

CARDIOTHORACIC ACCREDITATION STANDARDS 2023

Notes to Provide Clarification of ACSA Standards

Please be advised that:

- only certain parts of the cited GPAS reference text may be applicable to the ACSA standard
- the term 'appropriately trained' refers to someone who has had specific training in the knowledge and skills required to undertake their designated role
- areas that do not have any anaesthetic input will not be assessed during the onsite review visit
- the obstetric unit only refers to units led by an obstetrician: midwife-led units are not reviewed by ACSA.

Note 1	On the prioritisation of standards	Every ACSA standard has been assigned a priority. Standards are assigned priority 1 if they must be achieved in order for accreditation to be awarded. Priority 2 standards should be achievable by most departments. Priority 3 standards will be aspirational for most; however, they will provide targets for the highest performing departments to achieve.
		All new standards are assigned to Priority 2 in their first year but may become Priority 1 after that.
Note 2	On the use of the term 'policies'	Whilst the ACSA standards utilise the term 'policies', it should be noted that the term is used as an umbrella to refer to a form of locally agreed process that is maintained, kept up to date, can be used as a reference and is used during staff induction. This could be in the form of a policy document, practice document or even a piece of software that fulfils the function of the standard. The important criteria are that everyone knows the reference point exists and where to find it, and that the reference point is kept up to date in accordance with the trust/board policies. Policy documents should be standardised in format, have clear review dates and have been ratified in accordance with trust/board policies.
Note 3	For hospitals that do not provide services for patients under 18 years of age (or, in Scotland, under 16 years of age).	If your department does not treat patients under 18 years of age (or, in Scotland, under 16 years of age) routinely it is acceptable to mark paediatric specific standards as 'N/A'. Where the standard refers to both patients under 18 years of age (or, in Scotland, under 16 years of age) and adults, you may disregard the paediatric aspect and mark the standard as 'met' if you feel you meet that standard for adult care, or 'not met' if that isn't the case. If you have an emergency department but do not routinely treat patients under 18 years of age (or, in Scotland, under 16 years of age) or only occasionally treat patients of 16 or 17 years of age, then the paediatric standards are still considered applicable to a certain degree. In this instance, you will be required to provide further information on the pathway for these patients to determine a view of how those particular standards will apply to





Anaesthesia Clinical Services Accreditation

Note 4	On anaesthetists in training, SAS doctors who are not autonomously practising and anaesthesia associates (collectively referred to as 'supervisee').	The diverse nature of these posts means that the standards of education, training and experience that can be expected from post holders can vary quite widely. To ensure the safety of patients, anaesthetists in training, SAS doctors who are not autonomously practising and anaesthesia associates must be subject to an appropriate level of supervision of all their clinical practice and follow the 2021 RCoA guidance on 'Supervision arrangements for anaesthetists'.
Note 5	On terminology	Please use the following definitions and explanation to facilitate your understanding of the ACSA standards: Immediate Without any appreciable delay, within a matter of seconds or minutes. Unless otherwise specified, this should be no more than five minutes. Remote sites A remote site is any location where general or regional anaesthesia or sedation is administered away from the main theatre suite and/or anaesthetic department. This may be within or away from the base hospital. Common examples include MR or CT scanners, maternity units or dental sedation suites. Supervision The "Guidance on the supervision of anaesthetists 2021" comprehensively outlines arrangements for supervision and the
		different levels of supervision. Audit data based on the <u>Cappuccini Test</u> should be used to provide evidence for supervision arrangements. Sedation Unless otherwise specified, sedation refers to sedation delivered by an anaesthetist. Lead There should be anaesthetic clinical leads with clear and agreed responsibilities for different areas or specialties. The number of leads will depend on the size of the anaesthetic department, their areas of specialisation, workload and any ongoing areas of special focus. Where appropriate a named 'lead' can be a non-anaesthetist.
		Multidisciplinary This will have different meaning in respect of which healthcare professionals are referred to according to context and clinical situation. It is referred to as an integral part of perioperative care; 'the practice of patient-centred, multidisciplinary and integrated clinical care for patients from contemplation of surgery until full recovery.'





Autonomously practicing anaesthetists are SAS Doctors who can function autonomously to a level of defined competencies, as agreed within local clinical governance Frameworks. SAS Doctors* are Speciality Doctors, SAS Specialists, Associate Specialists, Staff Grades and other closed SAS Grades. Locally-employed Doctors (LEDs)* are doctors on local, employer-based contracts, commonly based on a current or historical version of the trainee contract. Examples of these roles include Trust Doctors, Trust Grades, Clinical Fellows, and Medical Training Initiative doctors. Some doctors are in this position short-term, between stages of training, or before becoming SAS doctors or consultants. Others are now in this position longer-term. *These definitions are taken from the Association of Anaesthetists style guide: https://anaesthetists.org/Portals/0/PDFs/Wellbeing/Association%20style%20guide%20for%20describing%20types%20of%20anaes thetist%20and%20staff%20aroups.pdf?ver=2022-12-21-122110-427





5.4.1.1 The process for preoperative assessment of patients presenting for cardiac and thoracic surgery (including thoracic aortic) and cardiology patients undergoing procedures in cardiac catheter laboratories is defined within the patient pathway. This should include TAVI, high-risk paraprosthetic leak closures, MitraClip and VT ablation.

EVIDENCE REQUIRED

A clinical pathway detailing the various components of preoperative assessment should be available for review.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery

GPAS REFERENCES

- 2.2.1 All patients should be assessed prior to anaesthesia or anaesthesia-led sedation. This could be conducted face to face in a clinic or virtually (any interaction that does not take place face to face). The majority of preoperative assessment will be nurse led and delivered (in association with allied health professionals and pharmacy staff) using locally agreed and developed protocols.
- 2.2.4 The time allocation for staffing of the preoperative service with nurses, AAs, operating department practitioners (ODPs), healthcare assistants and pharmacy staff should be based on local data that reflect surgical case mix, acuity of patients and high risk daycase workload.
- 2.2.8 Local protocols should determine the grade, experience and competency based training of non-anaesthetist healthcare professionals undertaking preoperative assessments. In addition, all members of the team including administrative, managerial and clinical staff who interact with the patient preoperatively should have skills in motivational interviewing and preoperative optimisation.
- 2.3.4 Consulting rooms need adequate furniture, such as a desk, chairs, examination couch and equipment such as computers, scales for measuring height and weight, blood pressure, pulse oximetry, peak flow meter and electrocardiography machines.
- 2.3.6 There must be a secure environment to enable access to patients' notes including previous anaesthetic records and medical alerts.

HELPNOTE

This may be departmental specific, but a defined pathway must be clear to all.



5.4.1.2 Preoperative preparation and optimisation of all patients presenting for cardiac or thoracic surgery includes multi-professional pathways.

EVIDENCE REQUIRED

Review of the weekly departmental rota, MDT minutes and action points and/or evidence within job plans that demonstrates adequate time is provided to deliver the preoperative assessment service for patients. Evidence of preoperative assessment and optimisation policies. Evidence of audit of preoperative optimisation practice against written policies e.g. Anaemia. Consultants should agree that they have adequate time within their job plans to support preoperative preparation and that admin and other support is appropriate.

PRIORITY

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CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery

- 2.2.8 Local protocols should determine the grade, experience and competency based training of non-anaesthetist healthcare professionals undertaking preoperative assessments. In addition, all members of the team including administrative, managerial and clinical staff who interact with the patient preoperatively should have skills in motivational interviewing and preoperative optimisation.
- 2.12.29 Preoperative assessment, optimisation and shared decision making in patients with multiple comorbidities, frailty or cognitive impairment require a cross specialty approach involving anaesthetists, surgeons, geriatricians, pharmacists and allied health professionals. Liaison with a clinical pharmacist in the perioperative period will enable optimisation of medicines and improved management of the patients' non-surgical comorbidities during this time. The development of such teams requires time and resources. These should be recognised and provided.
- 2.4.16 Anticipated difficulty with anaesthesia should be brought to the attention of the anaesthetist as early as possible before surgery. This includes planned admission to a critical care unit, the potential need for special skills such as fibre optic intubation, obesity, complex pain problems, a known history of anaesthetic complications or patients with learning disabilities who may require additional resources or theatre time. Local groups such as critical care MDTs or high-risk MDTs could facilitate perioperative planning of patients where high risk is identified.
- 2.6.1 Perioperative time should be allocated for the work the anaesthetist undertakes on the day of procedure for both pre and postoperative care. The time required for pre and postoperative care will vary and should be accounted for in individual job plans.





18.3.22 In recent years there has been a trend towards assessment of elective patients in preadmission clinics, typically one to two weeks before surgery. This allows routine paperwork and investigations to be completed before admission, permits 'same day' admission and reduces the likelihood of delays or cancellation. Anaesthetists should be part of the pre-admission clinical pathway, including implementing interventions to promote enhanced recovery and this activity should be reflected in job plans.





5.4.1.3 Preoperative assessment includes a formal cardiac risk assessment and discussion of treatment options. Multidisciplinary discussion is routine for high-risk patients.

EVIDENCE REQUIRED

Evidence of local guidelines on referral pathways, clinical pathway for pre-assessment.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance

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- 18.3.22 In recent years there has been a trend towards assessment of elective patients in preadmission clinics, typically one to two weeks before surgery. This allows routine paperwork and investigations to be completed before admission, permits 'same day' admission and reduces the likelihood of delays or cancellation. Anaesthetists should be part of the pre-admission clinical pathway, including implementing interventions to promote enhanced recovery and this activity should be reflected in job plans
- **18.5.4** Anaesthetists should be part of the multidisciplinary team engaged in development and implementation of enhanced recovery programmes in cardiac surgery.





19.2.7 Thoracic surgery units should develop an enhanced recovery after surgery programme.



5.4.1.4 There is access to respiratory function testing for cardiac and thoracic patients.

EVIDENCE REQUIRED

There is a pulmonary function laboratory and a copy of the service level agreement.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance

- **18.2.23** Access to measurements of respiratory function should be available for patients undergoing cardiac surgery, including a facility for cardiopulmonary exercise testing.
- 19.2.31 Access to measurements of respiratory function should be available for patients undergoing thoracic surgery, including a facility for cardiopulmonary exercise testing and access to echocardiography.





5.4.1.5 All postoperative cardiac and thoracic patients are managed in a facility that provides an appropriate level of care.

EVIDENCE REQUIRED

This must be specified in standard operating procedures and patient pathways.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance

- **18.1.8** Appropriate local arrangements should be made for the care of postoperative surgical patients being managed outside the main cardiothoracic intensive care unit (ICU), for example postoperative recovery areas and wards.
- 18.2.19 In some centres, selected cardiac surgical patients are managed in facilities other than designated ICUs following surgery. These are variously referred to as the high dependency unit (HDU), cardiac recovery or cardiac fast-track unit. These areas aim to minimise the period of mechanical ventilation and improve outcomes. The equipment, monitoring and staffing requirements for such a facility are no less than the requirements of patients cared for in Level 3 ICU. Agreed clinical criteria for the appropriate case mix should be in place. Suitably experienced anaesthetic and surgical staff should be immediately available. Arrangements should be in place for escalation to a Level 3 ICU facility as required.
- **18.2.27** For cardiac patients, dedicated echocardiography equipment, including transoesophageal echo should be immediately available in the operating suite and postoperative care areas. Those who deliver intraoperative echocardiography services should be trained to the level of competence defined by specialist bodies.
- 19.2.25 After major thoracic surgery, patients should be transferred to an appropriately sized, equipped and staffed post-anaesthetic recovery area. Planned or emergency access to ICU or HDU should be available.
- 19.2.26 Non-invasive ventilation facilities should be available in the immediate postoperative period, for example bilevel positive airway pressure (BiPAP), continuous positive airway pressure (CPAP) and high-flow nasal oxygen therapy (HFNO). HFNO should be available in theatres for induction and support of anaesthesia as required.



5.4.1.6 There are agreed clear guidelines for the early postoperative management of patients undergoing cardiac surgery. These guidelines should have particular reference to criteria for weaning of sedation and extubation.

EVIDENCE REQUIRED

Copy of the protocol or standard operating procedure and admissions policies. Postoperative management guideline with criteria for suitability for extubation. Nursing protocols in units where lower risk patients are managed independently by senior nursing staff.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance

GPAS REFERENCES

18.2.19 In some centres, selected cardiac surgical patients are managed in facilities other than designated ICUs following surgery. These are variously referred to as the high dependency unit (HDU), cardiac recovery or cardiac fast track unit. These areas aim to minimise the period of mechanical ventilation and improve outcomes. The equipment, monitoring and staffing requirements for such a facility are no less than the requirements of patients cared for in Level 3 ICU. Agreed clinical criteria for the appropriate case mix should be in place. Suitably experienced anaesthetic and surgical staff should be immediately available. Arrangements should be in place for escalation to a Level 3 ICU facility as required.



5.4.1.8 Clinical management protocols are in place for the routine management of cardiothoracic patients.

EVIDENCE REQUIRED

Copy of protocols, patient pathways and standard operating procedures (see help note for examples). Documentation of handover.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance

GPAS REFERENCES

- 18.2.21 Immediate access to expert haematology advice, haematology laboratory services and blood products and factor replacements should be available.
- **18.2.26** Pain relief protocols should be clearly defined for cardiac surgery patients.
- 18.5.2 There should be a joint forum for discussion of matters relevant to both surgeons and anaesthetists, for example protocol development and critical incidents.
- **18.5.3** Clinical protocols should be developed from national guidelines and reviewed on a regular basis. This may include, for example, guidance for coagulation management, venous thromoboembolism treatment, and treatment for anaemia and patient blood management.
- 18.5.6 All handovers should contain representatives for the multidisciplinary teams from both theatre and the receiving area and should be documented and structured to ensure continuity of care.
- 19.2.29 Thoracic patients should be supported by a specialist pain service. Pain relief protocols should be clearly defined for thoracic surgery patients.

HELPNOTE

There are very few national standards for cardiothoracic anaesthesia as there is little consensus on clinical management. Therefore, agreed local guidelines should be in place and include;

- 1. Postoperative pathway and multidisciplinary responsibility
- 2. Anticoagulation and bleeding management protocol





- Haemodynamic management protocol (to include fluids, vasoactive drugs and monitoring
- 4. Infection control and antibiotic prophylaxis policy
- 5. Intraoperative echocardiography service protocol
- 6. Intraoperative and bypass monitoring protocol
- 7. Handover to postop team including paperwork

Much of postoperative management will come under the GPICS document. The above come under the umbrella of perioperative care (where theatre care has an important continuity with ICU care).





5.4.1.9 There is availability of other specialist services such as endocrine, gastroenterology, neurology, renal medicine, vascular surgery, plastic surgery for consultation on complex patients.

EVIDENCE REQUIRED

Department list on hospital intranet. Copy of service level agreement where appropriate.

PRIORITY

1

CQC KLoEs

Safe, effective

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery

- 18.2.21 Immediate access to expert haematology advice, haematology laboratory services and blood products and factor replacements should be available.
- **18.2.22** There should be immediate access to expert radiology advice, x-ray facilities and computed axial tomography services for patients undergoing cardiac surgery.
- 18.5.5 Hospitals should have systems in place to facilitate multidisciplinary meetings for discussion of high-risk and complex cardiac procedures to allow for adequate advance planning of service provision..
- 19.2.32 There should be immediate access to expert radiology advice, x-ray facilities and computed axial tomography services for patients undergoing thoracic surgery.
- 19.5.5 Hospitals should have systems in place to facilitate multidisciplinary meetings for thoracic services.



5.4.2.1 There is continuous availability of appropriately trained consultants or autonomously practicing anaesthetists 24/7 for cardiothoracic theatre and cardiothoracic ICU.

EVIDENCE REQUIRED

This must be visible from the rota, CPD and training records.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Impact on staff; Workforce management and support

- 18.1.6 An appropriately trained consultant or autonomously practising cardiac anaesthetist should be wholly and exclusively available at all times, through a formal on-call rota. The out of hours duties of the on-call consultant or autonomously practising cardiac theatre anaesthetist should cover only cardiac emergencies, as they can arise and escalate very rapidly, particularly in tertiary referral units. On-call cardiac intensive care consultants or autonomously practising anaesthetists should be trained in and provide support and cover for critical care emergencies such as out of hours diagnostic transoesophageal echocardiography.
- **18.1.7** Trained anaesthetic assistance, theatre staff and appropriate facilities should be immediately available for emergency resternotomy and cardiopulmonary bypass. A suitably trained resident anaesthetist should be immediately available for theatre emergencies and to assist the on-call consultant or autonomously practising cardiac anaesthetist in theatre out of hours.
- **18.1.11** At centres where 24/7 primary percutaneous coronary interventions are performed, and in designated heart attack centres that include out of hospital cardiac arrest patients, there should be provision for immediate availability of a resident anaesthetist, skilled assistance and appropriate equipment and facilities.
- 18.4.5 Consultant or autonomously practising anaesthetists intending to undertake anaesthesia for cardiac surgery should have received training to a higher level in cardiac anaesthesia for a minimum of one year in recognised training centres. Those providing critical care for cardiothoracic surgical patients should have received training as described by the Faculty of Intensive Care Medicine (see Cardiothoracic Critical Care, Guidelines for the Provision of Intensive Care Services). This should include training in transoesophageal echocardiography.





- 19.1.6 An appropriately trained consultant or autonomously practising anaesthetist should be available at all times, through a formal thoracic or cardiothoracic anaesthetic on-call rota, particularly if lung transplantation is performed.
- 19.1.7 Wherever thoracic anaesthesia and surgery are performed there should be a resident anaesthetist available at all times.

HELPNOTE

An appropriately trained consultant or autonomously practising anaesthetist should be available at all times, through a formal thoracic or cardiothoracic anaesthetic on-call rota.



5.4.2.2 Adequate numbers of suitably trained staff are immediately available for managing perioperative and catheter laboratory emergencies, such as resternotomy, in and out of hospital arrest, primary percutaneous intervention (PPCI).

EVIDENCE REQUIRED

This must be visible from the rota and described in standard operating procedures. There must be dedicated trained assistants available.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led, responsive

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Workforce management and support

- 18.1.6 An appropriately trained consultant or autonomously practising cardiac anaesthetist should be wholly and exclusively available at all times, through a formal on-call rota. The out of hours duties of the on-call consultant or autonomously practising cardiac theatre anaesthetist should cover only cardiac emergencies, as they can arise and escalate very rapidly, particularly in tertiary referral units. On-call cardiac intensive care consultants or autonomously practising anaesthetists should be trained in and provide support and cover for critical care emergencies such as out of hours diagnostic transoesophageal echocardiography.
- 18.1.7 Trained anaesthetic assistance, theatre staff and appropriate facilities should be immediately available for emergency resternotomy and cardiopulmonary bypass. A suitably trained resident anaesthetist should be immediately available for theatre emergencies and to assist the on-call consultant or autonomously practising cardiac anaesthetist in theatre out of hours. Trained staff and appropriate facilities should be immediately available for emergency resternotomy and bypass. A suitably trained resident anaesthetist should be immediately available for emergencies.
- **18.1.11** At centres where 24/7 primary percutaneous coronary interventions are performed, and in designated heart attack centres, which include out of hospital cardiac arrest patients, there should be provision for immediate availability of a resident anaesthetist, skilled assistance and appropriate equipment and facilities.
- 18.4.1 Cardiac and thoracic anaesthesia is a 'key unit of training' for intermediate level training in anaesthesia. Trainee anaesthetists should be of appropriate seniority to be able to benefit from this area of training.





HELPNOTE

Each unit should produce a rota to cover emergencies. Rotas usually apply to a unit, not to one theatre and are always prepared in advance.

Note 5: On terminology, unless otherwise specified, immediately means within five minutes.



5.4.2.3 Transoesophageal and transthoracic echo is immediately available in theatres, cath labs and ICU, with staff who are trained and competent to use it and supported by IT systems to enable storage and retrieval of studies for audit and training.

EVIDENCE REQUIRED

Presence of equipment; policy for reporting studies; evidence of training courses, CPD, exams or accreditation. Presence of reports and saved studies on hospital PACS systems. Minutes of training and quality assurance meetings.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led, responsive

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Workforce management and support

GPAS REFERENCES

- **18.2.11** Transoesophageal echocardiography should be immediately available.
- **18.2.27** For cardiac patients, dedicated echocardiography equipment, including transoesophageal echo should be immediately available in the operating suite and postoperative care areas. Those who deliver intraoperative echocardiography services should be trained to the level of competence defined by specialist bodies.
- **18.4.4** Trainees planning to embark in a career in cardiac anaesthesia should be encouraged to undertake training and accreditation in transoesophageal echocardiography.

HELPNOTE

Reports and archived studies need to be available to those providing postoperative care. Note 5: On terminology, unless otherwise specified, immediately means within five minutes.



5.4.2.4 Specialised monitoring and equipment appropriate to the scale of surgery is available with staff who are trained and competent to use it. This is adequately maintained.

EVIDENCE REQUIRED

Presence of equipment e.g. IABP, ECMO, NIRS, CO monitoring, depth of anaesthesia, copy of service level agreements and staff rotas. Also, flexible fibreoptic bronchoscopic equipment for thoracic double lumen tube placement/checking. Monitoring equipment/portable ventilator for patient transfers e.g. to and from catheter laboratories.

PRIORITY

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CQC KLoEs

Safe, effective

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery

GPAS REFERENCES

Cardiac

- 18.2.1 The same level of equipment should be available for cardiac surgery as is available in general theatres as specified in chapter 3. Additional specialty-specific monitoring is required and is detailed below.
- **18.2.2** The standard of monitoring in the operating theatre should allow the conduct of safe anaesthesia for surgery as detailed by the Association of Anaesthetists standards of monitoring.
- 18.2.3 During the transfer of the patient at the end of surgery to the postoperative care unit there should be access to electrocardiogram (ECG), invasive blood pressure monitoring, pulse oximetry, disconnection alarm for any mechanical ventilation system, fractional inspired oxygen concentration, and end-tidal carbon dioxide.
- **18.2.4** Access to cardiac output monitoring should be available for high-risk cardiac cases perioperatively.
- **18.2.8** A cell salvage service should be available for cases where massive blood loss is anticipated and for patients who decline blood products. Staff who operate this equipment should receive training and use it frequently to maintain their skills.





- **18.2.9** A dedicated ultrasound machine should be available in each cardiac theatre for the placement of vascular catheters.
- **18.2.10** Cardiac anaesthesia and surgery are carried out under intensive physiological patient monitoring. Equipment used routinely for monitoring during cardiac surgery should be available. This includes invasive pressure monitoring for both systemic arterial, central venous and pulmonary artery pressures.
- **18.2.11** Transoesophageal echocardiography should be immediately available.
- 18.2.12 Patients with complex conditions may require additional monitoring, such as pulmonary arterial pressure monitoring and measurement of cardiac output. Facilities for on-bypass haemofiltration should be available, which may include cytokine haemadsorption filters in patients with higher inflammatory burden.
- 18.2.14 Monitoring during cardiopulmonary bypass should conform to the standards recommended by the joint working group of the Society of Clinical Perfusion Scientists of Great Britain and Ireland, ACTACC, the Society for Cardiothoracic Surgery in Great Britain and Ireland and the European Guidelines on Cardiopulmonary Bypass in Adult Cardiac Surgery.
- 18.2.16 Equipment for temporary pacing should be available, including external pacing pads and emergency defibrillation, must be available.

Thoracic

- 19.2.1 The same level of equipment should be available for thoracic surgery as is available in general theatres as specified in chapter 3. Additional specialty specific monitoring is required and is detailed below.
- 19.2.8 Flexible fibreoptic bronchoscopy should be immediately available for all patients where lung isolation is used.
- 19.2.9 A range of equipment to facilitate lung isolation should be available. This may include left and right double-lumen tracheal tubes, bronchial blockers, dual lumen tracheostomy tubes, and airway exchange catheters.
- 19.2.15 Dedicated equipment for jet ventilation should be available for interventional airway procedures. Appropriate fittings should be checked and available for connection to rigid bronchoscopes. It should include an ultrasound machine for nerve blocks
- 19.3.14 The use of extracorporeal membrane oxygenation (ECMO) for the management of adults with severe respiratory failure is currently is centralised in a number of cardiothoracic centres. Anaesthetists often institute ECMO and support retrieval of patients from non-specialist hospitals. Anaesthetists providing ECMO should be suitably trained.

HELPNOTE

IABP= Intra-Aortic Balloon Pump. ECMO= Extra Corporial Membrane Oxygenation. NIRS= Near InfraRed Spectroscopy. CO = CARDIAC OUTPUT monitoring.



5.4.2.5 Monitoring of cardiopulmonary bypass conforms to national standards and there is a dedicated trained perfusionist for every cardiac surgery case.

EVIDENCE REQUIRED

Presence of equipment, slave monitors and a copy of service level agreements. Sample perfusion records.

PRIORITY

1

CQC KLoEs

Effective, responsive, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Workforce management and support

- **18.1.7** Trained anaesthetic assistance, theatre staff and appropriate facilities should be immediately available for emergency resternotomy and cardiopulmonary bypass. A suitably trained resident anaesthetist should be immediately available for theatre emergencies and to assist the on-call consultant or autonomously practising cardiac anaesthetist in theatre out of hours.
- 18.2.13 Monitoring during cardiopulmonary bypass should conform to the standards recommended by the joint working group of the Society of Clinical Perfusion Scientists of Great Britain and Ireland, ACTACC, the Society for Cardiothoracic Surgery in Great Britain and Ireland, and the European Guidelines on Cardiopulmonary Bypass in Adult Cardiac Surgery.
- 18.3.21 Where revision of rhythm management devices is considered to pose a high risk of requiring emergency surgical intervention, cardiopulmonary bypass equipment and a plan for surgery should be available at the start of the procedure.



5.4.2.6 There are dedicated operating theatres large enough for cardiac and thoracic surgery.

EVIDENCE REQUIRED

Copy of floor plans and the presence of facility

PRIORITY

2

CQC KLoEs

Effective

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery

GPAS REFERENCES

- **18.2.17** A designated cardiac step-down unit and cardiac ward should be considered.
- **18.2.18** Cardiac surgery should be performed in dedicated operating rooms. It is unlikely that an operating room will be kept available at all times for emergencies. Local arrangements for urgent and emergency cases should be in place.
- 19.2.22 Designated thoracic, or cardiothoracic wards should be considered.
- 19.2.23 Thoracic surgery should ideally be performed in dedicated operating rooms. It is unlikely that an operating room will be kept available at all times for emergencies. Local arrangements for urgent and emergency situations should be in place.

HELPNOTE

Some centres have theatres dedicated to one or the other. No requirement to have theatres dedicated to one specific type of surgery. In most centres where cardiothoracic surgery exists, usually BOTH theatres can do either type of surgery.





5.4.2.7 Postoperative care facilities are appropriate to the level of care required, staffed by appropriately trained medical and nursing staff. There should be clear pathways for the transfer of patients between postoperative care facilities as determined by clinical need.

EVIDENCE REQUIRED

Copy of standard operating procedures, admission and discharge policies, floor plans and building notes.

PRIORITY

1

CQC KLoEs

Safe, effective

HIW Domains

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GPAS REFERENCES

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- 18.2.19 In some centres, selected cardiac surgical patients are managed in facilities other than designated ICUs following surgery. These are variously referred to as the high dependency unit (HDU), cardiac recovery or cardiac fast track unit. These areas aim to minimise the period of mechanical ventilation. The equipment, monitoring and staffing requirements for such a facility are no less than the requirements of patients cared for in level 3 ICU. Agreed clinical criteria for the appropriate case mix should be in place. Suitably experienced anaesthetic and surgical staff should be immediately available. Arrangements should be in place for escalation to a level 3 ICU facility as required.
- **18.2.27** For cardiac patients, dedicated echocardiography equipment, including transoesophageal echo should be immediately available in the operating suite and postoperative care areas. Those who deliver intraoperative echocardiography services should be trained to the level of competence defined by specialist bodies.
- 19.2.25 After major thoracic surgery, patients should be transferred to an appropriately sized, equipped and staffed post-anaesthetic recovery area. Planned or emergency access to intensive or high-dependency care should be available.

HELPNOTE

There are nursing standards for care of these type of patients. Level 3: one to one. Level 2: two to one. Medical staff also have national guidelines for Intensive care cover. Staffing should be flexible to cope with the needs of emergency patients.



5.4.2.8 Postoperative care facilities are appropriately equipped.

EVIDENCE REQUIRED

Review of facilities on visits and trust risk register.

PRIORITY

1

CQC KLoEs

Safe, effective

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery

- **18.1.8** Appropriate local arrangements should be made for the care of postoperative surgical patients being managed outside the main cardiacintensive care unit (ICU), for example postoperative recovery areas and wards.
- 18.2.21 In some centres, selected cardiac surgical patients are managed in facilities other than designated ICUs following surgery. These are variously referred to as the high dependency unit (HDU), cardiac recovery or cardiac fast track unit. These areas aim to minimise the period of mechanical ventilation. The equipment, monitoring and staffing requirements for such a facility are no less than the requirements of patients cared for in level 3 ICU. Agreed clinical criteria for the appropriate case mix should be in place. Suitably experienced anaesthetic and surgical staff should be immediately available. Arrangements should be in place for escalation to a level 3 ICU facility as required.
- **18.2.34** For cardiac patients, dedicated echocardiography equipment, including transoesophageal echo should be immediately available in the operating suite and postoperative care areas. Those who deliver intraoperative echocardiography services should be trained to the level of competence defined by specialist bodies.
- 19.2.25 After major thoracic surgery, patients should be transferred to an appropriately sized, equipped and staffed post-anaesthetic recovery area. Planned or emergency access to intensive or high-dependency care should be available.
- 19.2.26 Non-invasive ventilation facilities should be available in the immediate postoperative period, for example bilevel positive airway pressure (BiPAP), continuous positive airway pressure (CPAP) and high-flow nasal oxygen therapy (HFNO). HFNO should be available in theatres for induction and support of anaesthesia as required.







5.4.2.9 Postoperative care facilities have dedicated beds for cardiothoracic patients.

EVIDENCE REQUIRED

Review of case cancellations with reasoning. Feedback from consultants/nursing staff and review of trust critical care escalation policy.

PRIORITY

1

CQC KLoEs

Safe, effective

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery

- **18.1.8** Appropriate local arrangements should be made for the care of postoperative surgical patients being managed outside the main cardiac intensive care unit (ICU), for example postoperative recovery areas and wards.
- 19.2.25 After major thoracic surgery, patients should be transferred to an appropriately sized, equipped and staffed post-anaesthetic recovery area. Planned or emergency access to intensive or high-dependency care should be available.





5.4.2.10 Postoperative care facilities are co-located with theatres or critical care.

EVIDENCE REQUIRED

Floor plan or inspection by the visiting reviewers.

PRIORITY

1

CQC KLoEs

Safe, effective

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance

- **18.2.17** A designated cardiac step-down unit and cardiac ward should be considered.
- **18.2.18** Cardiac surgery should ideally be performed in dedicated operating rooms. It is unlikely that an operating room will be kept available at all times for emergencies. Local arrangements for urgent and emergency cases should be in place.
- **19.2.22** Designated thoracic, or cardiothoracic wards should be considered.
- 19.2.23 Thoracic surgery should ideally be performed in dedicated operating rooms. It is unlikely that an operating room will be kept available at all times for emergencies. Local arrangements for urgent and emergency situations should be in place.



5.4.2.11 Point of care testing for blood gases, haematology, electrolytes and coagulation is available for cardiac surgery.

EVIDENCE REQUIRED

Presence of 'point of care' testing, equipment or facility. Copy of standard operating procedures.

PRIORITY

1

CQC KLoEs

Safe, effective, responsive

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance; Workforce management and support

GPAS REFERENCES

18.2.20 Where possible, point of care or near-patient testing should be used for blood gas analysis, measurement of electrolytes and blood sugar, haemoglobin, lactate and coagulation. This testing should include platelet function, thromboelastography or rotational thromboelastometry and early acute kidney injury urinary markers. The need for direct oral anticoagulant analysis at point of care should be carefully considered.



5.4.2.12 There is a designated physiotherapy service for cardiothoracic patients.

EVIDENCE REQUIRED

This must be visible from rotas, standard operating procedures and service level agreements.

PRIORITY

1

CQC KLoEs

Effective

HIW Domains

Quality of patient experience; Safe and effective care

HIS Domains

Impact on patients, service users, carers and families; Safe, effective and person-centred care delivery

GPAS REFERENCES

- 18.2.24 Physiotherapy services should be available during the preoperative preparation and postoperative care of patients undergoing cardiac surgery.
- 19.2.30 Physiotherapy services should be available during the preoperative preparation and postoperative care of patients undergoing thoracic surgery. to discuss anaesthetic risk/consent in pre-assessment clinic rather than on the day of admission/surgery.

HELPNOTE

Physiotherapy is essential in the immediate postoperative period and also in rehab.



5.4.2.13 There is an accredited perfusion service for cardiac surgery that complies with national guidelines.

EVIDENCE REQUIRED

Copy of perfusion department documentation; society of perfusionists accreditation report.

PRIORITY

1

CQC KLoEs

Safe, effective

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance

- 18.1.9 Perfusion services should be provided by suitably trained and accredited clinical perfusion scientists and should comply with Department of Health guidelines. A suitable number of trained perfusionists should be always available according to the recommendations for standards of monitoring during cardiopulmonary bypass.
- 18.2.14 Monitoring during cardiopulmonary bypass should conform to the standards recommended by the joint working group of the Society of Clinical Perfusion Scientists of Great Britain and Ireland, ACTACC, the Society for Cardiothoracic Surgery in Great Britain and Ireland, and the European Guidelines on Cardiopulmonary Bypass in Adult Cardiac Surgery. .





5.4.2.14 Anaesthetists have evidence of case mix and CPD in cardiac anaesthesia, thoracic anaesthesia and echocardiography as appropriate, to maintain relevant skills, including the management of the difficult airway, as required for appraisal and revalidation in cardiothoracic anaesthesia.

EVIDENCE REQUIRED

Evidenced by rotas and job plans. Blinded scope of work data from consultant appraisal documents.

PRIORITY

1

CQC KLoEs

Safe, effective, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Impact on staff; Workforce management and support

- 18.4.7 All staff should have access to adequate time, funding and facilities to undertake and update training that is relevant to their clinical practice, including annual mandatory training such as basic life support.
- **18.4.9** Departments should consider providing all newly appointed consultants or autonomously practising anaesthetists, particularly those with limited experience, with a mentor to facilitate their development in cardiac anaesthesia.
- 19.1.4 Consultant or autonomously practicing anaesthetists in thoracic units should be responsible for the provision of service, teaching, protocol development, management, research and quality improvement. Adequate time should be allocated in job plans for these activities.
- 19.4.8 Departments should consider providing all newly appointed consultants or autonomously practising anaesthetists, particularly those with limited experience, with a mentor to facilitate their development in thoracic anaesthesia.



5.4.2.15 There is adequate time in job plans for pre and postoperative visiting of complex cardiac and thoracic patients.

EVIDENCE REQUIRED

Copy of job plans. Feedback from consultants on adequate patient availability for this.

PRIORITY

1

CQC KLoEs

Effective, caring

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance; Workforce management and support

- 18.5.9 There should be sufficient numbers of clinical programmed activities in clinicians' job plans to provide cover for all elective cardiac operating lists and to provide adequate emergency cover. Compensatory rest periods for out of hours on-call work should be appropriately included in rotas and job planning. This may affect the subsequent day's scheduled theatre activity and staffing provisions should be made for this.
- 18.3.22 In recent years there has been a trend towards assessment of elective patients in pre-admission clinics, typically one to two weeks before surgery. This allows routine paperwork and investigations to be completed before admission, permits 'same day' admission and reduces the likelihood of delays or cancellation. Anaesthetists should be part of the preadmission clinical pathway, including implementing interventions to promote enhanced recovery. This activity should be reflected in job plans.



5.4.2.16 There is a resident anaesthetist for postoperative and catheter laboratory emergencies. This individual should be separate from the resident covering the cardiothoracic intensive care unit (ICU).

EVIDENCE REQUIRED

This is visible on the rota, grades and cover.

PRIORITY

1

CQC KLoEs

Responsive, safe

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery

- An appropriately trained consultant or autonomously practising cardiac anaesthetist should be wholly and exclusively available at all times, through a formal on-call rota. The out of hours duties of the on-call consultant or autonomously practising cardiac theatre anaesthetist should cover only cardiac emergencies, as they can arise and escalate very rapidly, particularly in tertiary referral units. On-call cardiac intensive care consultants or autonomously practising anaesthetists should be trained in and provide support and cover for critical care emergencies such as out of hours diagnostic transoesophageal echocardiography.
- **18.1.10** Interventional cardiology services increasingly require anaesthesia, critical care and nursing resources depending on procedural complexity and patient morbidity. General anaesthesia may be needed to facilitate complex interventions or required in an emergency for invasive cardiological procedures. Both eventualities require that appropriate anaesthetic staffing, skilled assistance, equipment and monitoring should be available.
- 19.1.6 An appropriately trained consultant or autonomously practising anaesthetist should be available at all times, through a formal thoracic or cardiothoracic anaesthetic on-call rota, particularly if lung transplantation is performed.





5.4.3.1 There are dedicated cardiac, thoracic, or cardiothoracic wards.

EVIDENCE REQUIRED

Presence of facility.

PRIORITY

2

CQC KLoEs

Safe, effective, caring

HIW Domains

Safe and effective care

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance

GPAS REFERENCES

18.2.17 A designated cardiac step-down unit and cardiac ward should be considered.

19.2.22 Designated thoracic, or cardiothoracic wards should be considered.



5.4.3.2 The acute pain service has specific techniques available for thoracic patients, including epidural and other advanced techniques.

EVIDENCE REQUIRED

Copy of standard operating procedures, protocols and job descriptions. Acute pain team rota.

PRIORITY

1

CQC KLoEs

Effective, caring, responsive

HIW Domains

Safe and effective care

HIS Domains

Impact on patients, service users, carers and families; Workforce management and support

GPAS REFERENCES

19.2.29 Thoracic surgery should be supported by a specialist pain service. Pain relief protocols should be clearly defined for thoracic surgery patients.



5.4.3.3 There is specific patient information for patients undergoing cardiac/thoracic surgery which includes information regarding anaesthesia and perioperative care.

EVIDENCE REQUIRED

Patient information should be provided in a wide range of formats and styles relevant to the patient population, e.g. large print, Braille, easy-reading, QR codes, videos or other media. Information should be available in the wards, in outpatient clinics, and enclosed with patient letters.

PRIORITY

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CQC KLoEs

Caring, effective

HIW Domains

Safe and effective care

HIS Domains

Impact on patients, service users, carers and families; Safe, effective and person-centred care delivery

- **18.9.1** Booklets providing information for patients about their stay in hospital should be available for all patients. This will include the patient information booklets published by the British Heart Foundation on cardiac disease, prevention, treatment and lifestyle modification. Sources of information about the anaestheticshould also be available such as those from the RCoA.
- 18.9.2 Information about cardiac rehabilitation generally, and information regarding the availability of such courses locally, should also be available.
- 18.9.3 Information on specific individual risks of invasive monitoring, (e.g. risk of injury due to arterial and central venous lines) should be available to patients.
- 18.9.4 All cardiothoracic units should provide patient information about preoperative smoking cessation, including how to access local services to support patients wishing to quit before their operation.
- 19.9.1 Booklets providing information for patients about their stay in hospital should be available for all patients. This will include the patient information booklets published by the British Thoracic Society on lung disease and the Roy Castle Lung Cancer Foundation for information about lung cancer and its surgical treatment. Sources of information about the anaesthetic should also be available.



5.4.4.1 There is a designated lead consultant for cardiac and/or thoracic anaesthesia with adequate sessional time.

EVIDENCE REQUIRED

Copy of job plan and meeting minutes. The department admin office and the governance department must be aware who these are.

PRIORITY

1

CQC KLoEs

Well-led, effective

HIW Domains

Management and leadership

HIS Domains

Impact on staff; Workforce management and support; Quality improvement-focused leadership

GPAS REFERENCES

Cardiac

18.1.5 Each unit should have a designated clinical lead who is responsible for cardiac anaesthesia services. This should be recognised in their job plan and they should be involved in multidisciplinary service planning and governance within the unit.

Thoracic

19.1.5 Each unit should have a designated clinical lead (see glossary) anaesthetist for thoracic anaesthetic services. This should be recognised in their job plan and they should be involved in multidisciplinary service planning and governance within the unit.



5.4.4.2 There is regular multidisciplinary clinical audit of cardiac and thoracic services with surgeons, cardiologists and nurses.

EVIDENCE REQUIRED

Copy of meeting minutes and the department rota.

PRIORITY

1

CQC KLoEs

Responsive, well-led

HIW Domains

Management and leadership

HIS Domains

Impact on staff; Workforce management and support; Quality improvement-focused leadership

- **18.1.3** The complexity of some procedures may necessitate anaesthetic involvement in multidisciplinary team meetings and this activity should be reflected in job plans.
- 18.3.5 Specialist anaesthetists should be involved in the discussion of referrals and planning when conducted in the setting of a multidisciplinary team. This involvement should be recognised in job plans. Anaesthesia for complex adult congenital heart procedures should be undertaken by suitably trained adult congenital anaesthetists. Appropriate support from ACHD cardiologists and other cardiologists with suitable expertise in ACHD is necessary.
- **18.3.14** A multidisciplinary team should agree and document plans for the peripartum management of patients with known congenital or acquired cardiac disease in advance. Staff and facilities should be available for monitored or operative delivery, and for managing acute decompensation.
- 18.5.5 Hospitals should have systems in place to facilitate multidisciplinary meetings for discussion of high-risk and complex cardiac procedures to allow for adequate planning of service provision.
- **18.7.2** Regular clinical audit of the work of cardiac anaesthesia services is essential. This should also include submission of data to national audits, such as the ACTACC national audit project. Information technology support should be available for such activities.
- **18.7.3** Centres should consider contributing to multidisciplinary national benchmarking audits such as the National Institute for Cardiovascular Outcomes Research, Getting It Right First Time and the National Cardiac Benchmarking Collaborative.





- 19.1.3 The complexity of some procedures neccessitates anaesthetic involvement in multidisciplinary team meetings and this activity should be reflected in job plans.
- 19.3.10 Where thoracic surgery is scheduled to occur immediately after Caesarean section, there should be early involvement of obstetricians, specialist obstetric anaesthetists, neonatal paediatricians and midwifery services.
- 19.5.5 Hospitals should have systems in place to facilitate multidisciplinary meetings for thoracic services.
- 19.7.2 Regular clinical audit of the work of thoracic anaesthesia services is essential. This might also include submission of data to national audits, such as the ACTACC national audit project, which includes thoracic anaesthesia topics. Information technology support should be available for such activities.



5.4.4.3 Anaesthetists take part in regular, minuted, specific cardiac and thoracic M&M meetings with surgeons, cardiologists, nurses, perfusionists and other relevant staff.

EVIDENCE REQUIRED

Copy of meeting minutes and the department rota.

PRIORITY

1

CQC KLoEs

Responsive, well-led

HIW Domains

Safe & effective care, Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance; Quality improvement-focused leadership

GPAS REFERENCES

- 18.5.2 There should be a forum for discussion of matters relevant to both surgeons and anaesthetists, for example protocol development and critical incidents.
- **18.7.4** All cardiac units should have regular multidisciplinary morbidity and mortality meetings. These should have a list of patients to discuss in advance, an attendance register, and minutes with learning points. Consultant or autonomously practising anaesthetists should attend these meetings and, where possible, inclusion in job plans should be considered. Trainees should be encouraged to attend during their attachments.
- 19.5.2 There should be a forum for discussion of matters relevant to both surgeons and anaesthetists, for example protocol development and critical incidents.
- 19.7.3 All thoracic units should have regular morbidity and mortality meetings. These meetings should be provided with a list of patients to discuss in advance, an attendance register, and minutes with learning points. Consultants or autonomously practising anaesthetists should attend these meetings and they should be included in job plans. Trainees should be encouraged to attend during their attachments.

HELPNOTE

These should be minuted with specific outcome recommendations. The details of the patients to be discussed should be circulated in advance.



5.4.4.4 Anaesthetists take part in appropriate cardiac, thoracic and cardiology multidisciplinary team meetings with cardiac surgeons, cardiologists and nurses as recommend by NCEPOD.

EVIDENCE REQUIRED

Copy of meeting minutes, departmental rota and job plans.

PRIORITY

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CQC KLoEs

Safe, effective, responsive, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance; Workforce management and support

- **18.1.3** The complexity of some procedures may necessitate anaesthetic involvement in multidisciplinary team meetings and this activity should be reflected in job plans.
- 18.5.5 Hospitals should have systems in place to facilitate multidisciplinary meetings for discussion of high-risk and complex cardiac procedures to allow for adequate advance planning of service provision.
- 19.1.3 The complexity of some procedures neccessitates anaesthetic involvement in multidisciplinary team meetings and this activity should be reflected in job plans.
- 19.5.5 Hospitals should have systems in place to facilitate multidisciplinary meetings for thoracic services.



5.4.4.5 Units take part in national benchmarking audit and disseminate this information to staff.

EVIDENCE REQUIRED

Copies of benchmarking exercises involved and records of local dissemination meetings and correspondence.

PRIORITY

3

CQC KLoEs

Safe, responsive, effective, well-led

HIW Domains

Safe and effective care; Management and leadership

HIS Domains

Safe, effective and person-centred care delivery; Policies, planning and governance; Workforce management and support

GPAS REFERENCES

18.7.3 Centres should consider contributing to multidisciplinary national benchmarking audits such as the National Institute for Cardiovascular Outcomes Research, Getting It Right First Time and the National Cardiac Benchmarking Collaborative.).

HELPNOTE

The National Cardiac Benchmarking Collaborative (NCBC) would be the key audit here as well as the National Patient Blood Management Comparative audits.







Royal College of Anaesthetists

Royal College of Anaesthetists, Churchill House, 35 Red Lion Square, London WC1R 4SG 020 7092 1500 | www.rcoa.ac.uk/acsa | acsa@rcoa.ac.uk

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