specialisation of surgeons³ present both an opportunity and a challenge to young surgeons who wish to pursue a career in HPB surgery. The development and increasing intricacy of hepatic surgical procedures, the introduction of advanced laparoscopic and robotic techniques and the expansion of modalities such as endoscopic ultrasound and ablative therapies, together with improvements in cross-sectional imaging and interventional radiological procedures, require the trainee HPB surgeon to be well versed in an extensive range of complex technologies. Globally, there is significant heterogeneity in the training and accreditation of HPB surgeons. However, germane to all systems is the recognition that meaningful HPB exposure should be delivered at the end of general surgical training. Typically, this has been achieved by undertaking HPB-specific fellowships.

North America enjoys the most formalised fellowship programme with three main routes: pure HPB training in Fellowship Council-approved posts with award of a completion certificate by the Americas HPB Association (AHPBA), American Society of Transplant Surgeons (ASTS)-accredited fellowship training in both liver transplantation and HPB surgery, and Accreditation Council for Graduate Medical Education (ACGME) complex general surgical oncology (CGSO) fellowships. There is, unsurprisingly, variation in the HPB caseload and the liver:pancreas preponderance of each fellowship, dependent on whether training is combined with liver transplantation or general oncology training.

Surgical trainees in Japan are required to clear three assessment hurdles en route to board-certification in HPB surgery (introduced in 2011). An initial broad training is followed by specialisation in gastroenterological surgery and then advanced training in HPB surgery. Candidates for board-certification in

HPB surgery are required to complete 50 major HPB cases at a board-certified institution, submit a video of selected surgical procedures and operative drawings of all surgical cases performed for assessment, together with demonstration of appropriate career progression with course attendances and publications. The pass rate is 60%, with 143 board-certified HPB surgeons in Japan as of 2015. Currently, there is no absolute requirement for board-certification to undertake HPB surgery in Japan, although most young HPB surgeons are highly motivated to achieve board-certification.

The Australian and New Zealand HPB Association (ANZHPBA) co-ordinates a two-year fellowship programme for surgeons who have completed general surgical training. There are competitive entry and exit requirements that include caseload competencies and curriculum completion together with an exam.

In the United Kingdom, award of the Certificate of Completion of Training (CCT) and entry onto the Specialist Register allows practice in general surgery across a range of disciplines, although the qualifying board examination (Fellowship of the Royal College of Surgeons – FRCS) entails a subspecialty-themed exam component. Despite a general qualification, many surgeons are competitively appointed to subspecialty-specific posts, driving surgeons to undertake appropriate subspecialty fellowships near the end or immediately after achieving their CCT. The Shape of Training Review⁴ has proposed a greater emphasis on training in the general area of broad specialities with the potential to subsequently credential in a specialised area of practice. The scope and process for credentialing or accreditation in the UK has not yet been defined but, in theory, it is possible to envisage HPB practice being an accredited subspecialty in the future.

In Europe, pan-continental regulated HPB speciality fellowship training does not exist although many HPB fellowship positions are available. Due to European Union regulations, the qualifications of surgeons are recognised across all member states,⁵ despite notable heterogeneity in content and scope of training. The European Board of Surgery of the Union

Européenne des Médecins Spécialistes (UEMS) seeks to deliver a standard European surgical qualification and has developed a number of voluntary accreditation diplomas in various surgical specialities, including HPB surgery, which is facilitated by the European-African HPB Association (EAHPBA). Speciality diplomas are not legal requirements for practice in Europe but are gaining in popularity. Award of such a speciality diploma requires demonstration of surgical caseload, appropriate career progression and candidates must pass a qualifying examination. Eligibility criteria to sit the HPB examination include 2 years training in HPB surgery in a UEMS country, a logbook demonstrating that at least 50 major HPB procedures have been undertaken, one published paper in a peer-reviewed journal and 20 credit points for attending relevant HPB courses or conferences. Seven diets of the UEMS HPB examination have been held between 2009 and 2016. A total of 79 candidates have sat the exam with an overall pass rate of 76%. The EAHPBA executive is currently developing a process to provide training centre accreditation.

A recent conference on North American training in Hepatobiliary Surgery⁶ was held by the Society of Surgical Oncology (SSO), the AHPBA and the ASTS. Current training and themes associated with ideal fellowship training were discussed. A number of thought-provoking recommendations were made that, although specific to North America, have applicability to global HPB surgical training. Stakeholders at the conference agreed that accreditation of programmes should be more stringent, with programmes being required to demonstrate an appropriate educational environment, minimum caseload volume with an appropriate balance between training and service delivery. It was recommended that a core HPB fellowship curriculum should be considered with adjunctive exposure to novel or emerging technologies such as robotic HPB surgery. Fellows should be assessed summatively and formatively in both operative and non-operative clinical skills during and at the end of the programme. The methodology for this should be accepted by fellows, trainers and the public. This will require agreement on the composition, quantity and methodology for assessment within fellowship programmes. Proposed index cases included Whipple's pancreaticoduodenectomy, distal pancreatectomy, major hepatectomy, segmental liver resection, biliary anastomosis and common bile duct (CBD) exploration. Accreditation should be awarded on evidence-rather than eminence-based criteria with consideration given to modular and flexible subdivisions of accreditation to reflect the HPB subspeciality case mix that fellows may undertake. A taskforce was established at the end of the conference to investigate how this may be achieved.

In today's data-rich and global surgical community, many speciality associations are seeking to develop international co-operation with regard to fellowship training. For example, the IHPBA fellowship registry is accessible online (although currently entry to the registry is not standardised and does not

require formal programme accreditation). Similarly, the AHPBA and ANZHPBA are exploring a mechanism for an interactive, online HPB educational programme. To date, this programme has utilised moderated, asynchronous discussion boards on relevant HPB topics.⁷ When one considers other international online surgical programmes, the potential benefits to the HPB community are clear.⁸

Two apparent omissions in the consensus conference were workforce planning and the overt, formalised input of fellows themselves. Workforce planning was deemed beyond the scope of the conference but is important and fiendishly complex. Given the unpredictability of future technologies, changing surgeon demographics, evolving lifestyle decisions and progressive working time policies across multiple jurisdictions, the balance of training and service delivery will continue to prove somewhat challenging. The input of fellows is important in further design of programmes. For example, fellows are able to inform potential deficiencies in breadth of training.⁹ Separately, there appears to remain some disparity between the perceptions of programme directors and fellows regarding operative ability to undertake certain index complex cases, with fellows reporting lower confidence.¹⁰ Consideration of this may help inform decisions on index caseload as there are no strong data on minimum case numbers, although it has been reported that 20 pancreatectomies are required for equivalence in mortality rates and 60 for equivalence in morbidity rates.^{11,12}

Many of the consensus conference action points for further improvement of accredited HPB fellowships in North America⁶ have aims that are common to different surgical speciality fellowships across the world. Co-operation and sharing best practice with national and international organisations developing similar fellowships (regardless of speciality) is likely to prove useful and cost-effective. Reliable information regarding caseload volume and an informed consensus on assessment of non-operative skills (clinical judgement, multidisciplinary working, clinical leadership) may be generated. Globally there remains heterogeneity in how this may be achieved across multiple surgical cultures and healthcare systems. Indeed, different national and regional HPB associations may learn from each other on best practice in fellowship development. For example, assessment of judgement is difficult and currently no formally evaluated tools exist. This may prove easier to develop in a resource-conscious environment where investigative yield is important and requires managed stewardship of clinical resources.

Fundamentally, there should be recognition that formalising HPB fellowships will be an iterative process, and a willingness to revise and incorporate new assessment and training methodologies as they arise is essential. Accreditation of fellowship training programmes and the eventual accreditation of practising surgeons has inherent logic. However, it will likely prove to be the most contentious element of fellowship revision.

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