
Cardiothoracic intensive care and critical conditions

A course aimed at national trainees (ST4-6) in cardiothoracic surgery

22nd - 23rd May 2023

SCTS
EDUCATION



Introduction

This is a new course covering cardiothoracic intensive care and critical conditions aimed at national trainees in the UK and Ireland in their ST5-6 years. It uses a well established course 'Beyond BASIC Cardiac ICU' to deliver content on advanced critical care in cardiac surgery. It also has additional content covering thoracic surgical intensive care and critical conditions to align with the ISCP cardiothoracic surgery curriculum (4 August 2021), covering most aspects in the curriculum relating to this area.

This area of the curriculum is examined in part 1, and more recently in part 2 of the JCIE cardiothoracic examination in the form of a new viva section, reflecting the importance of this subject in training surgeons for the future.

This document will set out the content and format of the course, as well as some background information, learning objectives and alignment with the cardiothoracic surgery curriculum.



Beyond BASIC Cardiac ICU



Beyond BASIC Cardiac ICU is a well established 1.5 day course aimed at specialty trainee level. The course has been running for many years internationally, and consists of clinically based lectures, skills stations and a course manual.

The course lectures are:

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|--------------------|--|
| 09:00-09:15 | Registration |
| 09:15-09:30 | Introduction |
| 09:30-10:15 | Cardiac operations |
| 10:15-11:00 | Care of post operative cardiac patients on ICU |
| 11:00-11:30 | Coffee |
| 11:30-12:15 | Epicardial pacemakers Cardiopulmonary bypass |
| 12:15-13:30 | Lunch |
| 13:30-14:15 | Haemodynamic instability |
| 14:15-15:00 | Cardiac tamponade |
| 15:00-15:30 | Coffee |
| 15:30-16:00 | Cardiac arrest in the post-op cardiac patient |
| 16:15-17:00 | VA ECMO |
| 17:00-17:30 | Closing remarks |

The level of the lectures aligns with the current curriculum and skills needed by a day 1 consultant

The skills stations will run on the morning of the second day, with delegates rotating through each station as a smaller group for interactive focused sessions. The skills stations are

1. Pacing workshop
2. ECMO emergencies
3. IABP
4. Thoracic airways management
5. Ventilator basic settings

Each skill station has one instructor with 4-5 delegates and runs for 30 minutes.

Thoracic ICU and critical conditions

The afternoon of the second day will cover thoracic specific considerations in ICU and critical conditions

This will be delivered as a series of interactive lectures:

1. Ventilation
 1. Respiratory failure
 2. ALI/ARDS
 3. Pulmonary sepsis
 4. Invasive and non-invasive ventilation
 5. Management of the post pneumonectomy patient
 6. Bronchopleural fistula
 7. Persistent air leak and surgical emphysema

2. Thoracic emergencies and trauma
 1. Chest trauma management
 2. Tension pneumothorax
 3. Resuscitative thoracotomy
 4. Rib fracture management
 5. Haemothorax
 6. Pneumothorax
 7. Massive haemoptysis
 8. Stridor

Instructors for the course

To run the course ideally 6 members of faculty will be required (in particular on the morning of the second day to enable all skills stations to run). For the inaugural version for the SCTS, the faculty will be

Jon Rosser (Consultant anaesthesia and ICU)

Krishan Kapoor (Consultant anaesthesia and ICU)

Neil Cartwright (Consultant cardiac surgeon)

Jack Satchwell (Perfusionist)

Elizabeth Belcher (Consultant thoracic surgeon)

Annabel Sharkey (Consultant thoracic surgeon)

Mahmoud Loubani (Consultant cardiothoracic surgeon)

Mubarak Chaudhry (Consultant cardiac surgeon)

Michael Shackcloth (Consultant thoracic surgeon)

The most recent cardiothoracic surgical curriculum (4 August 2021) has two particular CiPs covered by this course: Manages the unselected surgical take (CiP 4) and Manages patients within the critical care area (CiP 6). The curriculum states that these CiPs should be taught in the early years of training, and this course offers the ideal package of lectures and simulated skills stations to ensure that the curriculum is covered to the right level for all trainees attending. The syllabus highlights the critical conditions that trainees should be able to demonstrate knowledge and understanding of their management in appendix 3 (see below). This course covers critical conditions 2-6, 8 and 9 in detail. Although aspects relevant to aortic dissection (1) and endocarditis (7) are also covered in this course, it is felt beyond the scope of this 2 day course to include the full syllabus relating to these subjects, which are covered in greater detail in other courses.

Appendix 3: Critical Conditions

Critical Conditions - Cardiothoracic

Each specialty manages a large number of individual conditions as described in the syllabus. Assessment of a trainee's ability to manage these is through the supervision level decisions made when assessing the shared and specialty-specific CiPs. Each specialty also has a list of critical conditions which are felt to be of significant importance for patient safety and to demonstrate a safe breadth of practice. These critical conditions will be assessed individually by means of WBA which will both provide formative feedback to the trainee and feed into the summative assessment of the AES and ARCP.

To ensure that trainees have the necessary skills in the critical conditions, by certification (the end of phase 3) there should be documented evidence of performance at the level of a day-one consultant to level 4 (*Appropriate for certification*) of the CEX or CBD (see CBD/CEX forms for the full list of levels). Please note that there is no requirement for a certain number of CBDs and CEXs), however.

Trainees must be able to demonstrate knowledge and understanding of the management of the following critical conditions:

1. Aortic dissection
2. Stridor
3. Secondary / tension pneumothorax
4. Cardiac tamponade
5. Acute haemothorax
6. Low cardiac output following Cardiac Surgery
7. Endocarditis-native or prosthetic valve
8. Respiratory failure following Thoracic Surgery
9. Myocardial ischaemia / infarction