Section 06

Cardiac arrest data

Context

6.1

Time of arrest to nearest hour (24-hour clock) (Time Span)

_____

6.2

Perioperative phase (Pick One)
[_] Pre-induction
[_] At induction
[_] Transfer to theatre/procedure location
[_] After induction but before surgery/procedure started
[_] During surgery/procedure under GA
[_] During surgery/procedure under LA/RA
[_] Conversion of LA/RA to GA
[_] Emergence/extubation
[_] Post-operative transfer to recovery
[_] Post-operative in recovery room (or other immediate location)
[_] Post-operative after discharge from recovery room or equivalent (or in critical care area if recovery not used)
[_] N/A: special inclusion criteria

6.3

Location at time of cardiac arrest (Pick One)
[_] Anaesthetic room
[_] Theatre: main theatre suite
[_] Theatre: day surgery unit
[_] Theatre: obstetrics
[_] Theatre: other
[_] Labour ward
[_] Neuroradiology
[_] Cardiac catheter lab
[_] Pacing room
[_] Interventional radiology
[_] MRI
[_] CT
[_] Endoscopy
[_] ECT
[_] Ward
[_] Recovery
[_] Emergency Department
[_] Critical care area
[_] Other

If other:

_____

_____

_____

_____

6.4
Anaesthetic presence

At time of cardiac arrest Consultant

_____

At any time during resuscitation Consultant

_____

At time of cardiac arrest SAS doctor

_____

At any time during resuscitation SAS doctor

_____

At time of cardiac arrest Post CCT or CESR doctor

_____

At any time during resuscitation Post CCT or CESR doctor

_____

At time of cardiac arrest ST5+ or equivalent

_____

At any time during resuscitation ST5+ or equivalent

_____

At time of cardiac arrest ST3-4 or equivalent

_____

At any time during resuscitation ST3-4 or equivalent

_____

At time of cardiac arrest CT2 or equivalent

_____

At any time during resuscitation CT2 or equivalent

_____

At time of cardiac arrest CT1 or equivalent after Initial Assessment of Competence

_____

At any time during resuscitation CT1 or equivalent after Initial Assessment of Competence

_____

At time of cardiac arrest CT1 or equivalent before completion of Initial Assessment of Competence

_____

At any time during resuscitation CT1 or equivalent before completion of Initial Assessment of Competence

_____

At time of cardiac arrest Anaesthesia Associate

_____

At any time during resuscitation Anaesthesia Associate

_____

At time of cardiac arrest Nurse specialist

_____

At any time during resuscitation Nurse specialist

_____

At time of cardiac arrest Other

_____

At any time during resuscitation Other

_____

6.5

Was the cardiac arrest witnessed ? (Pick One)
[_] Yes
[_] No

6.6

Was a 2222 call activated? (Pick One)
[_] Yes
[_] No

If yes by whom? (Pick One)
[_] Anaesthetist or anaesthesia associate
[_] Anaesthetic assistant / ODP
[_] Nurse
[_] Midwife

[_] Surgeon
[_] Healthcare assistant / runner
[_] Other

6.7

What forms of monitoring were already in place when need for chest compressions and/or defibrillation was first recognised? (Pick One
[_] Same monitoring as previously detailed for case
[_] Other
[_] None

Pulse oximetry
(True / False)

Non-invasive blood pressure
(True / False)

ECG
(True / False)

End tidal CO2 / Capnography
(True / False)

End tidal anaesthetic agents
(True / False)

FiO2
(True / False)

Airway pressure
(True / False)

Intra-arterial blood pressure
(True / False)

Central venous pressure
(True / False)

Cardiac output
(True / False)

Transthoracic echocardiography
(True / False)

Transoesophageal echocardiography
(True / False)

Continuous temperature measurement
(True / False)

Intermittent temperature measurement
(True / False)

Non-quantitative neuromuscular monitoring
(True / False)

Quantitative neuromuscular monitoring
(True / False)

Raw or processed EEG
(True / False)

Near-infrared Spectroscopy
(True / False)

Arterial blood gas
(True / False)

Point of care coagulation
(True / False)

Antecedents

6.8

Was there a change in patient position immediately before cardiac arrest recognised? (Pick One)
[_] Yes
[_] No

What was the change?

_____

_____

_____

_____

6.9

Was there a change in location/transfer immediately before cardiac arrest recognised? (Pick One)
[_] Yes
[_] No

What was the change?

_____

_____

_____

_____

Pre-arrest data

6.10
Observations most proximate to starting chest compressions and/or defibrillation (Time 0) and at previous timepoints as available.

We appreciate that data may not be available at each timepoint. Please only enter available values.

Please Fill in: **Section PreArreset**
Multiple copies may be included.

6.11
How were these data collected
Recall
(True / False)

Anaesthetic chart - manual
(True / False)

Anaesthetic chart - electronic
(True / False)

Anaesthetic machine
(True / False)

Not applicable - unavailable
(True / False)

6.12
Were any of the following already in place?
Vasopressors (continuous infusion)
(True / False)

Inotropes (continuous infusion)
(True / False)

Mechanical ventilation
(True / False)

Non-invasive ventilation (including HFNO)
(True / False)

VV ECMO
(True / False)

None
(True / False)

6.13

At the time of cardiac arrest, was the patient supported by any form of Ventricular Assist Device (VAD)? (Pick One)
[_] Yes
[_] No

6.14

At the time of cardiac arrest, did the patient have a pre-existing internal or external cardioverter defibrillator? (Pick One)
[_] Yes
[_] No

6.15
At the time of cardiac arrest, were any of the following in place?
Patient docked to surgical robot
(True / False)

Patient head in pins
(True / False)

Specialist table/mattress (e.g. Montreal)
(True / False)

In scan/procedure room remote from anaesthetist (e.g. in CT scanner, MRI)
(True / False)

Other
(True / False)

None
(True / False)

Was there a significant delay in undocking patient? (Pick One)
[_] Yes
[_] No
[_] Unknown

Pins removed
(True / False)

Clamp released
(True / False)

Head attachment removed and held (by hand)
(True / False)

Head placed on head-ring/theatre table
(True / False)

Other
(True / False)

Cardiac Arrest Process

6.16

Which initial patient condition best describes the event? (Pick One)
[_] Pulseless
[_] Pulse but poor perfusion
[_] Systolic blood pressure <50 mmHg - non-invasive
[_] Systolic blood pressure <50 mmHg - invasive
[_] Unknown

6.17
What triggered the start of cardiopulmonary resuscitation (chest compressions and/or defibrillation)?
Impalpable pulse
(True / False)

Unrecordable blood pressure
(True / False)

Severe hypotension
(True / False)

Severe bradycardia
(True / False)

Monitored cardiac rhythm
(True / False)

Reduction in ETCO2
(True / False)

Other
(True / False)

Please specify

_____

_____

_____

_____

6.18

Did the patient receive chest compressions (includes open cardiac massage)? (Pick One)
[_] Yes - ≥5
[_] Yes - <5
[_] No

If patient prone at the time of cardiac arrest, were compressions started in the prone position? (Pick One)
[_] Yes
[_] No
[_] Unknown
[_] N/A - not prone at time of cardiac arrest

6.19

What was the initial cardiac arrest rhythm? (Pick One)
[_] Ventricular fibrillation (VF)
[_] Pulseless ventricular tachycardia (pVT)
[_] Pulseless electrical activity (PEA)
[_] Asystole
[_] Bradycardia
[_] AED used - shockable
[_] AED used - non-shockable
[_] Unknown

6.20

Did the patient receive a precordial thump? (Pick One)
[_] Yes - successful at achieving ROSC at next rhythm check
[_] Yes - unsuccessful
[_] No
[_] Unknown

6.21

Was an automated external defibrillator (AED) or manual defibrillator in AED/Shock Advisory mode applied? (Pick One)
[_] Yes
[_] No
[_] Unknown

6.22

Did the patient receive defibrillation for ventricular fibrillation (VF) or pulseless ventricular tachycardia? (Pick One)
[_] Yes
[_] No
[_] Unknown

What was the total number of defibrillatory shocks delivered? (Pick One)
[_] 1
[_] 2
[_] 3
[_] 4
[_] >4
[_] Unknown

6.23

Was Extracorporeal Cardiopulmonary Resuscitation (ECPR) with Venoarterial extracorporeal membrane oxygenation (VA-ECMO) attempted during cardiac arrest? (Pick One)
[_] Yes
[_] No
[_] Unknown

6.24

Was a mechanical chest compression device used? (Pick One)
[_] Yes
[_] No
[_] Unknown

6.25
Was adrenaline given by intravenous or intraosseous route during the resuscitation event?
Yes - initial 1mg bolus (or 10mcg/kg paediatric dose)
(True / False)

Yes - initial titrated IV aliquots (e.g. 10-50mcg intermittent boluses)
(True / False)

Yes - infusion
(True / False)

No
(True / False)

Unknown
(True / False)

Time between cardiac arrest and first dose

_____

No of doses

_____

Total dose

_____

At time of cardiac arrest Unit (Pick One)
[_] mcg
[_] mg
[_] ml

6.26
Other drugs
Please Fill in: **Section CAPDrugs**
Multiple copies may be included.

6.27
Airway interventions
Airway interventions In Situ (Pick One)
[_] None
[_] Oxygen mask or nasal specs
[_] Face mask (+/- Guedel)
[_] Supraglottic airway (1st generation)
[_] Supraglottic airway (2nd generation)
[_] Tracheal tube (oral or nasal)
[_] Tracheostomy
[_] Emergency front of neck airway
[_] High flow nasal O2/THRIVE
[_] Rigid bronchoscope
[_] Other

Please specify

_____

_____

_____

_____

None
(True / False)

Oxygen mask or nasal specs
(True / False)

Face mask (+/- Guedel)
(True / False)

Supraglottic airway (1st generation)
(True / False)

Supraglottic airway (2nd generation)
(True / False)

Tracheal tube (oral or nasal)
(True / False)

Tracheostomy
(True / False)

Emergency front of neck airway
(True / False)

High flow nasal O2/THRIVE
(True / False)

Rigid bronchoscope
(True / False)

Other
(True / False)

Please specify

_____

_____

_____

_____

6.28
Method(s) of confirmation used to ensure correct placement of tracheal tube or tracheostomy tube
Waveform capnography
(True / False)

Capnometry (numeric ETCO2)
(True / False)

Exhaled CO2 colorimetric monitor
(True / False)

Oesophageal detection device
(True / False)

Ultrasound
(True / False)

Revisualisation with direct laryngoscopy
(True / False)

Flexible optical bronchoscope
(True / False)

None of the above
(True / False)

Unknown
(True / False)

N/A - no tracheal tube used
(True / False)

6.29
Were any of the following mechanisms or processes in place during the resuscitation to measure the quality of CPR being delivered?
Waveform capnography (ETCO2)
(True / False)

Arterial waveform
(True / False)

Diastolic pressure
(True / False)

CPR mechanics device (e.g. accelerometer, force transducer, Triaxial Field Induction device)
(True / False)

CPR quality coach
(True / False)

Metronome
(True / False)

Other
(True / False)

Unknown
(True / False)

None
(True / False)

Please specify

_____

6.30
Were any of the following additional resuscitative procedures undertaken?
Cardiac Pacing
(True / False)

Cardio-pulmonary bypass
(True / False)

Chest drain (any)
(True / False)

DC Cardioversion (unplanned)
(True / False)

Embolectomy
(True / False)

Front of neck airway
(True / False)

Hyperkalaemia management
(True / False)

Intra-arterial balloon pump (IABP)
(True / False)

Needle decompression of chest
(True / False)

Precordial thump
(True / False)

Resternotomy
(True / False)

Thoracostomy
(True / False)

Thoracotomy
(True / False)

Thrombolysis
(True / False)

Transfusion of blood products
(True / False)

Other
(True / False)

None
(True / False)

Please specify

6.31

Was echocardiography used during resuscitation (Pick One)
[_] Yes - transthoracic
[_] Yes - transoesophageal
[_] No
[_] Unknown

ALS/APLS cardiac arrest protocol
(True / False)

Association of Anaesthetists (AoA) Quick Reference Handbook
(True / False)

Resuscitation Council UK (RCUK) anaphylaxis guideline
(True / False)

Association of Anaesthetists anaphylaxis guideline
(True / False)

RCUK cardiac arrest during neurosurgery
(True / False)

Association of Anaesthetists local anaesthetic toxicity
(True / False)

Association of Anaesthetists malignant hyperthermia guideline
(True / False)

Cardiac advanced life support (CALS)
(True / False)

Other
(True / False)

Unknown
(True / False)

No
(True / False)

Smartphone
(True / False)

Laminate
(True / False)

In treatment pack
(True / False)

Printed copy in theatre
(True / False)

Computer/tablet
(True / False)

Memory
(True / False)

Other
(True / False)

6.32

What was the most likely cause of cardiac arrest

_____

_____

_____

_____

6.33

What was the time interval from onset of presenting clinical feature to the start of chest compressions and/or defibrillation? (Pick One)
[_] 0-1 mins
[_] 2-3 mins
[_] 4-5 mins
[_] 6-10 mins
[_] 11-15 mins
[_] 16-30 mins
[_] 31-60 mins
[_] 61-120 mins
[_] >120 mins

6.34

Was there a delay in the treatment of cardiac arrest? (Pick One)
[_] Yes
[_] No

Slow to diagnose
(True / False)

Appropriate assistance not available
(True / False)

Drugs not available
(True / False)

Equipment not available
(True / False)

No or limited PPE available
(True / False)

Requirement to change patient position to start CPR
(True / False)

Other
(True / False)

Please specify

_____

6.35

Was additional anaesthetic assistance summoned? (Pick One)
[_] Yes
[_] No

Shout for help
(True / False)

Emergency bell
(True / False)

Phone 2222
(True / False)

Phone for assistance - on site staff (not 2222)
(True / False)

Send a runner
(True / False)

Bleep for assistance- on site
(True / False)

Phone for assistance - off site staff
(True / False)

Unknown
(True / False)

Other
(True / False)

Please specify

_____

_____

_____

_____

How long until assistance arrived (Pick One)
[_] 0-1 mins
[_] 2-3 mins
[_] 4-5 mins
[_] 6-10 mins
[_] 11-15 mins
[_] 16-30 mins
[_] 31-60 mins
[_] 61-120 mins
[_] >120 mins

6.36

Did theatre team contribute effectively to the management of the incident? (Pick One)
[_] Yes, all
[_] Yes, some
[_] No
[_] Unknown

6.37

Were there multiple cardiac arrests? (Pick One)
[_] Yes
[_] No

Please describe

_____

_____

_____

_____

6.38

Were there any issues related to Personal Protective Equipment (PPE)? (Pick One)
[_] Yes
[_] No
[_] Unknown

No or limited PPE available
(True / False)

Delay in starting anaesthetic care
(True / False)

Delay in starting CPR
(True / False)

Resuscitation hindered by PPE after starting CPR: technical aspects (e.g., unable to perform effective chest compressions)
(True / False)

Resuscitation hindered by PPE after starting CPR: non-technical aspects (e.g., unable to communicate effectively with team members)
(True / False)

Other/additional comments
(True / False)

Please specify

_____

_____

_____

_____

Post-resuscitation data

6.39

Was coronary angiography undertaken? (Pick One)
[_] Yes - with ongoing CPR
[_] Yes - urgent (within 2 hours)

[_] Yes - delayed (during same hospital admission)
[_] No

6.40

Was coronary reperfusion attempted? (Pick One)
[_] Yes - PCI
[_] Yes - Thrombolysis
[_] Yes - Coronary artery bypass grafts
[_] No

Please specify timing (Pick One)
[_] Intra-arrest
[_] Within 24 hours of ROSC
[_] >24 hours but pre-discharge
[_] Unknown

6.41

Was treatment for massive pulmonary embolism attempted? (Pick One)
[_] Yes - embolectomy
[_] Yes - thrombolysis
[_] No

Please specify timing (Pick One)
[_] Intra-arrest
[_] Within 24 hours of ROSC
[_] >24 hours but pre-discharge
[_] Unknown

6.42

Where was the patient first transferred after resuscitation? (Pick One)
[_] Operating Theatre
[_] Recovery Room
[_] ICU/HDU
[_] Ward
[_] Other

Please specify

_____

6.43

Time between cardiac arrest and patient transfer to HDU/ICU?

_____

(True / False)

6.44

Unplanned post-operative admission to high-dependency area? (Pick One)
[_] Yes
[_] No

If Yes (Pick One)
[_] Coronary Care Unit
[_] HDU
[_] ICU
[_] Other

Please specify

_____

_____

_____

_____

6.45
What was the additional unplanned length of stay in days?
Level 2 days (Pick One)
[_] 0
[_] <1
[_] 1-3
[_] 3-5
[_] 5-7
[_] 7-10
[_] 10-14
[_] 14-21
[_] 21-28
[_] >28
[_] N/A

Is the level 2 stay ongoing? (Pick One)
[_] Yes
[_] No

Level 3 days (Pick One)
[_] 0
[_] <1
[_] 1-3
[_] 3-5
[_] 5-7
[_] 7-10
[_] 10-14
[_] 14-21
[_] 21-28
[_] >28
[_] N/A

Is the level 3 stay ongoing? (Pick One)
[_] Yes
[_] No

Hospital stay (Pick One)
[_] 0
[_] <1
[_] 1-3
[_] 3-5
[_] 5-7
[_] 7-10
[_] 10-14
[_] 14-21
[_] 21-28
[_] >28
[_] N/A

Is the hospital stay ongoing? (Pick One)
[_] Yes
[_] No

6.46

Was transfer to a different hospital required for critical care? (Pick One)
[_] Yes
[_] No

If Yes: (Pick One)
[_] No HDU/ICU in hospital where event occurred
[_] No HDU/ICU capacity
[_] Higher level of care required than could be provided in current hospital

6.47

Was the patient transferred to a specialist hospital (e.g. providing 24/7 percutaneous coronary intervention, targeted temperature management, post-arrest haemodynamic support) for further treatment? (Pick One)

[_] Yes
[_] No

6.48

Was the procedure significantly modified, abandoned or postponed as a result of the cardiac arrest? (Pick One)
[_] Yes, abandoned before procedure started
[_] Yes, abandoned after procedure started
[_] Yes, procedure modified
[_] Yes, additional unplanned return to theatre
[_] No

6.49

Was the theatre list or anaesthetic on-call shift terminated early? (Pick One)
[_] Yes
[_] No
[_] Unknown

6.50

Did any members of the team stand down from clinical activity immediately after the event? (Pick One)
[_] Yes
[_] No

Took a short break (e.g. <1 hour)
(True / False)

Took a sustained break* (e.g. >1 hour)
(True / False)

Theatre list terminated early
(True / False)

Anaesthetic on-call shift terminated early
(True / False)

Other
(True / False)

Please specify

_____

6.51

Was there direct communication with the patient's relatives / NOK following the event? (Pick One)
[_] Yes
[_] No
[_] Unknown

Consultant anaesthetist
(True / False)

Trainee anaesthetist
(True / False)

SAS anaesthetist
(True / False)

Consultant surgeon
(True / False)

Trainee surgeon
(True / False)

SAS surgeon
(True / False)

Consultant from ICU
(True / False)

ICU Trainee
(True / False)

SAS from ICU
(True / False)

Anaesthesia associate
(True / False)

Nursing staff
(True / False)

Physician
(True / False)

Other
(True / False)

Unknown
(True / False)