South East Coast Ambulance Service NHS
NHS Foundation Trust

Clinical Outcome Indicator Policy and Procedure

Contents

1 Scope

1.1. The scope of this policy and procedure is to define the processes undertaken within South East Coast Ambulance Service NHS Foundation Trust (SECAmb / 'the Trust') to collect Clinical Outcome Indicator (COI) data for the purposes of quality assurance and improvement.

1.2. This document will detail the activity required to ensure high quality data that ensures patients cared for by SECAmb when presenting with ST-Elevation Myocardial Infarction (STEMI), stroke, sepsis, or cardiac arrest receive effective clinical care.

1.3. This document focusses only on COIs as set by NHS England and the standards as defined by NHS England and the National Ambulance Service Clinical Quality Group (NASCQG).

1.4. This document defines how COI data should be used, including for local continuous improvement, reporting to Trust Board and reporting to NHS England.

1.5. This process describes business as usual processes. Guidance on the management of extraordinary incidents can be found in local business continuity plans.

1.6. The procedure is intended to allow:

1.6.1. A consistent approach to data collection and processing.

1.6.2. Quality assurance of data collection against the NHS England and NASCQG COI Guidance (including when this guidance is amended).

1.6.3. To provide governance to the Trust for retrospective amendments to COI data.

2 Responsibilities

2.1. The **Executive Medical Director** is the Executive lead responsible for the collection of COI data within the Trust.

2.2. The **Head of Clinical Audit and Quality Improvement** is responsible for ensuring that this document and data collection practices meet any statutory, mandatory and/or external assessment requirements.

2.3. The **Quality Improvement Lead** (QIL) is responsible for managing the clinical audit team and their compliance with this procedure to produce timely and high-quality clinical outcome indicator data. They provide clinical oversight to the COI process.

2.4. The **Clinical Audit Supervisor** is responsible for management of Clinical Audit Coordinators, ensuring the timely auditing of incidents, quality assurance of the data collection process, data analysis and submission through the relevant online portal.

2.5. **Clinical Audit Coordinators, the Cardiac Arrest Analyst** and any other individual collecting COI data are responsible for timely data collection in line with the standards set out in this procedure. They will act up to the limits of their knowledge and seek clinical support where required.

2.6. The **Business Information Team** are responsible for publishing COI data for the Trust board and in Power BI dashboards.

3 Policy

3.1. The standards for data collection will be set by NASCQG and NHS England.

3.2. Data will be collected in line with the local definitions set out in Appendix A of this document. These local definitions detail how national standards are applied to SECAmb's patient clinical record systems.

3.3. Those who collect COI data must be adequately familiarised with this policy and procedure, the local definitions set out in Appendix A of this document, the principles of clinical audit and the software used for data collection.

3.4. Those who collect COI data must participate in local levelling at least quarterly. In this session, a group of auditors should discuss their interpretation of the care recorded for a patient encounter to determine whether it meets the standards set out in Appendix A.

3.5. Levelling decisions are approved by the Head of Clinical Audit and Quality Improvement and documented by the Clinical Audit Administrator. Local procedural changes that arise from levelling are approved by the Clinical Audit and Quality Sub-Group (CAQSG).

3.6. Appendix A will be updated as required following local levelling and as new guidance is released by NASCQG and NHS England. These changes should be presented to the CAQSG as tracked changes for approval. The updated policy and procedure (including the updated Appendix A) should then be submitted to the Corporate Governance team for 'fast-track' approval as per the Development and Management of Trust Policies and Procedures Policy.

3.7. Clinical audit falls under the banner of direct patient care when carried out by a registered clinician or by a non-registrant under the supervision of a

registered clinician. This document describes the supervision framework put in place by SECAmb. Data processing takes place under the following legal bases:

3.7.1. GDPR Article 6(1)(e) – 'the performance of a task carried out in the public interest'.

3.7.2. GDPR Article 9(2)(h) – 'medical diagnosis, the provision of health or social care or treatment or the management of health or social care systems'.

3.7.3. Special category 9(2)(i) – 'public interest in the area of public health'.

3.8. Clinical audit data is recorded on the Trust's information asset register. The Head of Clinical Audit and Quality Improvement is the Information Asset Owner for Clinical Audit Data and the Quality Improvement Lead acts as the Information Asset Administrator.

3.9. Automation of Clinical Outcome Indicator data collection:

3.9.1. Should read Electronic Patient Care Record (ePCR) and validation of data from scanned records facilitates automation of a proportion of COI data collection. This includes decisions to include or exclude records from samples and compliance decisions (for example, if oxygen administration is recorded on the ePCR, that element of a care bundle is automatically determined to be compliant).

3.9.2. All automation should be tested before implementation and should produce a margin of error of no greater than 1%. CAQSG will be made aware of any system design features that produce a margin of error and will consider the impact of this against resource requirements for audit and business needs. This conversation will be recorded in the group's minutes.

3.9.3. Automated data collection should be subject to monthly quality assurance checks as per section 7 of this document.

4 Health Records Procedure

4.1. The Health Records team should sort and scan paper patient records as per local procedures and as soon as infection prevention and control precautions allow. At times patient records will be isolated for a defined period after delivery to prevent cross infection, e.g. during an epidemic or pandemic. Such decisions will be reached by agreement between the Head of Clinical Audit and Quality Improvement and Head of Infection Prevention

and Control and reviewed monthly. The decision will be communicated to the Health Records Manager.

4.2. Paper records will be available for validation in the Doc-Works validation app the next working day after scanning. Primary validation (validation of incident details, patient identifiers and CAD matching) should happen within three working days of records being made available in the system.

4.3. The Health Records Manager will balance records scanned, versus records present in the Doc-Works system to ensure all records are present.

4.4. Secondary validation (validation of data fields required for calculation of audit inclusion and compliance) should happen within five working days of records being made available in the system.

4.5. Health Records staff performing primary validation should 'skip' (correct erroneous OCR data and PFI validate without CAD matching) a record for escalation to the Health Records Manager or Senior Health Records Administrator if they are unable to carry out primary validation and CAD matching.

4.6. The Health Records Manager and Senior Health Records Administrator should process all 'skipped' records at least weekly (except where CAD data is not immediately available due to CAD downtime etc.).

4.7. Health Records staff that are carrying out secondary validation and cannot confidently read or interpret a value recorded in a field should leave this field blank to enable further review by a member of the Clinical Audit team when data is displayed in the Clinical Audit system.

4.8. If there is a delay or any barriers to primary or secondary validation of paper records, the Health Records manager should report this to the Clinical Audit Supervisor in the first instance. If there is likely to be a delay to the provision of data to CAQSG, this should be escalated to the Quality Improvement Lead by the Clinical Audit Supervisor. If there is likely to be a delay of provision of data to NHS England or the Trust Board, this should be escalated to the Head of Clinical Audit and Quality Improvement by the Quality Improvement Lead.

5 STEMI, Stroke and Sepsis Procedure

5.1. At least three working days per week, Clinical Audit Coordinators or other nominated individuals will check for new incidents for audit. In the case of STEMI, stroke, and sepsis this will be done by searching for 'auto-non-compliant' incidents in the Doc-Works system.

5.2. ‘Auto-non-compliant’ incidents will be reviewed by the Clinical Audit Coordinator to determine whether they should be included in the sample in line with the definitions set out in Appendix A. If they are to be included in the sample, any non-compliant elements of care should be reviewed in line with the definitions set out in Appendix A.

5.3. ‘Auto-compliant’, FAST negative stroke records should be reviewed to identify incidents where symptoms have completely resolved, in line with the definitions set out in Appendix A. These incidents should be removed from the sample.

5.4. Auto-compliant FAST positive stroke records, auto-compliant sepsis incidents and auto-compliant STEMI incidents should not be reviewed by Clinical Audit Coordinators.

5.5. Where the auditor is unable to make a decision during their analysis due to clinical complexity or some other compounding factor, this record should be marked for clinical review. Their query should be recorded in the notes field.

5.6. After auditing is complete for a full month, auditors should ensure that all primary and secondary validation has been completed by the Health Records team, hospital transfers have been removed and that duplicate incidents have been removed. They should inform the Quality Improvement Lead that incidents are ready for clinical review and non-compliance checks.

6 Cardiac Arrest Procedure

6.1. At least three working days per week, the Cardiac Arrest Analyst or other nominated individual should check for new incidents for audit.

6.2. Incidents should be reviewed for inclusion as per the definitions set out in Appendix A.

6.3. Where resuscitation was attempted, full data collection should take place in line with the definitions in Appendix A:

6.3.1. Patient details should be checked against the NHS Spine and any errors corrected in the registry.

6.3.2. Where NHS spine shows a date of death within 48 hours of arrival at the receiving hospital, ‘Survival to Discharge’ should be marked as ‘no’ and the date of death from NHS Spine copied to the ‘Date of Death’ field.

6.3.3. Where resuscitation is stopped by EMS, ‘Death Confirmed by EMS’ should be marked as ‘yes’, ‘Survival to Discharge’ should be marked as ‘no’ and Date of Death should be populated with the date of recognition of

life extinct (being mindful of incidents that cross midnight and using the date that recognition of life extinct was applied).

6.3.4. Where resuscitation is continued until handover at the receiving hospital or where there is a return of spontaneous circulation on handover at the receiving hospital (and there is no date of death within 48 hours of arrival on NHS Spine) the hospital should be contacted using a secure email platform to determine either date of death or survival to discharge.

6.3.5. Where the receiving hospital does not respond in a timely manner, the patient's GP practice should be contacted by secure email or telephone to determine the outcome following their cardiac arrest. Where a patient is still in hospital at the time of review, the survival to discharge field should by populated as 'Unknown – Still in Hospital'. The hospital should be contacted again after 30 days to determine the outcome.

6.4. Where resuscitation was not attempted because some condition listed in the 'Include in Total' section of Appendix A applies; 'Resus Attempt' should be marked as 'no'. The relevant value from 'Include in Total' should be selected.

6.5. Where inclusion, compliance or registry data cannot be determined from the main patient record and Helicopter Emergency Medical Services (HEMS) or a Critical Care Paramedic (CCP) are on scene, CCP Base should be consulted or HEMS contacted to provide the required information. The Codestat system can also be consulted.

6.6. Where ROSC was achieved, incidents should be considered for inclusion in the POST-ROSC care bundle, in line with the guidance in Appendix A.

6.7. Where the Cardiac Arrest Analyst is unable to make a decision during their analysis due to clinical complexity or some other compounding factor, this record should be marked for clinical review. Their query should be recorded in the notes field.

6.8. After auditing is completed for a full month, the Cardiac Arrest Analyst should ensure that all primary and secondary validation has been completed by the Health Records team, hospital transfers have been removed and that duplicate incidents have been removed. They should inform the Quality Improvement Lead that incidents are ready for clinical review and non-compliance checks.

6.9. Each month, the Cardiac Arrest Analyst will report the proportion of cases where resuscitation was attempted or continued by SECAmb that have a return of spontaneous circulation on arrival at hospital and the proportion that survive to be discharged from hospital. This will be reported for all

patients in the sample and separately for the Utstein comparator group (presumed cardiac aetiology, bystander witnessed and in VF/VT on arrival).

7 Quality Assurance and Clinical Review

7.1. The Clinical Audit Supervisor should quality assure 10% of compliant, auto-compliant and removed incidents each month. This should be a random sample of incidents from across the three groups. This quality assurance will involve checking for inclusion and comparing compliance data with the information recorded in the patient record to ensure it is carried out in line with the approved guidance in Appendix A.

7.2. Where quality assurance checks find an anomaly that is amended, the Quality Assurance field should be set to ‘QA Changed’. Where no changes are required, the field should be set to ‘No Change’.

7.3. Anomalies in the data should be handled as follows:

7.3.1. If there has been a one-off human misinterpretation of the data presented this should be corrected, details of the change noted on the record and feedback provided to the auditor.

7.3.2. Where a standard has been repeatedly misinterpreted (i.e. 3 or more times) by an individual throughout that month or where the same misinterpretation recurs on a monthly basis, all records where a misinterpretation might apply should be reviewed and amendments made as required. Noting the changes made on each record and providing feedback to the auditor.

7.3.3. Where automation has calculated compliance incorrectly, all applicable records should be reviewed and changes made as required. A DIF-1 (Datix Incident Form) should be completed, and feedback should be provided to the software supplier so that a fix can be implemented. All records where a misinterpretation might apply should be reviewed and amendments made as required.

7.4. The Quality Improvement Lead or another suitably qualified registered clinician should review all incidents marked for ‘Clinical Review’ each month. They should answer the question posed by the auditor in the notes field. If changes to the record are required, they should be made and the ‘Quality Assurance’ field set to ‘CR (Clinical Review) Changed’ (or ‘Completed’ for cardiac arrest). If no changes are required, the field should be set to ‘No Change’.

7.5. If a clinical review is carried out after quality assurance, the quality assurance field should be marked as ‘No Change’ or ‘CR Changed’ as appropriate. A non-registrant must not make changes to an audited record after clinical review or non-compliance check.

7.6. The Quality Improvement Lead or another suitably qualified registered clinician should review all non-compliant incidents each month. This allows incidents where compliance might have been missed due to clinical complexity to be identified. If changes to the record are required, they should be made and the ‘Quality Assurance’ field set to ‘CR Changed’. If no changes are required, the field should be set to ‘No Change’.

7.7. The Quality Improvement Lead will inform auditors and the Clinical Audit Supervisor when clinical reviews and non-compliance checks are complete. Auditors should review all incidents after clinical review and non-compliance checks have taken place to identify opportunities for learning.

7.8. Before calculation of compliance figures each month, the Clinical Audit Supervisor should carry out a final quality check to confirm that:

7.8.1. all primary and secondary validation has been completed by Health Records

7.8.2. all required incidents have been audited.

7.8.3. all duplicate incidents have been removed

7.8.4. all hospital transfers have been removed

7.8.5. all clinical reviews are complete

7.8.6. all non-compliance checks are complete

8 Data Approval Process

8.1. Clinical Outcome Indicator data must be approved by CAQSG before wider dissemination.

8.2. CAQSG are responsible for challenging data quality and integrity. They will plan remedial actions where performance does not meet the level required.

8.3. After approval by CAQSG, the Clinical Audit Supervisor is responsible for adding COI data to the Integrated Performance Report (IPR). The Head of Clinical Audit and Quality Improvement is responsible for providing the narrative to accompany this data.

8.4. The Clinical Supervisor will ensure that COI data is submitted to NHS England through the relevant portal within the timeframes published by NHS England on the Ambulance Quality Indicator section of their website.

9 Learning from COI Data

9.1. Operational Team Leaders (OTLs) are responsible for the delivery of COI feedback to their team members. Ahead of one to ones and appraisals, OTLs should review the COI Power BI dashboard to identify incidents where their team member was senior clinician on scene.

9.2. Recognition should be offered by OTLs where incidents are compliant and best practice reinforced. Any necessary developmental feedback should be offered where incidents are non-compliant. This may include the provision of information on the clinical standards set out in JRCALC guidelines or guidance on the best way to document exceptions to clinical standards as detailed in Appendix A.

9.3. Guidance on how best to document clinical care or exceptions can be sought from the Clinical Audit team.

9.4. Where performance issues are sustained after feedback, this should be manged using SECAmb's Capability Policy and Procedure, in conjunction with the Practice Development team.

10 Data Revisions

10.1. At set periods throughout the year, NHS England will allow submission of data revisions. This allows ambulance trusts to update their performance figures where records have been received late (i.e. received after figures have been approved by CAQSG) or where data collection and analysis problems have occurred.

10.2. The Clinical Audit team will audit all new records as they appear in the Doc-Works system.

10.3. When a revision window is opened by NHS England, the Cardiac Arrest Analyst or other nominated individual will attempt to update all unknown survival to discharge data where a patient was still in hospital when the performance was first calculated (see survival to discharge definitions in Appendix A).

10.4. A revision window is opened by NHS England twice per year. The Clinical Audit Supervisor will compare performance in the data submitted originally with revised data. In STEMI, stroke and sepsis, revisions will only be

submitted where there is a difference of more than +/-1% between the old and the new data. Due to the significant difference that small variation in numbers can have to cardiac arrest outcomes, these figures will always be submitted for revision if there is any difference. The final decision whether revisions will published lies with NHS England.

10.5. Updated data for STEMI, stroke, sepsis, and cardiac arrest will be added to local trackers and the Integrated Performance Report (IPR) by the Clinical Audit Supervisor, irrespective of whether NHS England are given or approve revised data. This new data should be presented to CAQSG and the reason for the difference between local and national data should be recorded in the group minutes.

11 Audit and Review

11.1. The Head of Clinical Audit and Quality Improvement will carry out a three-yearly review of this policy & procedure to ensure compliance against the objectives.

11.2. The CAQSG will review the policy & procedure in the event of any incidents or complaints regarding Clinical Outcome Indicators.

11.3. Any issues with the Clinical Outcome Indicator processes will be picked up through the Trust governance processes which, if necessary, can ask for a review or revision of this procedure.

11.4. All procedures have their effectiveness audited by the responsible Management Group at regular intervals, and initially six months after a new policy is approved and disseminated.

11.5. Effectiveness will be reviewed using the tools set out in the Trust's Policy and Procedure for the Development and Management of Trust Policies and Procedures (also known as the Policy on Policies).

11.6. This document will be reviewed in its entirety every three years or sooner if new legislation, codes of practice or national standards are introduced, or if feedback from employees indicates that the procedure is not working effectively.

11.7. All changes made to this procedure will go through the governance route for development and approval as set out in the Policy on Policies.

12 Equality Analysis

12.1. The Trust believes in fairness and equality, and values diversity in its role as both a provider of services and as an employer. The Trust aims to provide accessible services that respect the needs of each individual and exclude no-one. It is committed to comply with the Human Rights Act and to meeting the Equality Act 2010, which identifies the following nine protected characteristics: Age, Disability, Race, Religion and Belief, Gender Reassignment, Sexual Orientation, Sex, Marriage and Civil Partnership and Pregnancy and Maternity.

12.2. Compliance with the Public Sector Equality Duty: If a contractor carries out functions of a public nature then for the duration of the contract, the contractor or supplier would itself be considered a public authority and have the duty to comply with the equalities duties when carrying out those functions.

13 References

13.1. None.

14 Glossary

14.1. None.

Appendix A – Clinical Outcome Indicator Data Definitions

Suspected Sepsis Care Bundle		
Care Bundle Element	**National Ambulance Service Clinical Quality Group Definition**	**Application to SECAmb Clinical Records**
Inclusion in initial population	New onset of suspected sepsis based on review of systems. OR Neutropenic sepsis based on chemotherapy or radiotherapy in past 8 weeks or if crew have determined that it is recent.	Condition code of L06 or A34 OR Condition code of L13.
Exclusion from final sample **Further data collection is not required if any exclusion criteria applies.**	Patients under 16 years of age.	Actual age or estimated age is recorded as being under 16.
	NEWS2 under 7, as determined in first set of observations.	NEWS2 under 7 is documented in first set of observations OR Where NEWS2 is blank in initial observations, score is calculated as under 7 by auditor from initial observations OR Where NEWS2 is blank in initial observations and initial observations are incomplete, score is calculated as under 7 in initial observations.
	Pregnancy known/suspected	Sepsis in pregnant patients appears less than monthly in data collected. To balance manual data collection versus impact on data, auditors are not expected to check for the presence of pregnancy.
	Cardiac arrest at any point whilst with the crew	Indication of cardiac arrest.

	Hospital transfer	Source of the call is any hospital in the SECAmb region that has an emergency department.
	Not suspected sepsis	There is no mention on the clinical record that sepsis is suspected. E.g. It appears that an incorrect condition code has been used or the condition code has been scanned incorrectly and the record does not relate to a patient with suspected sepsis.
Respiratory rate assessed	Yes	Respirations documented in observations OR Respirations documented in free text.
Level of consciousness	Yes	GCS documented in observations OR ACVPU documented in observations OR ACVPU documented in primary survey OR 'All normal' recorded in primary survey OR 'Normal' recorded in disability section of primary survey OR ACVPU or GCS documented in free text.
Blood pressure	Yes	Systolic and diastolic recorded in observations OR Systolic and diastolic recorded in free text

		OR Presence of radial or central pulse recorded in free text OR 'All normal' recorded in primary survey OR 'Normal' recorded in circulation section of primary survey. **Equipment failure is not an exception, as this is a service level failure.**
	Patient refusal	Documentation that observations are refused OR Documentation of refusal of assessment OR Documentation of refusal of blood pressure OR Patient absconded from scene OR Patient asked clinicians to leave scene.
	Unable to assess	Documentation that BP is unrecordable/unreadable (not due to an equipment failure) OR Documentation that patient cannot/will not sit still for recording

		(including patient agitation, resistance etc.).
Oxygen saturations	Yes	Oxygen saturations recorded in observations OR Oxygen saturations recorded in free text. **Equipment failure is not an exception, as this is a service level failure.**
	Patient refusal	Documentation that observations are refused OR Documentation of refusal of measurement of oxygen saturations OR Documentation of refusal of assessment OR Patient absconded from scene OR Patient asked clinicians to leave scene.
	Unable to assess	Documentation that oxygen saturation is unrecordable/unreadable (not due to equipment failure) OR Documentation of capillary refill of more than 2 seconds.
Oxygen administration	Yes	Oxygen administration documented in drugs section OR

		Oxygen administration documented in free text OR Any oxygen saturation reading showing as 'on oxygen' OR Administration of entonox, salbutamol or atrovent (ipratropium bromide) documented in drugs section or free text. **Unconsciousness is not an exception.** **Equipment failure is not an exception, as this is a service level failure.**
	Patient refusal	Documentation of refusal of oxygen OR Documentation of refusal of treatment OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf.

	Not indicated – oxygen saturations are 94% or above OR 88% and above in the presence of COPD or hypercapnia.	Final recording of oxygen saturation (prior to arrival at the destination) are 94% or above OR The patient's medical history or free text notes state that the patient is diagnosed with COPD (may be listed as emphysema, chronic bronchitis or bronchiectasis) or hypercapnia AND final recording of oxygen saturation (prior to arrival at the destination) is 88% or above.
Fluid administration commenced	Yes	Administration of more than 10ml of sodium chloride (in a single dose) is recorded in the drugs section OR Administration of a fluid bolus or commencing a fluid bolus is documented in free text OR Documentation that the drug has been administered, without a dosage being recorded. **Unconsciousness is not an exception.** **Absence of a paramedic or above is not an exception, as this is a service level failure.** **Equipment failure is not an exception, as this is a service level failure.**
	Not required: systolic blood pressure > 90 or presence of radial/central pulse where blood pressure is unobtainable.	Final recording of systolic blood pressure (prior to arrival at the destination) is 90 or above OR Presence of radial or central pulse recorded in free text

		OR 'All normal' recorded in primary survey OR 'Normal' recorded in circulation section of primary survey.
	Patient refusal	Documentation of refusal of sodium chloride or cannulation OR Documentation of refusal of treatment OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf.
	Unable to cannulate	Inability to gain intravenous (IV) access, cannulate or 'get cannula' documented in free text OR Clinicians document inability to locate a suitable vein to cannulate – e.g. 'patient shut down' or 'bad veins' OR

		Unsuccessful cannulation attempts recorded in cannulation section or free text notes.
	Contraindicated – evidence of significant heart failure or hypervolemia	Heart failure recorded in past medical history or free text notes.
Hospital pre-alert	Yes	Pre-alert recorded in pre-alert field OR Pre-alert/ASHICE/ATMIST/blue call/call to red phone/calling ahead/priority call etc. documented in free text OR Documentation that patient is expected by the receiving hospital, e.g. 'emergency floor contacted', 'GP contacted ward' or 'HCP referred'. **Equipment failure is not an exception, as this is a service level failure.**
	Patient refused conveyance/non-conveyed due to pre-existing care plan.	Patient refused conveyance to hospital OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT/end of life plan/palliative care plan/'under ECHO team' OR Power of attorney declines transport on the patient's behalf.
	Pre-alert attempted, but not accepted by receiving facility.	Receiving facility did not answer phone or phone engaged recorded in PCR OR

		Receiving facility refusal of pre-alert documented on PCR.

STEMI Care Bundle		
Care Bundle Element	**National Ambulance Service Clinical Quality Group Definition**	**Application to SECAmb Clinical Records**
Inclusion in initial population	Pre-hospital clinical impression of STEMI as confirmed by 12-lead ECG undertaken by ambulance staff, where the ECG is presented as evidence or there is documentation on the clinical record confirming STEMI.	Condition code of A02 OR Destination type is pPCI OR Ticagrelor is recorded in drugs section. OR Suspected STEMI field is selected on V3 PCR. **It is recognised that some patients will be diagnosed as suffering a STEMI on arrival at hospital and be included in the Myocardial Ischemia National Audit Programme (MINAP) audit. The Emergency Medical Service (EMS) STEMI care bundle focusses only on patients where EMS confirm STEMI. Patients where EMS did not confirm STEMI should not be included in the care bundle sample.**
Exclusion from final sample **Further data collection is not required if any exclusion criteria applies.**	No evidence supporting STEMI.	ECG image shown does not meet SECAmb STEMI pathway criteria (clinical review decision only) OR ECG interpretation is recorded as normal sinus rhythm OR Impression or ECG interpretation is recorded as non-ST-Elevation MI (NSTEMI)

		OR ECG rhythm is recorded as left bundle branch block OR Free text notes state ‘no ST-elevation’ OR Free text notes state ‘ST depression only’ OR There is no mention on the clinical record that STEMI is suspected. E.g. It appears that an incorrect condition code has been used or the condition code has been scanned incorrectly and the record does not relate to a patient with STEMI.
	Cardiac arrest at any point while with the crew.	Indication of cardiac arrest.
	Hospital transfer.	Source of the call is any hospital in the SECAmb region that has an emergency department.
Aspirin administered	Yes	Aspirin administration recorded in drugs section or free text OR 300mg aspirin taken before EMS arrival OR Patient/carer/other HCP administration documented while in the care of EMS OR NHS Pathways call triage summary shows that aspirin was taken during the call.

		A dose of less than 300mg aspirin will not be accepted as compliant.
	Patient refusal	Documentation of refusal of aspirin OR Documentation of refusal of treatment OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf OR Aspirin refusal recorded in aspirin exception field.
	Contra-indicated as per JRCALC	Valid JRCALC contra-indication (allergy or sensitivity, under 16 years, active gastrointestinal bleeding, haemophilia or other known clotting disorders or severe hepatic failure with jaundice) recorded in free text, patient history or aspirin exception field. **The specific contra-indication must be listed on the patient record. For example, 'Contra-Indicated' may be recorded in the aspirin exception field. However,**

		for the exception to apply, the actual contra-indication (from the list above) must also be recorded on the PCR. OR Reduced level of consciousness and patient unable to swallow OR (Clinical review decision only) JRCALC caution recorded that includes clear clinical rationale for non-administration (asthma, pregnancy, renal failure, moderate hepatic disease without jaundice, gastric or duodenal ulcer or current treatment with anticoagulants).
	Hospital advised non-administration	Documentation in free text notes that GP, primary percutaneous coronary intervention (pPCI) nurse or doctor advised non-administration.
GTN Administered	Yes	GTN administration by EMS recorded in drugs section or free text. OR Patient/carer/other HCP administration documented while in the care of EMS. **GTN administration before EMS arrival will not be accepted.** **GTN can be administered at any time during the EMS care episode, there is no minimum time from arrival to administration.**
	Contraindicated as per JRCALC.	Valid JRCALC contra-indication recorded (final systolic blood pressure below 90 systolic, head trauma, ingestion of sildenafil (Viagra) or other erectile dysfunction medication within the last 24 hours,

		unconscious patient, known severe aortic or mitral stenosis.) **The specific contra-indication must be listed on the patient record. For example, 'Contra-Indicated' may be recorded in the GTN exception field. However, for the exception to apply, the actual contra-indication (from the list above) must also be recorded on the PCR.**
	No chest pain	Final pain score is 0 OR Free text notes state patient not in pain OR Free text notes state no chest pain OR GTN exception field states no chest pain.
	HCP advised non-administration	Documentation in free text notes that GP, primary percutaneous coronary intervention (pPCI) nurse or doctor advised non-administration.
	Patient refusal	Documentation of refusal of GTN OR Documentation of refusal of treatment OR Patient absconded from scene OR Patient asked clinicians to leave scene

		OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf OR Reduced level of consciousness and patient unable to follow instructions OR GTN refusal recorded in GTN exception field.
Two pain scores recorded	Yes	At least two pain score recorded in observations OR At least two pain score recorded in observations and/or free text OR A qualitative description of the **progression** of the patient's pain. For example, 'no change in pain', 'pain eased after GTN', 'no relief from treatment' or 'pain worsened en-route' OR Wong Baker scale used to record at least two pain scores. **Free text documentation that the patient is not in pain is sufficient.** **A single pain score of 0 is not sufficient, a second pain score is still required.**

	Patient refusal	Documentation that observations are refused OR Documentation of refusal of assessment OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Refusal recorded in initial pain score exception or latest pain score exception field.
	Patient unable	Documentation that the patient is cognitively impaired and unable to provide a pain score (for example, through dementia or learning disability) OR Documentation that the patient's level of consciousness is impaired, and they are unable to provide a pain score.
Appropriate analgesia administered	Yes	Morphine or entonox administration is recorded in drug section or free-text notes OR Paracetamol is administered AND entonox and morphine are refused OR Paracetamol is administered AND a valid contra-indication for entonox

		and morphine (as below) is recorded. **Absence of a paramedic or above is not an exception, as this is a service level failure.** **If morphine and entonox are both contra-indicated/refused, clinicians are not required to give paracetamol.**
	Patient refusal	Documentation of refusal of analgesia in free text OR Documentation of refusal of treatment OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf OR Reduced level of consciousness and patient unable to describe pain OR Analgesia refusal recorded in analgesia exception field.

	Patient not in pain/pain score 0.	Final pain score is 0 OR Free text states patient not in pain OR Unable to assess pain OR Patient not in pain recorded in analgesia exception field.
	Contra-indication to drugs as per JRCALC.	Morphine contraindication recorded on PCR (less than 10 breaths/min, final systolic blood pressure under 90 systolic, head injury with alertness below P on ACVPU or below 9 on GCS, known allergy or hypersensitivity to morphine) **<u>AND</u>** Entonox contraindication recorded on PCR (severe head injuries with impaired consciousness, decompression sickness, violently disturbed psychiatric patients, intraocular injection of gas within last 8 weeks, abdominal pain with suspected bowel obstruction). **The specific contra-indication must be listed on the patient record. For example, 'All Analgesia Contra-Indicated' may be recorded in the analgesia exception field on ePCR. However, for the exception to apply, the actual contra-indications (from the list above) must also be recorded on the PCR.** **A combination of refusals, contra-indication, and inability to administer analgesia will be**

		accepted. For example, unable to cannulate to give morphine and patient unable to self-administer entonox will be accepted. Or, patient refused entonox and systolic BP under 90 meaning that morphine cannot be given will be accepted. **It is accepted that entonox cannot be administered if a nebuliser is being given.**

Suspected Stroke Diagnostic Bundle		
Care Bundle Element	**National Ambulance Service Clinical Quality Group Definition**	**Application to SECAmb Clinical Records**
Inclusion in initial population	Patients with a new onset/presentation of suspected stroke symptoms, including those that are FAST positive, or where it was not possible to undertake a FAST there is sufficient documentation supporting a clinical impression of suspected stroke, or where ambulance staff suspect that it is a transient ischaemic attack that has not resolved in their care.	Condition code is C00 or C01 OR Deficit is present in face, arm (limb), speech test OR 'Suspected Stroke' field on paper PCR is checked. **It is recognised that some patients will be diagnosed as suffering a stroke or TIA on arrival at hospital and be included in the Sentinel Stroke National Audit Programme (SSNAP) audit. The EMS suspected stroke diagnostic bundle focusses only on patients where EMS suspect stroke. Patients where EMS did not suspect stroke and there was no FAST deficit should not be included in the diagnostic bundle sample.**
Exclusion from final sample **Further data collection is not required if any exclusion criteria applies.**	Complete resolution of symptoms during the clinicians care on-scene/before hospital arrival.	All neurological symptoms have resolved (e.g. FAST symptoms, dizziness, headache, confusion, visual disturbance, poor mobility, changes to gait, memory loss, inability to read/write, leaning to one side, reduced level of consciousness, ongoing seizures, altered sensation).
	Cardiac arrest at any point while with the crew.	Indication of cardiac arrest.
	Hospital transfer	Source of the call is any hospital in the SECAmb region that has an emergency department.
	Not suspected stroke	There is no mention on the clinical record that stroke is suspected. E.g. It appears that an incorrect condition code has been used or the condition code has been scanned incorrectly

		and the record does not relate to a patient with suspected stroke.
FAST recorded	Yes	Documentation of all three elements of FAST as negative in FAST section or free text OR Documentation of at least one element of FAST as positive (including side of deficit for face and arm) in FAST section or free text OR Documentation of FAST negative in free text (documentation that the patient is 'FAST negative' or 'FAST -ve' is sufficient evidence that all three elements of FAST have been assessed) OR Documentation of FAST negative in primary survey. **The side of the deficit only needs to be recorded once in the record. It is best practice to record the side of the deficit for both face and limb weakness, but this is not necessary to demonstrate compliance with the care bundle.**
	Patient refusal	Documentation that observations or FAST are refused OR Documentation of refusal of assessment OR Patient absconded from scene OR

		Patient asked clinicians to leave scene OR Refusal recorded in FAST exception field.
	Patient unable	Patient does not understand instructions for FAST OR Patient is unconscious OR Patient has existing disability (e.g. previous stroke or amputee) that makes it impossible to assess FAST.
Blood glucose measured	Yes	Blood glucose is recorded in observations (numerical value or 'high/low') OR Blood glucose is recorded in free text OR Free text states blood glucose is normal. **Equipment failure is not an exception, as this is a service level failure.** **Attendance of a double ECSW crew (unable to measure blood glucose) is not an exception, as this is a service level failure.**
	Patient refusal	Documentation that observations or blood glucose is refused OR Documentation that patient is agitated, and crew are unable to complete blood glucose measurement

		OR Documentation of refusal of assessment OR Patient absconded from scene OR Patient asked clinicians to leave scene.
Full blood pressure recorded	Yes	Systolic and diastolic blood pressure is recorded in observations OR Blood pressure is recorded in free text. **Equipment failure is not an exception, as this is a service level failure.**
	Patient refusal	Documentation that observations or blood pressure is refused OR Documentation of refusal of assessment OR Patient too agitated to record blood pressure OR Patient continuously fitting OR Patient absconded from scene OR

		Patient asked clinicians to leave scene OR Documentation that. BP is unrecordable/unreadable (not due to equipment failure).

Cardiac Arrest Registry Data Definitions		
Data Field	**Value**	**Definition**
Inclusion/Removal		
Inclusion in initial population		Condition code of A01, A00, J19, M34, O15, T02, or O03 OR 'DOA' or 'Resuscitation' field is selected on V4 paper PCR OR CPR Started is selected on paper PCR.
Resus Attempt	Blank	This field is left blank when the incident is a duplicate record.
	Yes	This means that there was a purposeful attempt to resuscitate the patient. This does not include cases where resuscitation is commenced while the facts of the case are established. For example, while a DNACPR is located or while clinicians discuss the viability of resuscitation with relatives or a senior clinician (e.g. Critical Care Desk (CCD), top cover consultant or Operational Team Leader (OTL)). Initial airway management, such as positioning, suctioning, oropharyngeal or nasopharyngeal airways and supraglottic airways, often form part of basic life support and should not be relied upon to indicate that there has been a purposeful attempt to resuscitate the patient. The presence of interventions such as vascular access, drug administration, defibrillation and intubation would indicate that there has been a purposeful attempt to resuscitate the patient. A resuscitation attempt that exceeds 20 minutes should not be excluded from the data (even if this is BLS only).

		This option does not include cases where the patient was obviously deceased, but resuscitation was carried out for the benefit of the family. E.g. in paediatric patients. This option does not include cases where a DNACPR etc. or end of life plan etc. was discovered after or during the resuscitation attempt.
	No	Resus attempt would be no if any of the items listed for 'include in total' apply to the record. OR The incident is not a cardiac arrest.
Include in total **Further data collection is not required if any exclusion criteria applies.**	Blank	This field is left blank when resuscitation is attempted.
	Deceased on Arrival (DOA)	This means that the patient was obviously deceased because a condition was present that is unequivocally associated with death: • Decapitation • Massive cranial and cerebral destruction • Hemicorporectomy • Decomposition/putrefaction • Incineration • Hypostasis • Rigor mortis • Foetal maceration • Submersion for longer than 90 minutes • No realistic chance that CPR would be successful (no bystander CPR in previous 15min, asystole for >30sec on ECG screen and no exclusion factors (drowning, hypothermia, poisoning/overdose, pregnancy, child/neonate). This includes patients where resuscitation was started but then stopped due to the discovery of one of the conditions above.

	Do Not Attempt Cardiopulmonary Resuscitation (DNAR)	This means that a decision not to commence resuscitation is recorded on a do not attempt cardiopulmonary resuscitation (DNACPR), treatment escalation plan (TEP), recommended summary plan for emergency care and treatment (RESPECT) or proactive elderly advance care plan (PEACE) document. (All of these documents are referred to as a DNACPR below.) JRCALC states that clinicians will be protected from liability if they stop or withhold treatment because they reasonably believe that a DNACPR exists and that it is valid and applicable. Ideally a DNACPR should identify the patient, identify the circumstances in which the DNACPR applies, identify whether the patient and their family are aware of the DNACPR, identify by whom and when the DNACPR was produced. The absence or expiry of a review date does not invalidate the DNACPR.
	Advance Decision to Refuse Treatment (ADRT)	This means that a valid and applicable advance ADRT is in place. This may be documented in the patient's medical notes or as a separate statement.
	End of Live (EOL)	This means that the patient's healthcare professionals have described the patient as approaching the end of their life and death is expected imminently (e.g. 'just in case medicines are present) but no DNACPR is evident.
	Best Interest Decision Not to Resuscitate (BI-No Resus)	This applies in cases where ambulance clinicians withhold resuscitation because a patient is in the final stages of an advanced and irreversible condition and there is not a DNACPR, ADRT or end of life care plan in place. This may involve consultation with the Critical Care Desk or top cover consultant.

		This may include documentation that the family state the patient would not want resuscitation, advanced frailty, a belief by clinicians that resuscitation would be futile or that a DNACPR or end of life care being arranged but not yet in place.
	No Resus	This applies in cases where resuscitation was not provided, however the reason for this is unclear or does not fall under any of the reasons listed here.
	Post-Resus	This applies when there is clear evidence that a patient has suffered an out of hospital cardiac arrest (e.g. shocks delivered from a public access defibrillator) and the patient is no longer in cardiac arrest on the arrival of EMS AND the patient suffers no further cardiac arrests during the care episode.
	Hospital Transfer	This applies when a patient is being transferred from a hospital within the SECAmb region that has an emergency department. **Cardiac arrest at a medical facility where there is no emergency department is not classified as a hospital transfer.**
Exclusion **Further data collection is not required if any exclusion criteria applies.**	Blank	This field is left blank when the record is to be included in the sample.
	Not an arrest	This means that the patient has not suffered a cardiac arrest before or after the arrival of EMS. This includes cases where cardiac arrest was suspected at the time of the 999 call, however the history recorded does not clearly evidence this.
	Duplicate	This means that the record is a duplicate of another record already included in the sample.
Patient Details		

Forename		This should be the spelling of the patient's name as recorded on the PCR unless a correct spelling is located on the NHS Spine.
Surname		This should be the spelling of the patient's name as recorded on the PCR unless a correct spelling is located on the NHS Spine.
Date of Birth		This should be the patient's date of birth as recorded on the PCR unless a corrected version is located on the NHS Spine.
Age		This should be calculated based on the patient's date of birth and the date of the incident. Approximate ages should be included, and unknown ages should be estimated if possible.
Age Unit		Years, months, weeks, or days.
Gender		Gender should match the PCR.
NHS Number		NHS number should match that on the NHS Spine.
Home Postcode		This should match the PCR unless it is apparent that an incorrect postcode has been recorded (e.g. incident postcode copied to home postcode). Otherwise, the home postcode from NHS Spine should be used.
Record Details		
Incident Address		This is the address of the emergency call as recorded on the CAD.
Operating Unit		This is the operating unit that the emergency call took place in.
Utstein Arrest Location	Home/Residence	This is any home (not necessarily the patient's home). It also includes the garden and driveway.
	Industrial/Workplace	This means the patient's place of work.
	Sports/Recreational Event	This means any sporting event or leisure centre, gym etc.
	Street/Highway	This means any public highway.
	Public Building	This means any building to which the public has access that does not fall into another category. It also includes building doorways.
	Assisted Living/Nursing Home	This means any nursing or residential home in which the patient resides.

	Educational institution	This means any nursery, school, college, university, or education centre.
	Other	This means any other category.
	Unknown/Not Recorded	This means that documentation of the location is unclear or contradictory.
Hospital		This is the hospital that the patient is conveyed to or left blank if not conveyed.
Arrest Details		
ROSC On Arrival	Yes	This means that ROSC was gained before the arrival of EMS **AND** The patient suffered a further cardiac arrest in the care of EMS.
	No	This means that the patient is in cardiac arrest on arrival of EMS or the first cardiac arrest is EMS witnessed.
	Unknown	This means that this information cannot be confirmed.
Aetiology	Cardiac	A cardiac arrest is presumed to be of cardiac origin unless it is known or likely to have been caused by trauma, submersion, drug overdose, asphyxia, exsanguination, or any other non-cardiac cause. Respiratory cause, respiratory arrest or a medical event before cardiac arrest is also included here.
	Trauma	This means that the cardiac arrest is likely to have occurred as the result of an extrinsic force on the patient. For example, penetrating, blunt, thermal, chemical, or radiological injury.
	Submersion	This means that the cardiac arrest is likely to have occurred because of submersion in liquid.
	Drug Overdose	This means that the cardiac arrest is likely to have occurred because of ingestion of drugs or another toxic substance.
	Asphyxia	This mean that the cardiac arrest is likely to be because of a disruption of

		an oxygen supply to the patient. E.g. through hanging, strangulation, choking or an environment that is absent of oxygen.
	Exsanguination	This mean that the cardiac arrest is likely to be because of major blood loss.
	Electrocution	This mean that the cardiac arrest is likely to be because of contact with an electrical current.
	Not Recorded	This means that there is not sufficient history recorded to determine a cause of cardiac arrest.
	Other Non-Cardiac	This means that the cardiac arrest is likely to be because of some other cause that is conclusively not cardiac.
Initial Rhythm	Asystole	This means that the initial rhythm is recorded in free text, arrest check boxes, ECG rhythm or defibrillation section as being asystole OR ROLE form describes the initial rhythm as asystole OR Initial rhythm is confirmed as being asystole from Codestat.
	VF/VT	This means that the initial rhythm is recorded in free text, arrest check boxes, ECG rhythm or defibrillation attempts as being ventricular fibrillation (VF) or ventricular tachycardia (VT) OR If an AED was used before the arrival of EMS, this means that a shock was delivered in the first rhythm analysis OR ROLE form describes the initial rhythm as VF/VT OR

		Initial rhythm is confirmed as being VF/VT from Codestat.
	PEA	This means that the initial rhythm is recorded in free text, arrest check boxes, ECG rhythm or defibrillation attempts as being pulseless electrical activity (PEA) or electromechanical dissociation (EMD) OR ROLE form describes the initial rhythm as PEA OR Initial rhythm is confirmed as being PEA from Codestat.
	Non-Shockable	This means that an AED was used before the arrival of EMS and no shock was advised in the first round of rhythm analysis OR A defibrillator in AED mode was used and exact initial rhythm was not recorded, with only “non-shockable” specified OR Contradictory initial rhythms were recorded but any/all rhythms were non-shockable.
	Other	This means that some other rhythm was recorded as being the first cardiac arrest rhythm.
	Not Recorded	This means that the initial rhythm was not recorded.
	Unknown	This means that it is not possible to determine the initial rhythm from the information recorded. Usually because information on the record is contradictory.

Arrest Witnessed	None	This means that the arrest was not witnessed. The patient was discovered in cardiac arrest.
	EMS	This means that the collapse/arrest was seen or heard by EMS clinicians on scene with the patient. **Community first responders and fire responders form part of an organised EMS response, their witnessing of an arrest would be classed as EMS witnessed.**
	Bystander	This means that the collapse/arrest was seen or heard by a bystander (including HCPs or others who do not form part of an organised EMS response) It does not mean that the arrest was heard during telephone triage, such an arrest would be unwitnessed unless there was a bystander on scene. **'GoodSAM' responders are not part of an organised EMS response, their witnessing of an arrest would be classed as bystander witnessed.**
	Unknown	This means that it is not possible to determine whether the arrest was witnessed from the information recorded.
Bystander CPR	No	This means that no CPR has been attempted before the arrival of an organised EMS response.
	Yes	This means that CPR has been performed before the arrival or an organised EMS response (regardless of the effectiveness of this CPR).
	Unknown	This means that it is not possible to determine whether there was bystander CPR from the information recorded.
Public Access Defibrillator Available	No	This means that it is explicitly stated in the record that no public access defibrillator is available.
	Yes	This means that the record states that a public access defibrillator is available.

		Community first responder and fire responder defibrillators are not public access defibrillators, they are part of an organised EMS response. **A defibrillator brought to the patient by a 'GoodSAM' or police responder is a public access defibrillator.**
	Unknown	This means that it is not possible to confirm whether a public access defibrillator was or was not available. This is the default answer unless a scenario described in the two options above applies.
Public Access Defibrillator Used	No	This means that a public access defibrillator was not applied to the patient. If "unknown" to "public access defibrillator available", then this is always "no".
	Yes	This means that a public access defibrillator was applied to the patient, whether or not a shock was delivered. If "yes" to "Public access defibrillator available", then this is "yes", unless it specifically says in free text that the AED was brought but not used.
	Unknown	This means it is not possible to determine whether a public access defibrillator was used from the information recorded.
Attempted Defibrillation of Patient	No	This means that the patient was not defibrillated at any point.
	Yes	This means that the patent was defibrillated at any time by bystanders or EMS.
	Unknown	This means it is not possible to determine whether a shock was delivered from the information recorded.
Time of First Shock		This is the time of the first shock delivered by either bystander or EMS. This should be estimated if not known.
Total Shocks		This is the total number of shocks delivered by bystanders and EMS. This does not include synchronised cardioversion.

ROSC at Any Time **This means that the post-ROSC care bundle should be completed (unless patient <18, cause of arrest is trauma or ROSC was achieved after leaving scene).**	No	This means that no circulation (pulse) is detected at any time.
	Yes	This means that circulation is detected at any point after the first cardiac arrest - irrespective of the duration of ROSC.
	Unknown	This means it is not possible to determine whether there was ROSC from the information recorded.
ROSC at Hospital Handover	No	This means that resuscitation was ongoing on arrival at the emergency department or resuscitation is terminated on scene.
	Yes	This means that the patient had a circulation on arrival at the emergency department. This does not mean ROSC on handover to helicopter emergency medical services (HEMS).
	Unknown	This means it is not possible to determine whether there was ROSC on arrival at the emergency department from the information recorded.
Death Confirmed by EMS	No	This means that resuscitation continued to hospital or the patient had ROSC at hospital. I.e. ROLE was not declared.
	Yes	This means that EMS recognised life extinct at any point during the care episode. This does not include when clinicians have recorded on the PCR that the patient was declared life extinct by hospital staff after arrival and handover at hospital.
	Unknown	This means it is not possible to determine whether death was confirmed by EMS from the information recorded.
Time of ROSC		This is the time of the patient's first ROSC. Irrespective of whether this was

		witnessed by bystanders or EMS and whether it was sustained. This should be estimated if not known.
Supraglottic Airway Used	No	This means that there was no attempt to insert a supraglottic airway.
	Yes – Successful	This means that a supraglottic airway was inserted and the patient was successfully ventilated using this airway. This option should be selected over 'failed', unless it is explicitly stated that the attempt to enter the airway failed.
	Yes – Failed	This means that a supraglottic airway insertion was attempted, but the patient could not be successfully ventilated using this airway.
	Unknown	This means it is not possible to determine whether a supraglottic airway was used from the information recorded.
Endotracheal Airway Used	No	This means that there was no attempt to insert an endotracheal airway.
	Yes – Successful	This means that an endotracheal airway was inserted, and the patient was successfully ventilated using this airway. This option should be selected over 'failed', unless it is explicitly stated that the attempt to enter the airway failed.
	Yes – Failed	This means that an endotracheal airway insertion was attempted, but the patient could not be successfully ventilated using this airway.
	Unknown	This means it is not possible to determine whether an endotracheal airway was used from the information recorded.
Intravenous (IV) Access	No	This means that there was no attempt to gain IV access.
	Yes – Successful	This means that IV access was gained successfully, or the IV route is recorded against a drug administered. This option should be selected over 'failed', unless it is explicitly stated that the attempt to gain access failed and no drugs are recorded as having been administered via IV.

	Yes – Failed	This means that there was an attempt to gain IV access, but it was unsuccessful.
	Unknown	This means it is not possible to determine whether IV access was attempted from the information recorded.
Intraosseous (IO) Access	No	This means that there was no attempt to gain IO access.
	Yes – Successful	This means that IO access was gained successfully, or the IO route is recorded against a drug administered. This option should be selected over 'failed', unless it is explicitly stated that the attempt to gain access failed and no drugs are recorded as having been administered via IO.
	Yes – Failed	This means that there was an attempt to gain IO access, but it was unsuccessful.
	Unknown	This means it is not possible to determine whether IO access was attempted from the information recorded.
Adrenaline Administered	No	This means that adrenaline was not administered.
	Yes	This means that adrenaline was administered by EMS or bystanders.
	Unknown	This means it is not possible to determine whether adrenaline was administered from the information recorded.
Amiodarone Administered	No	This means that amiodarone was not administered.
	Yes	This means that amiodarone was administered by EMS or bystanders.
	Unknown	This means it is not possible to determine whether amiodarone was administered from the information recorded.
Post-ROSC Care Bundle		
Oxygen Administered	No	This means that oxygen was not administered and there was no valid exception.
	Yes	Oxygen administration documented in drugs section OR

		Oxygen administration box ticked on ROLE form OR Oxygen administration documented in free text OR Any oxygen saturation reading showing as 'on oxygen' OR Administration of entonox, salbutamol or atrovent (ipratropium bromide) documented in drugs section or free text OR Patient recorded as being ventilated on 'air mix' or 'no air mix'. **Unconsciousness is not an exception.** **Equipment failure is not an exception, as this is a service level failure.**
	Patient Refusal	Documentation of refusal of oxygen OR Documentation of refusal of treatment OR Patient absconded from scene OR Patient asked clinicians to leave scene OR

		Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf.
	ROSC <10min	Documentation shows that all episodes of ROSC were less than 10 minutes in duration OR It is not possible to determine from documentation how long ROSC lasted.
	Not Required	Final recording of oxygen saturation are 94% or above OR The patient's medical history or free text notes state that the patient is diagnosed with COPD or hypercapnia AND final recording of oxygen saturation is 88% or above.
Capnography	No	This means that capnography was not recorded and there was no valid exception.
	Yes	End tidal CO2 recorded in patient's observations or airway sections OR ETT or supraglottic airway section shows 'placement confirmed by' 'end tidal CO2 or capnography' OR End tidal or capnography measurement recorded in free text OR Photograph of Lifepak Code Summary showing ETCO2 values.

		Equipment failure is not an exception, as this is a service level failure.
	Patient Refusal	Documentation of refusal of capnography measurement OR Documentation of refusal of treatment OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf.
	ROSC <10min	Documentation shows that all episodes of ROSC were less than 10 minutes in duration OR It is not possible to determine from documentation how long ROSC lasted.
	Not Required	An advanced airway (endotracheal or supraglottic airway) was not used.
Blood Pressure Recorded	No	This means that blood pressure was not recorded and there was no valid exception.
	Yes	Systolic blood pressure is recorded in observations OR Blood pressure is recorded in free text

		OR Documentation that BP is unrecordable/unreadable (not due to equipment failure) OR Indication that blood pressure is being monitored OR Presence of radial pulse documented. **Equipment failure is not an exception, as this is a service level failure.**
	Patient Refusal	Documentation of refusal of blood pressure measurement OR Documentation of refusal of treatment OR Documentation that patient cannot/will not sit still for recording (including patient agitation, resistance etc.). OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR

		Power of attorney declines treatment on the patient's behalf.
	ROSC <10min	Documentation shows that all episodes of ROSC were less than 10 minutes in duration OR It is not possible to determine from documentation how long ROSC lasted.
Blood Glucose Recorded	No	This means that blood glucose was not recorded and there was no valid exception.
	Yes	Blood glucose is recorded in observations (numerical value or 'high/low') OR Blood glucose is recorded in free text OR Free text states blood glucose is normal. **If blood glucose is measured pre-ROSC and is below 3, then a subsequent blood glucose is required.** **Any value of blood glucose post-ROSC is acceptable evidence of compliance.** **Equipment failure is not an exception, as this is a service level failure.**
	Patient Refusal	Documentation of refusal of blood glucose measurement OR Documentation of refusal of treatment OR

		Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf.
	ROSC <10min	Documentation shows that all episodes of ROSC were less than 10 minutes in duration OR It is not possible to determine from documentation how long ROSC lasted.
	Not Required	Blood glucose measured prior to ROSC (as per 'yes' definition) and 3mmol or more.
Fluid Administered	No	This means that fluids were not administered and there was no valid exception.
	Yes	Administration of more than 10ml of sodium chloride (in a single dose) is recorded in the drugs section OR Administration of a fluid bolus or commencing a fluid bolus is documented in free text OR Documentation that the drug has been administered, without a dosage being recorded, on ROLE form, anywhere on PCR, or in photograph of observations from Lifepak.

		Absence of a paramedic or above is not an exception, as this is a service level failure.
	Patient Refusal	Documentation of refusal of sodium chloride or cannulation OR Documentation of refusal of treatment OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf
	ROSC <10min	Documentation shows that all episodes of ROSC were less than 10 minutes in duration OR It is not possible to determine from documentation how long ROSC lasted.
	Not Required	Final recording of systolic blood pressure during ROSC (prior to arrival at the destination) is 90 or above OR Presence of radial pulse recorded in free text OR

		All attempts to gain intravenous and intraosseous access are unsuccessful OR Evidence of significant heart failure or hypervolemia clearly documented. **Evidence of an attempt to gain intraosseous access is not required to evidence that there was an attempt to deliver fluids, attempts to gain IV access are sufficient.**
12-Lead ECG Taken	No	This means that fluids were not administered and there was no valid exception.
	Yes	12-lead ECG box ticked on paper PCR OR 12 lead box ticked on ROLE form OR 12-lead ECG interpretation recorded in free-text OR ECG rhythm recorded in cardiac section of ePCR OR ST Depression/Elevation section of STEMI Clinical Outcome Indicator of ePCR completed. **Absence of a paramedic or above is not an exception, as this is a service level failure.** **Equipment failure is not an exception, as this is a service level failure.** **The 12-lead must be captured after ROSC. If the time of the ECG is not**

		known, this should be accepted as compliant.
	Patient Refusal	Documentation of refusal of 12-lead ECG measurement OR Documentation of refusal of treatment OR Documentation that patient cannot/will not sit still for recording (including patient agitation, resistance etc.). OR Patient absconded from scene OR Patient asked clinicians to leave scene OR Patient has an anticipatory care plan that includes the refusal of treatment or transport e.g. RESPECT OR Power of attorney declines treatment on the patient's behalf.
	ROSC <10min	Documentation shows that all episodes of ROSC were less than 10 minutes in duration OR It is not possible to determine from documentation how long ROSC lasted.
Compliant	No	This means that one or more element of the care bundle is recorded as 'no'.
	Yes	This means that all elements of the care bundle are recorded as 'yes' or a valid exception.
	Not Applicable	This means that the incident should not be included in the care bundle sample.

		This is only when valid exceptions apply: the patient is under 18 years of age, the cause of arrest is trauma, or ROSC was achieved after leaving scene.
Survival to Discharge		
Survival to Discharge	No	Death was confirmed by EMS (ROLE at any time) OR Date of death (only if within 48 hours of the incident) is recorded on the summary care record on the NHS Spine. OR The receiving hospital or patient's GP confirms that the patient did not survive to be discharged following this incident OR Free text notes mention that the resuscitation attempt was stopped on arrival at the receiving hospital.
	Yes	The patient was discharged home from hospital following the incident. OR The patient is discharged to a care facility following the incident. **Transfer to another hospital as part of ongoing care (e.g. to a heart attack centre) will not be classified as survival to discharge. The receiving secondary hospital must be contacted to determine the outcome.**
	TBC	This means that the patient outcome and the results are pending. This field should be updated before performance is calculated.
	Unknown – Still in Hospital	This means that the patient is still in hospital following their cardiac arrest.

		This field should be updated before revisions are calculated.
	Unknown – Other	This means that it is not possible to determine whether the patient survived to discharge for some other reason. E.g. no response from hospital or GP when requesting outcome data. This should be escalated to the Quality Improvement Lead for support.
	Unknown – Missing Patient Details	This means that due to the patient details being missing from the patient record it is not possible to trace the patient and determine their outcome.
Date of Death		This is the date that the patient died. This date can be completed if EMS recognise life extinct or if free-text notes state that resuscitation was stopped after arrival at the receiving hospital. Be mindful of recording the correct date when incidents cross midnight.
Date Discharged		This is the date that the patient was discharged if they survived to discharge.
Changes to Record		
CCP On Scene	No	This means that there was no evidence that a CCP was on scene.
	Yes	This means that the record states that a CCP was on scene in personnel list, drug administrations, free text notes etc.
	Unknown	This means it is not possible to determine whether there was a CCP on scene from the information recorded.
Changed from CCP Base	No	This means that CCP Base was not consulted or that no change was required to data after CCP Base was consulted.
	Compliance	This means that compliance with the care bundle depended upon information gathered from CCP Base.
	General	This means that other fields in the record were changed using information gathered from CCP Base OR

		Care bundle elements were changed using information gathered from CCP Base, but this did not affect compliance.
HEMS on Scene	No	This means that there was no evidence that HEMS were on scene.
	Yes	This means that the record states that HEMS were on scene in personnel list, drug administrations, free text notes etc.
	Unknown	This means it is not possible to determine whether HEMS were on scene from the information recorded.
Changed from HEMS Base	No	This means that no change was required to data after HEMS Base was consulted.
	Compliance	This means that compliance with the care bundle depended upon information gathered from HEMS Base.
	General	This means that other fields in the record were changed using information gathered from HEMS Base OR Care bundle elements were changed using information gathered from HEMS Base, but this did not affect compliance.
Changed from Codestat	No	This means that Codestat was not consulted or that no change was required to data after Codestat was consulted.
	Compliance	This means that compliance with the care bundle depended upon information gathered from Codestat.
	General	This means that other fields in the record were changed using information gathered from Codestat OR Care bundle elements were changed using information gathered from Codestat, but this did not affect compliance.
	No	This means that no clinical reviews are required, and the auditor is confident

Clinical Review Required		with their interpretation of the information recorded.
	Yes	This means that the auditor requires input from a clinician to determine the value to be recorded in one or more field. The query should be recorded in the notes field.
	Completed	This means the clinical review has been completed, advice has been given and the necessary values have been recorded.
Record Completed	No	This means that data collection for this record is incomplete.
	Yes	This means that data collection for this record is complete, excluding survival to discharge.