Cardiothoracic Surgery Curriculum

Purpose statement

Proposal for August 2019

The purpose statement addresses the requirements of the General Medical Council's Excellence by Design: standards for postgraduate curricula[1] (theme 1) and the Shape of Training Review. It sets out patient and service needs, scope of practice and the level of performance expected of doctors in training.

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1. Purpose statement for Cardiothoracic Surgery

1.1 The curriculum scope of practice, service, patient and population needs

The purpose of the curriculum for Cardiothoracic Surgery is to produce, at certification, competent doctors, able to deliver excellent outcomes for patients as consultant surgeons in the UK. Evidence from the last decade indicates significant improvement in outcomes with surgeons being trained in a special interest (either cardiac or thoracic surgery) rather than Cardiothoracic Surgery. The majority of service needs relate to providing cardiac or thoracic surgeons, rather than cardiothoracic surgeons except in a few areas, as indicated by workforce data over the last decade (SAC / SCTS Workforce data attached).

The Cardiothoracic Surgery curriculum will provide consultant surgeons with the generic professional and specialty-specific capabilities needed to manage patients presenting with the full range of acute cardiothoracic conditions up to the point of operation and to manage the full range of acute and elective conditions in the generality of their chosen special interest of Cardiac or Thoracic Surgery, including the operation. Trainees will be entrusted to undertake the role of the general Cardiothoracic Registrar during training and will be qualified at certification to apply for consultant posts in Cardiothoracic Surgery in the United Kingdom or Republic of Ireland with a special interest in Cardiac or Thoracic Surgery.

Patient safety and competent practice are both essential and the curriculum has been designed so that the learning experience itself should not affect patient safety. Patient safety is the first priority of training demonstrated through safety-critical content, expected levels of performance, critical progression points, required breadth of experience and levels of trainer supervision needed for safe and professional practice. Upon satisfactory completion of training programmes, we expect trainees to be able to work safely and competently in the defined area of practice and to be able to manage or mitigate relevant risks effectively. A feature of the curriculum is that it promotes and encourages excellence through the setting of high-level outcomes, supervision levels for excellence, and tailored assessment and feedback, allowing trainees to progress at their own rate.

1.2 Shape of training review

The Shape of Training (SoT) review[2] provides an opportunity to reform postgraduate training to produce a workforce fit for the needs of patients, producing a doctor who is more patient focused, more general and has more flexibility in career structure. The Cardiothoracic Surgery curriculum meets the main recommendations of SoT as shown below.

1. Takes account of and describes how the proposal will better support the needs of patients and service providers:

The curriculum will produce surgeons with a special interest in either cardiac or thoracic surgery – and will therefore provide clarity to employers as to the skills a surgeon will have on appointment as consultants. The increase in surgeons with a special interest has been demonstrated to have improved the outcomes for patients over the last 10 years – both for cardiac and thoracic surgery. Service providers are no longer advertising jobs in combined cardiothoracic surgery (except in Ireland). Where required by local service needs, it will also be possible to train in both Cardiac and Thoracic surgery.

The curriculum has been developed in consultation with stakeholders, including trainees, trainers, employers, lay representatives and other groups, ensuring the development of a curriculum that is fair, flexible, non-discriminatory, fit for purpose today with the capacity to evolve in future iterations in response to changing needs of patients.

Discussion regarding change in the Cardiothoracic Surgery curriculum has been going on within the specialty, and particularly the SAC, since 2013. This was partly driven by changes that were already occurring in the specialty, where consultants were increasingly being appointed to cardiac or thoracic positions, but not mixed practice (i.e. cardiothoracic). Evidence from national datasets suggest too that thoracic surgery in particular was, in general, better done by surgeons who just did that part of

the specialty. Other drivers were competitiveness of trainees against EU and non-EU applicants for consultant posts, as well as trainees wanting direction and workforce planning.

A number of meetings established that separate cardiac and thoracic practice was becoming (and is) the norm in the UK, and the role of the SAC was to facilitate this change. A fundamental principle was that the specialty should not split, rather there should be mixed exposure initially, in keeping with the Shape of Training Report from October 2013, and then specialisation in the later stage of training. The majority of the SAC, after discussing other options, favoured a period of combined cardiac and thoracic training followed by at least 4 years in the special interest of choice. Once consensus was arrived at, in conjunction with the GMC, stakeholders were approached with the proposed change in training. These included:

The devolved 4 Nations
NHS Employers
Other SACs
Specialty Association (Society for Cardiothoracic Surgery - SCTS)
Education providers – Lead Dean, Training Programme Directors
Trainees
Core Surgery
Intercollegiate Exam Board
Patient/Lay representatives

This list is not exhaustive. Once responses were received, these were collated and presented by the SAC Chair to the Committee with the vast majority of responses being positive. Where there was disagreement (largely around emergency competencies) these points were addressed in rewriting the syllabus.

2. Ensures that the proposed curriculum to CCT equips doctors with the generic skills to participate in the acute unselected take and to provide continuity of care thereafter:

The curriculum aims to produce surgeons with both the generic knowledge and clinical skills to treat patients with both cardiac and thoracic surgical diseases up until the point of operative intervention. Trainees will be expected to deliver an unselected take in both cardiac and thoracic surgery throughout their training. Trainees will be expected to look after both thoracic and cardiac patients pre, peri and post operatively during their training.

3. Where appropriate describes how the proposal would better support the delivery of care in the community:

The nature of Cardiothoracic Surgery is such that it is largely performed in tertiary centres. Outpatient clinics and multi-disciplinary teams (MDTs) can be delivered closer to the patient at referring district general hospital (DGH) centres, and this already takes place. In addition, virtual clinics can be considered in the future.

4. Describes how the proposal will support a more flexible approach to training:

The curriculum allows ease of transfer into other surgical specialties following core training (CT1-2) or run through ST1-2 training. There is generic cardiothoracic training until the end of Phase 1 – allowing flexibility in special interest choice until relatively late in training pathway. It is also possible to train in both Cardiac and Thoracic surgery (although a longer training time is likely).

The curriculum describes clinical Capabilities in Practice (CiPs) shared with other specialties in surgery supporting flexibility for trainees to move between the specialties in line with the recommendations set out in the GMC's report to the four UK governments[3]. The CiPs include the Generic Professional Capabilities (GPCs) common to all medical specialties, facilitating transferability of learning outcomes across other related specialties and disciplines. It will, therefore, be possible for trainees to transfer generic knowledge, clinical and surgical skills to another surgical specialty without restarting at ST1 level. As an example, prior learning of history-taking, physical examination, health promotion, medical record keeping and technical skills in one specialty may allow accelerated learning in the clinical areas of another specialty with identical requirements for

communication skills, team-working and empathy, compassion and respect for patients. Consequently, trainees will acquire generic skills in the CiPs which can be transferred to other surgical specialties, or to other non-surgical specialties. Trainees who choose a different career route may be able to have a shorter than usual training pathway in their new training programme, in recognition of learning already gained.

This flexible approach with acquisition of transferable capabilities will allow training in Cardiothoracic Surgery to adapt to current and future patient and workforce needs as well as to changes in surgery with the advent of new treatments and technologies.

5. Describes the role that credentialing will play in delivering the specialist and sub-specialist components of the curriculum:

Post-certification credentialing will be considered for super-specialist areas of work to meet service and patient needs, these areas are detailed in 1.4.2

1.3 The high-level outcomes of Cardiothoracic Surgery

The curriculum is outcomes-based, specifying the high-level generic, shared and specialty-specific capabilities that must be demonstrated to complete training. There is a greater focus on the generic professional capabilities common to all doctors.

1.3.1 Capabilities in Practice

The high-level outcomes of the curriculum are expressed as Capabilities in Practice (CiPs). The 5 shared plus 2 specialty-specific CiPs describe the professional tasks or work within the scope of Cardiothoracic Surgery. These are:

1) Manages an out-patient clinic
2) Manages the unselected emergency take
3) Manages ward rounds and the ongoing care of inpatients
4) Manages an operating list
5) Manages a multi-disciplinary meeting

In addition to these, the specialty-specific cardiothoracic capabilities in practice in surgery are:

1) Able to manage patients within the intensive care and high dependency settings in both cardiac and thoracic surgery

2) Able to assess surgical outcomes of both cardiac and thoracic surgery at a personal and unit level, and is able to respond or adapt practice, where appropriate, without compromising patient care

By the completion of training and certification, the trainee must demonstrate that they are capable of unsupervised practice in all CiPs.

1.3.2 Generic Professional Capabilities

Embedded within each CiP are the full range Generic Professional Capabilities (GPCs) which describe the professional responsibilities of all doctors in keeping with Good Medical Practice.
These attributes are common, minimum and generic standards expected of all medical practitioners achieving certification or its equivalent. The GPCs have equal weight in the training and assessment of clinical capabilities and responsibilities in the training programme. The nine domains of the GPC framework are:

1. Professional knowledge
2. Professional skills
3. Professional values and behaviours
4. Health promotion and illness prevention
5. Leadership and team-working
6. Patient safety and quality improvement
7. Safeguarding vulnerable groups
8. Education and training
9. Research and scholarship

1.3.3 Supervision levels

The assessment of CiPs draws on the holistic judgement of Clinical Supervisors by ascribing the supervision level required by the trainee to undertake each CiP to the standard of certification. The level of supervision will change in line with the trainee's progression, consistent with safe and effective care for the patient. Typically, there should be a gradual reduction in the level of supervision required and an increase in the complexity of cases managed until the level of competence for independent practice is acquired. The supervision levels are:

Level I	Able to observe only
Level II	Able to act with direct supervision: a) supervisor present throughout b) supervisor present for part
Level III	Able to act with indirect supervision
Level IV	Able to act unsupervised
Level V	Demonstrates performance to a level well beyond that expected of a day one consultant

Phase 1 of training will be completed when the appropriate level of competency (as defined in 1.4 below) has been achieved in each CiP, and a trainee will be eligible for certification when level IV has been achieved. Level V indicates excellence.

1.3.4 Descriptors

Each CiP contains key descriptors associated with the clinical activity or task and all the GPC descriptors. The descriptors are intended to help trainees and trainers recognise the level of knowledge, skills and professional behaviours which must be demonstrated for independent practice. All descriptors will be taken in to account when carrying out assessment and they will be used by Clinical Supervisors to highlight where trainees achieve excellence at a faster rate and when targeted training is necessary in the manner of an exception report. They, therefore, provide the basis for specific, constructive feedback to the trainee. The CiPs will also provide trainees with a self-assessment, providing an opportunity to show insight and actively engage in the feedback discussion.

1.4. Progression through training

Trainees will enter Cardiothoracic Surgery training via a national selection process at either ST3, or through the ST1 run-through programme. Trainees will learn in a variety of settings using a range of methods, including workplace-based experiential learning in a variety of environments, formal postgraduate teaching, simulation based education and through self-directed learning.

Cardiothoracic Surgery training is outcome-based rather than time-based. However, it will normally be completed in an indicative time of 7 years (3 years phase 1 and 4 years phase 2) for those entering run through training at ST1 (formerly 8 years in the 2015 curriculum) and 6 years for uncoupled trainees entering at ST3 (2 years in phase 1 and 4 years in phase 2).

There will be options for those trainees who demonstrate exceptionally rapid development and acquisition of capabilities to complete training more rapidly than the current indicative time of 7 years. There may also be a small number of trainees who develop more slowly and will require an extension of training in line the Reference Guide for Postgraduate Specialty Training in the UK (The Gold Guide)[4].

Trainees who choose less than full time training (LTFT) will have the indicative training time extended pro-rata in accordance with the Gold Guide. LTFT trainees will perform both elective and out of hours duties pro rata throughout the time of LTFT.

The programme will be divided into 2 phases

- Phase 1 will take an indicative time of 3 years to complete for run through trainees, during which trainees will gain many of the GPCs and the knowledge, clinical and technical skills in both cardiac and thoracic surgery, as defined in the CiPs and syllabus. Uncoupled trainees should have acquired generic skills, both technical and non-technical, during core training, and it is anticipated that an indicative time of 2 years after entry into cardiothoracic training will be required to achieve competencies required for completion of Phase 1. At the end of Phase 1 there is a critical progression point for Phase 2 entry, assessed at the Annual Review of Competence Progression (ARCP), where trainees will demonstrate competencies in knowledge, clinical skills and professional behaviours commensurate with the CiPs and defined syllabus.

  By the end of Phase 1, trainees will follow a special interest in either cardiac or thoracic surgery after discussion with the Training Programme Director (TPD). The special interest will be based on the needs of the service, the preference of the trainee and the ability of the programme to support the trainee in that special interest. Where a programme cannot facilitate the agreed special interest needs of trainees, Out of Programme Training (OOPT) can be utilised. In exceptional cases, and with specific TPD and Deanery / LETB support, Cardiothoracic Surgery may be chosen as the special interest. Trainees will need careful counselling before following this route as it is likely to require extra training time. There are few geographical areas within the UK requiring such surgeons and central monitoring of these posts will be undertaken by the SAC and the Society for Cardiothoracic Surgery to ensure supply matches demand.

- Phase 2 will take an indicative time of 4 years to complete during which trainees will train predominantly in either cardiac or thoracic surgery with the exception of a small number who may train in Cardiothoracic Surgery to fulfil local requirements. During this time they will also sit the Intercollegiate Board Exam in Cardiothoracic Surgery.

  During Phase 2 of training it is expected that trainees will continue to be involved in the care of both cardiac and thoracic patients whilst on call so as to continue gaining the knowledge and clinical skills in the generality of Cardiothoracic Surgery. Trainees will continue to develop their GPCs and knowledge, clinical and technical skills in their special interest as described in the CiPs and the syllabus.

  Training in congenital cardiac surgery will be available during Phase 2 for a small number of trainees, who will be able to apply through a national selection process after passing the Intercollegiate Board Exam in Cardiothoracic Surgery. Training in the subspecialty of congenital cardiac surgery will take an indicative time of 2 years (total time at Phase 2 will still be 4 years).

  In this outcomes-based curriculum, some trainees may reach the end of Phase 2 in less than the indicative time. On completion of Phase 2 trainees will be eligible for certification and for recommendation to enter the specialist register. Trainees who do not meet the requirements of Phase 2 within four years may require an extension of training time in accordance with the Gold Guide.

1.4.1 Critical Progression points

Indicative levels of supervision are indicated for the end of phase 1. At the end of phase 2 trainees are required to reach level IV in both the shared and specialty-specific Capabilities in Practice.

Excellence will be recognised by:
a) achievement of Level V in any of the Capabilities in Practice
b) exceeding the supervision level expected for the end of Phase 1
c) achievement of a supervision level at an earlier stage than would normally be expected
d) recognition of particularly good performance in any of the descriptors within a Capability in Practice

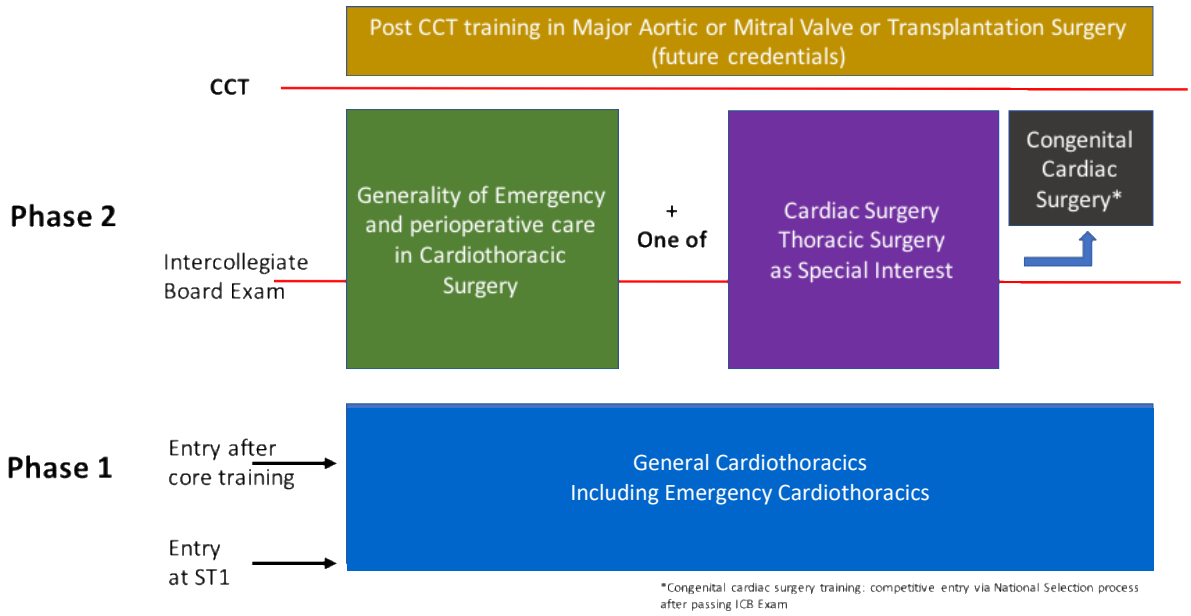
Capability in practice (shared)	**Supervision level (end of phase 1)**	**Supervision level (end of phase 2)**
1. Manages an out-patient clinic	Level II	Level IV
2. Manages the unselected emergency take	Level III	Level IV
3. Manages ward rounds and the ongoing care of inpatients	Level III	Level IV
4. Manages an operating list	Level II	Level IV
5. Manages a multi-disciplinary meeting	Level II	Level IV

Capability in practice (specialty-specific)	**Supervision level (end of phase 1)**	**Supervision level (end of phase 2)**
Able to manage patients within the intensive care and high dependency settings in both cardiac and thoracic surgery	Level III	Level IV
Able to assess surgical outcomes of both cardiac and thoracic surgery at a personal and unit level, and is able to respond or adapt practice, where appropriate, without compromising patient care	Level II	Level IV

1.4.2 Training Pathway

The training pathway for Cardiothoracic Surgery is shown in Figure 1

Figure 1: Training pathway for Cardiothoracic Surgery. * Congenital Cardiac surgery can be entered via a national selection process after a successful pass in the Intercollegiate Board Exam in Cardiothoracic Surgery (with a special interest in Cardiac Surgery declared in the exam).



1.4.3 Proposed place of Credentialing in Training/Post-training

Credentialing is defined as: 'a process which provides formal accreditation of competencies (which include knowledge, skills and performance) in a defined area of practice, at a level that provides confidence that the individual is fit to practise in that area…'

Credentialing will be particularly relevant for cardiac and thoracic surgeons who work in niche areas of medical practice that are not covered by existing standards for training and in new and emerging areas of medical practice.

The SAC is enthusiastic about working with the GMC to introduce a process of credentialing to enhance medical regulation and patient protection by:

- providing a framework of standards and accreditation in areas where regulation is limited or absent
- providing patients and employers with information about doctors' particular capabilities and current areas of competence
- providing better recognition of doctors' capabilities to support:
    - improvements in workforce flexibility and professional mobility
    - the new architecture for postgraduate medical education
- providing recognition of the capabilities of cardiac and thoracic surgeons to assure the public, service providers and employers that they have met and are maintaining UK standards in their field
- developing detailed frameworks, standards, assessment processes and proposals for quality assurance

Areas within the specialty which could be considered suitable for credentialing:

Cardiac surgery:
- complex aortic surgery
- mitral surgery
- minimally invasive cardiac surgery
- pulmonary thromboendarterectomy (PTE)

Thoracic surgery:
- tracheal surgery
- mesothelioma surgery
- robotic surgery

References

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