Standards for Vascular Training
2012

WWW.VASCULARSOCIETY.ORG.UK

1.0 Introduction

1.1 The last decade has seen UK vascular practice evolve from a vascular surgical subspecialty of general surgery into a separate stand-alone specialty. A number of training and practice factors have provided this impetus for vascular specialisation.

1.2 The inclusion of vascular surgical training in general surgical training has become anachronous and the current system no longer provides adequate training for UK consultant vascular practice. There is no longer a need for vascular surgeons to have comprehensive training in general surgery emergencies, as modern vascular surgeons have relinquished their commitments to the general surgical take. Furthermore, general surgical subspecialties, such as breast surgery, have no relevance to the practice of a specialist vascular surgeon, although some abdominal surgical competencies are required. Whilst some senior vascular surgeons continue to have a general surgical component to their work, the majority of recent consultant appointments have been into dedicated vascular posts, working with a team of vascular surgeons. The main driver for this change has been the need for 24/7 specialist cover for patients requiring emergency vascular care.

1.3 The existing subspecialty vascular Certificate of Completion of Training (CCT) programme in general surgery, requiring a minimum of 4 years emergency general surgery, provides insufficient time to train a vascular specialist to the standards required by the new vascular curriculum. Specifically, the medical, imaging and endovascular skills essential for contemporary vascular training cannot be catered for within the general surgical curriculum. The acquisition of these skills is best provided within a separate specialty. There is increasing evidence that good outcomes are associated with a high volume of specialist work. Outcomes are also improved when specialist vascular anaesthetists are involved with the assessment and peri-procedural management of elective and emergency vascular cases.

1.4 Another problem with current training is the need for trainees to gain sufficient emergency vascular experience. With appropriate on-call arrangements, good emergency experience can be gained at large, high-volume vascular units, with 24/7 on-site vascular interventional radiology and anaesthetic cover. Without careful rota planning, exposure to an adequate volume and intensity of vascular emergencies is less readily acquired at a hospital that participates in a clinical network.

1.5 Vascular surgeons also have to deliver the medical management of patients with vascular disease. This knowledge required for vascular medicine has more in common with cardiology, diabetology, renal and stroke medicine; and few transferable competencies with other general surgical subspecialties. Vascular surgery also has a shared practice interface with interventional radiology, transplant surgery and cardiothoracic surgery. The new specialty of vascular surgery will be able to forge closer links with these specialty groups than is currently possible.

2.0 Vascular Training

2.01 The Vascular Society will make recommendations to the Deaneries on standards for specialist vascular centres suitable for vascular surgical training, before they submit programmes for approval to the General Medical Council (GMC), pending the formation of a vascular surgery Specialty Advisory Committee (SAC). The planned Vascular Specialty Training Programme will have a minimum duration of 8 years, comprising two years of core surgical training and 6 indicative years of specialist training. The specialty will be uncoupled, requiring a separate national selection process from core training (CT2) into vascular specialty training (ST3), and all stages will have adequate exposure to emergency care.

2.1 Core Training

2.11 The potential vascular surgery trainee will undergo broad based core surgical training, with the opportunity to sample a range of surgical specialties. The objective will be to attain the knowledge, skills and behaviours required of all surgeons (i.e. the common competencies), together with some initial competencies relevant to the specialty of vascular surgery. The core surgical training programme will comprise a

minimum total of 4 different specialty attachments, with a minimum of 4-6 months core experience in vascular surgery and 4-6 months experience in general surgery being desirable.

2.12 Other specialty attachments which might usefully be undertaken in Core or Foundation training include anatomy demonstrating, emergency medicine, cardiothoracic surgery, cardiology, trauma and orthopaedics, plastic surgery, paediatric surgery and critical care. After successful core training, trainees who decide upon a career in vascular surgery will seek to enter Vascular Specialty training. Progression to ST3 will require acquisition of core surgical competencies, a pass in the IMRCS examination and a successful national application and selection process.

2.2 Specialty Training

2.21 Specialty training will consist of a minimum of 6 indicative years: 1 in general abdominal surgery and 5 in vascular surgery (Figure 1). The first two years (ST3-4) are designated as intermediate stage training and the last four years (ST5-8) as final stage training. A minimum of 4 years experience in emergency vascular surgery is required. Training placements should rotate regularly with trainees working for different consultants and hospitals to allow a breadth of experience of all subspecialty areas.

2.22 At the intermediate stage (ST3-4), trainees will gain experience of managing patients with common elective and emergency vascular conditions. Vascular procedures within the abdomen, including open abdominal aortic aneurysm (AAA) repair, will require training in gastrointestinal (GI) surgery. To gain this familiarity, vascular training will include one year of elective GI surgery and one or two years of emergency general surgery (preferably also including emergency vascular surgery). In exchange, general surgical trainees will be offered 6 months training in elective and emergency vascular surgery at the same ST3-4 level.

2.23 The final stage of training at ST5-8 will include adequate exposure to those vascular surgical and endovascular procedures likely to be encountered in specialist consultant vascular practice, including vascular access. Training will also require regular attendance at multi-disciplinary clinics and meetings, competence in basic duplex ultrasound and axial imaging interpretation, manipulation and planning. The necessary skills should be acquired in these four indicative years. The degree of specialisation in all aspects of open vascular surgery, access surgery and endovascular surgery may vary depending on individual career aims. However, it is expected that a trainee will be able to manage competently the majority of unselected vascular cases by the end of ST8. Complex elective and emergency cases may require the assistance of more experienced or other specialty colleagues, even after gaining a CCT.

<table>
<tr><th colspan="2">Intermediate Stage</th><th colspan="4">Final Stage</th></tr>
<tr><td>ST3</td><td>ST4</td><td>ST5</td><td>ST6</td><td>ST7</td><td>ST8</td></tr>
<tr><td colspan="2">One year of elective and one or two years of emergency vascular surgery

One year of elective and one or two years of emergency

GI surgery</td><td colspan="4">Four years of elective and at least three years of emergency vascular and endovascular surgery

Vascular medicine

Vascular access

Duplex ultrasound

Axial imaging interpretation, manipulation and planning</td></tr>
<tr><td colspan="6">Professional behaviour, leadership, teaching, audit and research</td></tr>
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Figure 1. Outline of the content of vascular specialty training. Years are indicative.

2.3 Structure of Training

2.31 Entry into ST3 will involve a competitive national selection process. The person specification for entry into vascular surgical training at ST3 will be published on the Medical Specialty Training (England) website following curriculum approval by the GMC. The essential components are achievement of the CT1 and CT2 competencies of the core surgical training programme as evidenced by successful Annual Review of Competence Progressions (ARCPs), and completion of the iMRCS examination.

2.32 Progression through training is demonstrated by acquisition of the levels of knowledge, clinical and technical skills determined for each stage of the Vascular Specialty Syllabus, as well as the generic Intercollegiate Surgical Curriculum Programme (ISCP) Professional Behaviour and Leadership Syllabus, including teaching, audit and research. During core training, trainees will attain the required competencies to enter specialty training at the ST3 level. In the intermediate and final stages the level set for each topic within each section of the syllabus for the end of ST4, the middle of final training at ST6 and the end of final training at ST8, will need to be achieved.

2.33 Stages have been divided in this way so that during the ARCP process trainees' progress can be assessed and modified to ensure all necessary knowledge, skills and behaviours have been acquired. The competencies expected by the end of the intermediate stage are common for all trainees, and the same principle of progression will apply to the final stage. The design of the specialty sections in the syllabus is comprehensive, but for trainees in the final stage of training, acquisition of the competencies in every section may not be appropriate or necessary. The level of expertise can be chosen by the trainee in discussion with the Training Programme Director (TPD) according to their career aspirations. In some areas of practice, it is unlikely that full competence will be gained because of technical complexity, or because some conditions and procedures are uncommon. The levels of skill have been adjusted accordingly in these areas.

2.34 Trainees in the final stage of training should work in major specialist vascular units and may develop their own special interests during this time. The existing model of vascular and general surgery training, often based around a single major unit will change to a regional model which should include several major centres. This will help to ensure that the placements within a vascular training programme will be able to provide the range of experience required for completion of specialist vascular training. Trainees who wish to pursue specific advanced competencies which cannot be provided within a regional training programme may require Out Of Programme Experience (OOPE), such as that provided by an Endovascular Fellowship.

2.35 Trainees must maintain an ISCP logbook of experience, and demonstrate progression and achievement of the competencies required through a record of courses, practice on simulation, workplace-based assessments and examinations. This portfolio will continue into consultant practice. The Intercollegiate Specialty Examination in Vascular Surgery will be taken during ST5-ST8 (Figure 2).

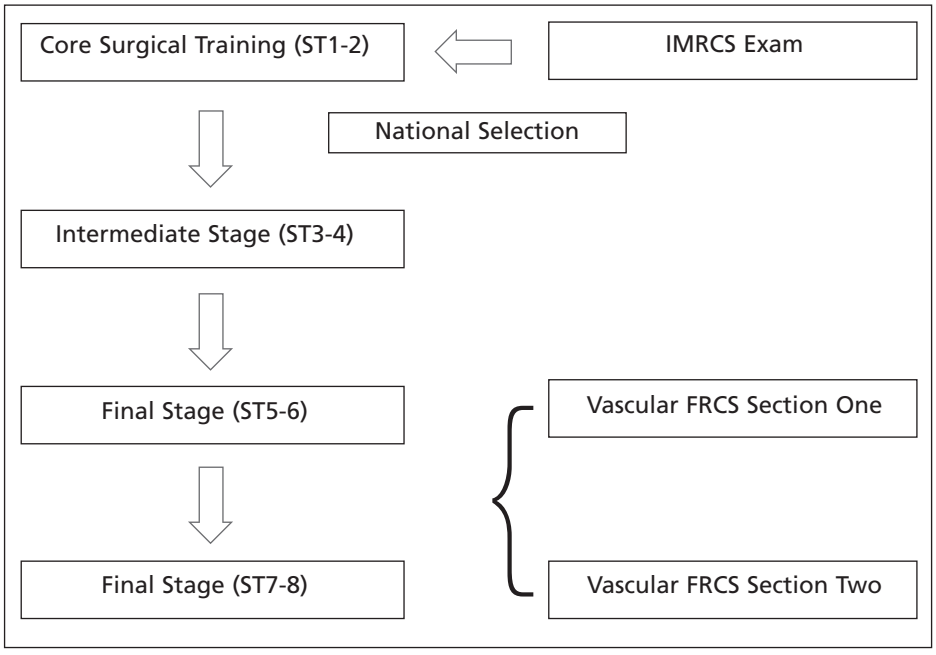

Figure 2. Draft proposed outline of selection and assessment system for vascular specialty training. A successful ARCP will also be required at the end of each level of training (ST1-8)

2.4 Academic Vascular Surgery

2.41 Academic vascular surgery (whether basic, clinical, health science or educational) provides an exciting and challenging career for those who wish to combine clinical surgery with a major commitment to research and/or undergraduate teaching. Trainees interested in this career pathway will, in addition to completing clinical training in vascular surgery (and developing an area of special interest), acquire a high level of competency in research (and teaching). Academic trainees will be expected to gain the same clinical competencies as non-academic trainees and will be subject to extension of indicative years by ARCP panels if the panels decide that their research commitment requires prolongation of their clinical training.

2.42 Each year the National Institute for Health Research Trainees Co-ordinating Centre (NIHR TCC), based in Leeds, consults with the deaneries with regard to the speciality spread for Academic Clinical Fellowship (ACF) posts, which are run-through posts www.nihrtcc.nhs.uk/nihrfellow/ Last year the Department of Health (DoH) held a competition for an additional 50 ACF posts for orphan or at risk specialities. The consultation process also involves the centre for workforce intelligence www.cfwi.org.uk

2.43 Depending upon the speciality, local deanery and academic support ACFs can be appointed at either CT1-2 or at ST3. At the present time there are several NIHR ACF and Academic Clinical Lecturer (ACL) posts in general surgery with an interest in vascular surgery. It is anticipated that a proportionate number of general surgery ACFs will be allocated to vascular surgery. Those appointed to these ACF posts are required to (i) spend 25% of their time in academic and/or teaching activity, (ii) have access to a research training programme which must be credit bearing and capable of leading to a Masters level qualification (iii) obtain an academic mentor and (iv) submit an application for a training fellowship (usually PhD) with (i) British Heart Foundation (BHF) Clinical PhD Programme, (ii) Medical Research Council (MRC), (iii) Wellcome Trust or (iv) NIHR Doctoral Research Fellowship).

2.44 If a PhD is undertaken then this is designated as OOPE. On completion the trainee returns to his/her previous level on the clinical (not ACF) training programme. It is envisaged that on completion of these posts the trainee will develop the next step of their research career either by supervising a PhD student (clinical and/or nonclinical) or by applying for a project grant (with technician/nursing support). Once the PhD has been awarded, the surgical trainee is eligible to apply for an ACL which is a 4 year programme with a 50:50 commitment to clinical and research/teaching. During this time the trainee has the opportunity to apply for a Wellcome Trust/Academy of Medical Sciences grant for ACLs. It is hoped that during this phase of training the trainee will start to develop an independent research portfolio within the department, which will then guide the application for an Intermediate Fellowship with the BHF/MRC/Wellcome Trust or for a DOH Clinician Scientist award.

2.45 Further details on training in academic vascular surgery can be found on the Vascular Society website: www.vascularsociety.org.uk

2.5 Summary of Vascular Training

2.51 Vascular trainees will have completed the Foundation programme and core surgical training, passed the iMRCS examination and been successful in the national selection process prior to commencing ST3.

2.52 The Intercollegiate Specialty Examination in Vascular Surgery will be taken during ST5-ST8.

2.53 Training in vascular surgery must provide sufficient experience to ensure that trainees are competent to manage a typical consultant elective and emergency workload.

2.54 Vascular training rotations will be organised on a regional basis, headed by a TPD working within the School of Surgery framework.

2.55 Trainees must maintain an ISCP logbook and demonstrate adequate experience in the majority of procedures specified in the vascular surgery Syllabus.

2.56 By the end of ST8, trainees should have gained the expected competencies in the majority of the procedures specified in the vascular surgery Syllabus, as demonstrated through Procedure-Based Assessments.

2.57 Failure to obtain the expected experience and competencies by the end of ST8 will be addressed by an extra period of targeted training.

2.58 Trainees will be encouraged to become Affiliate Members of The Vascular Society and attend its AGM. They should also attend the recommended vascular courses and workshops run by the Vascular Society, the Royal Colleges of Surgeons and the European Society for Vascular Surgery.

2.59 Trainees should show evidence of engagement in audit (in keeping with local hospital guidelines) and research through presentations at regional, national and international vascular meetings, and publication of papers relevant to vascular practice in peer-reviewed journals.

2.510 Trainees will have an annual ARCP. The ARCP panel will make recommendations regarding future placements on the regional specialist training programme to ensure comprehensive training. Specific deficiencies or advanced competencies which cannot be addressed regionally may require Out of Programme Experience (OOPE), such as that provided by an Endovascular Fellowship.

3.0 Vascular Training Units

3.01 Vascular training will be on specialist units with surgeons who are in dedicated vascular practice and members of the Vascular Society or equivalent. Vascular surgery units who wish to provide training must demonstrate (1) a high volume of work, (2) outcomes in line with national defined standards and (3) a consultant rota which provides a sustainable 24/7 emergency surgical and interventional radiology service. Consultants should not have any elective commitments when on-call. The rota may be supported by Non-Consultant Career Grades (Associate Specialists, Staff Grades & Clinical Fellows).

3.02 Most vascular training units will have insufficient specialty trainees to provide middle-grade cover, especially at night. There will be only approximately 120 vascular trainees in the UK because a ratio of 1 trainee to 3 consultants is required to conform with workforce planning requirements. The timetable for vascular trainees from ST5 upwards should maximise their supervised elective and emergency vascular experience. Shift-working will not deliver this experience. Alternative arrangements such as on-call from home, or long-day rather than night working are required.

3.03 Other staff supporting the delivery of the service may include core surgical trainees, foundation trainees, surgical care practitioners, vascular specialist nurses, physiotherapists, occupational therapists and vascular anaesthetists. All staff should work within a Multidisciplinary Team framework. If there are more approved training places than trainees, placements will be allocated on the basis of the quality of training and outcomes. However, popular units must ensure that there is sufficient capacity for each trainee.

3.1 Specialist vascular units should have the following:

3.11 An elective and emergency vascular workload that provides sufficient supervised experience for trainees to achieve the expected competencies for their level of training.

3.12 Trainees working in a team with at least two supervising consultants to ensure adequate supervision and experience. If there is more than one trainee on a unit, then ideally they should be at different stages of training.

3.13 A volume of work sufficient to achieve outcomes in line with national standards for all index procedures (AAA repair, carotid endarterectomy, infrainguinal bypass, major amputation, arteriovenous fistulae and varicose veins).

3.14 Whenever possible, all elective and emergency procedures (part or whole) should be performed by a trainee under consultant supervision, if a trainee at the appropriate level is available.

3.15 Sufficient elective and emergency experience cannot be delivered by shift-working. Alternative arrangements such as non-resident on-call, or long-day rather than night working are required to maximise experience.

3.16 Recognition by NHS AAA Screening Programme (NAAASP) as an AAA treatment centre.

3.17 A dedicated vascular ‘hybrid’ interventional suite with high-quality fixed imaging equipment, theatre-specification room with adequate radiation protection, full anaesthetic facilities and trained staff.

Detailed requirements have been published by an Expert Vascular Advisory Group in association with the MHRA: www.mhra.gov.uk/Publications/Safetyguidance/Otherdevicesafetyguidance/CON105763

3.18 Wards dedicated to the treatment of patients with vascular disease including single sex bays and cubicles.

3.19 Dedicated vascular outpatient clinics at least twice a week, with links to diabetic foot clinics and other specialties such as interventional radiology and stroke-prevention, plus vascular access clinics.

3.20 Intensive care, high dependency and post operative care facilities. Units should work towards rotas that provide 24/7 vascular anaesthesia cover.

3.21 A 24/7 vascular emergency rota and 24/7 access to on-site diagnostic and interventional vascular radiology.

3.22 Access to a CEPOD (Confidential Enquiry into Perioperative Deaths) theatre to avoid delays for patients who require urgent intervention during daytime/evening hours.

3.23 Vascular investigation facilities, including digital subtraction angiography, spiral computerised tomographic and magnetic resonance angiography. Regular training sessions for vascular trainees in axial imaging and interventional radiology.

3.24 Non invasive vascular ultrasound facilities, with accredited vascular scientists or sonographers, and regular sessions for vascular trainees to obtain experience in duplex ultrasound.

3.25 Weekly multidisciplinary team meetings with nursing staff, physiotherapists, occupational therapists, interventional radiologists and relevant physicians (cardiologists, diabetologists, nephrologists, stroke physicians).

3.26 Good access to rehabilitation facilities (preferably onsite), in line with the Amputation Quality Improvement Framework.

3.27 Arrangements for outcome data to be recorded or audited independent of the clinician who performed the procedure, and submission of all index data to the National Vascular Database.

3.28 A climate which encourages clinical audit and research. Participation in relevant multicentre randomised clinical trials.

3.29 Consultant clinical supervisors who are members of the Vascular Society, registered with the ISCP, maintain a CPD portfolio and trained in assessment and giving feedback.

3.30 Educational supervisors who have completed their School of Surgery/Deanery training requirements (e.g. generic Educational Supervisor Training plus Training and Assessment in Practice)

3.31 Educational Supervisors with allocated supporting professional activity (SPA) time for supervisory meetings and Clinical Supervisors with protected time for teaching in outpatients, on ward rounds and in the operating theatre.

3.32 Access to a procedural skills centre with appropriate facilities to allow trainees to achieve adequate competence on simulators before treating patients, according to the national framework for simulation training.

3.33 Adequate provision of regional courses and/or funding to permit trainees to attend the key national courses recommended in the Vascular Curriculum.

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