London Ambulance Service NHS
NHS Trust

Clinical Audit Annual Report 2015-16

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Authors: Emily Cannon and Rachael Fothergill

Clinical Audit & Research Unit
Clinical & Quality Directorate,
London Ambulance Service NHS Trust,
18-20 Pocock Street,
London
SE1 0BW

CARU.enquiries@londonambulance.nhs.uk

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2015-16 Clinical Audit Annual Report

Contents

1.0 Preface ... 4
2.0 Clinical Audit Projects ... 5
2.1 Inter-hospital Transfers (May 2015) ... 5
2.2 IV Paracetamol (July 2015) ... 5
2.3 Midazolam and Ketamine (September 2015) ... 6
2.4 Paediatric Respiratory Assessment Re-audit (September 2015) ... 6
2.5 Section 136 (December 2015) ... 7
2.6 Paediatric Sepsis (March 2016) ... 7
3.0 Continuous Clinical Audit Activity ... 8
3.1 Clinical Performance Indicators (CPIs) ... 8
3.2 Clinical Quality Monitoring ... 9
3.3 Continuous Re-contact Clinical Audit ... 10
4.0 National clinical audit ... 10
4.1 National Clinical Performance Indicators (CPIs) ... 10
4.1.1 Asthma National CPI ... 10
4.1.2 Single Limb Fracture National CPI ... 11
4.1.3 Febrile Convulsion National CPI ... 11
4.1.4 Elderly Falls National CPI ... 11
4.1.5 Mental Health CPI (pilot) ... 11
4.2 Other National Clinical Audit ... 11
5.0 Additional Data Requests ... 11
6.0 Engaging Staff in Clinical Audit ... 12
6.1 Training ... 12
6.2 Volunteering ... 12
7.0 Patient and Public Involvement ... 13
8.0 Clinical Audit Assurance ... 13
9.0 Sharing and Learning ... 13
10.0 Directions for 2016-17 ... 14
11.0 References ... 15
Appendix one: Glossary of abbreviations ... 16
Appendix two: Papers accepted for journal publication ... 17
Appendix three: Abstracts accepted for conference presentations ... 18
Appendix four: Clinical Audit Work Programme 2016-2017 ... 20

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For Further Information

All documents referred to in this report are available on request from the Clinical Audit & Research Administrator on 0207 783 2504 or from CARU.enquiries@londonambulance.nhs.uk.

1.0 Preface

The London Ambulance Service NHS Trust (LAS) prides itself on delivering high quality care and it's Clinical Audit and Research Unit (CARU) plays a role in both evidencing high standards and driving forward quality improvement through a comprehensive programme of clinical audit.

CARU assesses patient care through individual clinical audit projects, which are often prompted by incidents, complaints or feedback and enable the Service to learn and improve. Assurance is also provided internally via our programme of Clinical Performance Indicators (CPIs) and continuous data quality monitoring, and nationally through contributions to the NHS England Ambulance Quality Indicators and the National CPIs. We ensure that learning is taken forward by forming recommendations where improvements are needed and sharing our findings with staff through training, posters and Clinical Update articles. Following the implementation of actions, clinical care is then re-assessed which, as demonstrated by this report, leads to improved patient care. CARU have also shared learning externally by publishing papers and presenting abstracts at a number of conferences throughout 2015-16 and informing national clinical practice guidelines.

In June 2015, the LAS were inspected by the Care Quality Commission who reported that significant improvements were needed across the Trust[1]. As a result, CARU have supported the organisation in working towards our quality improvement plan. The CQC inspection report found that particular improvement was needed in the way the Service manages medicine and the LAS should "set up a system of checks and audit to ensure medicines removed from Paramedic drug packs have been administered to patients". As a result, CARU have contributed to assurance by including an additional aspect of care in the Clinical Performance Indicators (CPIs) and focusing on medicines management in relevant clinical audits.

This report details all clinical audit activity undertaken within the LAS in 2015-16.

2.0 Clinical Audit Projects

All clinical audit findings and recommendations are approved by the Clinical Audit and Research Steering Group (CARSG) prior to dissemination through our publication process. In 2015-16, CARU worked on 17 clinical audit projects and facilitated a further five projects. This section outlines the key findings and recommendations from audits published in 2015-16.

2.1 Inter-hospital Transfers (May 2015)

A serious incident occurred within the LAS in 2013, whereby a transfer for a patient with aortic dissection was incorrectly triaged as an immediate rather than a critical transfer. This resulted in a delayed response and unfortunately the patient later died. Anecdotal concerns were also raised as to whether hospitals request faster transfers than necessary and for patients with non-urgent conditions suitable for transportation by the hospital's own patient transport service (PTS).

We found that the majority of conditions described by hospitals matched the criteria listed on the LAS hospital transfer flow chart, which is to be expected as hospital clinicians have been involved in the preparation of the list. LAS triage was in line with the hospital transfer flow chart for the majority of requests. However, the proportion of incorrect triages by call handlers was higher when the patient's condition was not on the flow chart, some transfers were assigned incorrect Medical Priority Dispatch System (MPDS) codes, and advice sought/given within the Control Group was not always recorded on Command Point. To address this, Control Services Bulletins were issued reminding call handlers of the correct procedures. This clinical audit also added to the evidence base for introducing an alternative MPDS triage card (card 37) specifically for inter-hospital transfers which was later adopted by the LAS.

2.2 IV Paracetamol (July 2015)

In December 2013, the London Ambulance Service NHS Trust (LAS) introduced intravenous (IV) paracetamol. This clinical audit aimed to determine the reasons that IV paracetamol is being administered, whether it has been used appropriately, and whether it's effective in reducing pain and/or temperature.

This clinical audit showed that, on the whole, IV paracetamol was used appropriately by LAS Paramedics in accordance with national guidelines and LAS training. However, there were some instances where its administration was not indicated and whilst this is not known to have caused harm to the patients, this means they were cannulated unnecessarily. In a small number of cases, IV paracetamol was administered to patients experiencing mild pain when oral tablets would have been more appropriate. Confusion may have stemmed from the fact that at the time, the indications for oral and IV paracetamol were presented together in national guidelines.

As a result of our audit, the Association of Ambulance Chief Executives amended national clinical guidelines to clarify the indications for IV paracetamol[2]. We also

published a Clinical Update article reiterating the indications for IV paracetamol, in addition to issuing a poster to all ambulance stations and proposing that the pain tool is revised to include IV paracetamol.

2.3 Midazolam and Ketamine (September 2015)

In January 2014, the London Ambulance Service NHS Trust (LAS) introduced an Advanced Paramedic Practitioner (APP) role to provide selected practitioners with enhanced knowledge and clinical interventions beyond standard paramedic practice. Such clinical interventions include the administration of ketamine (KET) and midazolam (MDZ) given under LAS patient group directions (PGDs). This clinical audit aimed to determine whether these new drugs are being administered appropriately and safely.

Both drugs were indicated for all patients who received them. All patients were administered MDZ by an appropriate route. Nearly all patients were administered doses of MDZ as per the PGD and Medical Directorate permission was given to exceed the maximum dose of MDZ for four patients. However, a small number were administered doses of MDZ that exceeded the amount specified without Medical Directorate permission. Route and dosing regimen for all administrations of KET were in line with the PGD for all patients.

The PGD will be amended to reflect intraosseous and subcutaneous as appropriate routes of administration for MDZ and increase the permissible dose for MDZ and KET. Feedback was provided to the APPs whose documentation was not sufficient and those who exceeded the maximum incremental dose without consulting the Medical Directorate on call. The findings of the report were also shared at an APP development day to address areas of assessments and documentation which require improvement.

2.4 Paediatric Respiratory Assessment Re-audit (September 2015)

Respiratory distress in young children is a common scenario faced by the LAS clinicians. It can be caused by a range of conditions, some of which may prove fatal. Therefore, to prevent further deterioration, it is crucial to complete a thorough on-site assessment. A previous clinical audit in 2012 showed that not all patients had oxygen saturation levels measured or their chest auscultated during assessment. This re-audit served to evaluate whether the implemented actions, including the introduction of a paediatric oxygen saturation measuring device, have led to improvement.

The re-audit found an 11% increase in the number of patients who had two respiratory rates recorded when compared with the results of the 2012 clinical audit. The percentage of patients who had two oxygen saturation readings and their chest auscultated improved by 18% and 12% respectively. To aid further improvement, posters were sent to all ambulance stations congratulating clinicians on the improvements since the last audit and reiterating the areas which require further work. A Clinical Update article was published on the importance of an accurate

respiratory assessment and findings regarding missing oxygen saturation equipment were shared with the Clinical Equipment Working Group.

2.5 Section 136 (December 2015)

The early part of 2014 marked a national drive to improve the care of patients detained under Section 136 of the Mental Health Act. This clinical audit assessed Emergency Operations Centre (EOC) staff and crew compliance to LAS guidance, including: whether sufficient information was recorded by EOC, whether calls received a response within national timeframes, and whether patients were appropriately conveyed to a place of safety, or an Emergency Department (ED) if further medical attention was required.

This clinical audit found that when Section 136 transportation was requested by the police, the information provided lacked the detail required to ensure correct triage of calls. Of the calls cancelled by the police, a small number were not received in EOC and the LAS arrived on scene to find the patient had been transported by other means. Only one of the four patients who required a response within eight minutes were attended within this timeframe - there was no evidence of harm caused to the remaining three patients. Two-fifths of patients with no clinical risks received a response within 30 minutes.

Nearly all patients were appropriately conveyed to a Section 136 suite or an ED if they required medical attention. However, one patient was taken to a police station when they required medical assessment at an ED, and two patients were taken to an ED when their documentation indicated a Section 136 suite would have been more suitable.

This clinical audit produced 16 recommendations which included updating EOC guidance on the management of Section 136 requests and making it easily accessible for staff. We have communicated our findings to police forces in London and reminded them of the information the LAS needs to triage calls, which has also been included in draft NHS guidance on the Section 136 pathway in London. The Memorandum of Understanding between the LAS and Metropolitan Police Service will also be amended. To ensure that frontline staff are aware of the correct management of patients under Section 136, a Clinical Update article was published outlining the correct destination for patients, that patients should only travel in a police vehicle as a last resort if they display violent behaviour, and patients conveyed in a police vehicle must be accompanied by a qualified LAS clinician. The report has also been shared with external stakeholders.

2.6 Paediatric Sepsis (March 2016)

Following CARU's 2015 clinical audit assessing clinicians' ability to identify and manage sepsis in adults, this clinical audit applied a similar methodology to assess the identification and management of severe sepsis in paediatric patients (aged 16 and under). The audit focussed on the overall assessment of the child (including basic observations and a review of systems), whether crews recognised sepsis,

treatment provided on scene, and whether crews identified the urgency of the patient's condition (time spent on scene and pre-alert to hospital).

As a result of this clinical audit, the Medical Directorate will produce a web-tutorial on paediatric assessment to ensure clinicians are aware of the importance of undertaking core observations and the key indicators of severe sepsis. The LAS will also consider whether to introduce a paediatric sepsis Clinical Performance Indicator (CPI) or whether to re-audit in the future. Areas of good practice and areas for improvement were shared with clinicians in a Clinical Update article and a poster sent to stations. Clinicians who documented excellent paediatric assessment were also congratulated.

3.0 Continuous Clinical Audit Activity

3.1 Clinical Performance Indicators (CPIs)

During 2015-16 the LAS underwent an operational restructure, moving from three sectors to six. To coincide with this, protected office time for Team Leaders was introduced, providing them with more opportunity to undertake CPI audits. Following the restructure, completion of CPIs fluctuated, before peaking in March 2016. Similarly, the number of feedback sessions delivered to staff varied, with increased levels of feedback delivered during months when Team Leaders had more protected office time. Feedback sessions are pivotal in ensuring clinicians are made aware of areas for improvement, thus ensuring a high standard of patient care is delivered.

During the operational restructure, the role of Quality Governance and Assurance Manager (QGAM) was introduced, with one responsible for each of the newly formed sectors. This role is vital in monitoring completion and feedback levels.

Despite fluctuating levels of completion and feedback, compliance levels in every CPI were maintained. Figure 1 outlines a snapshot of the level of care provided for each patient group in April since 2006.

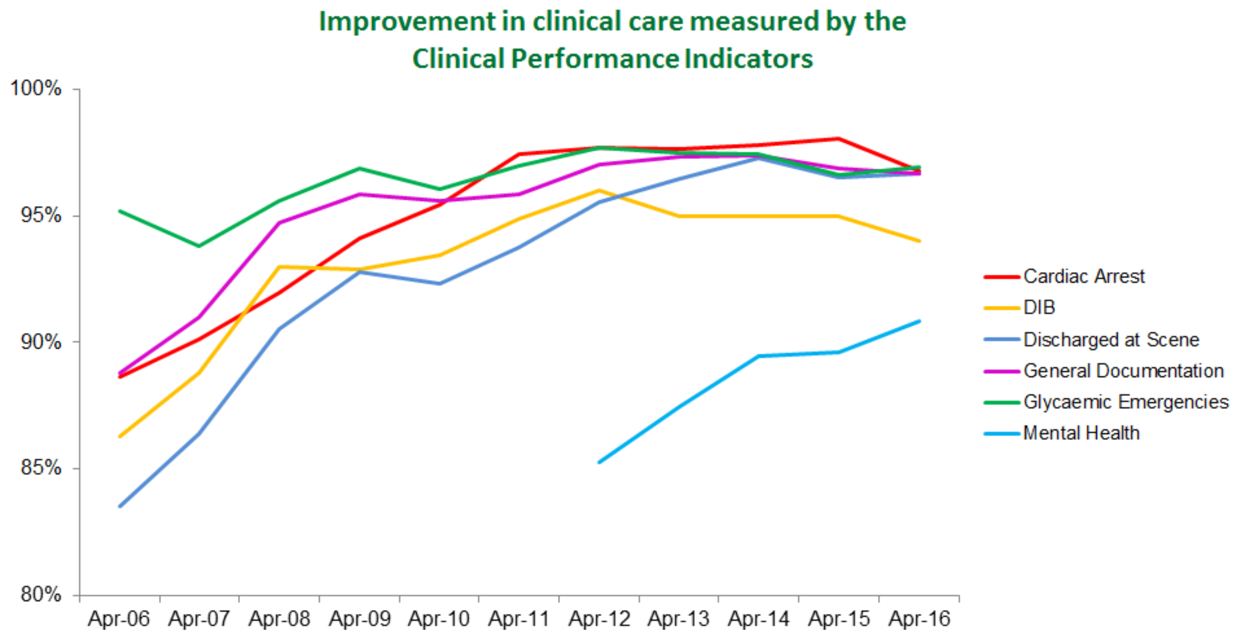

Figure 1: CPI compliance rates from April 2006 to April 2016

Significant developments in the CPIs were made in 2015-16. Following the Service's CQC inspection report, CARU added an aspect of care to the General Documentation CPI to determine whether crews are recording the drug pack code when administering a drug from the Paramedic drug pack.

Other developments included providing the Tactical Response Unit (TRU) with the facility to undertake CPI audits and feed back directly to their own staff.

Two new CPIs were also developed for introduction in 2016/17; Severe Sepsis and Elderly Falls.

We continued to distribute our monthly CPI reports across the Service. Key CPI compliance figures were also entered in to the Trust's Quality dashboard each month, with findings of note highlighted to the LAS's Executive Leadership Team (ELT) through the monthly Quality Report.

3.2 Clinical Quality Monitoring

Throughout 2015-16 we continued to monitor and demonstrate high quality clinical care to our cardiac arrest, ST elevation myocardial infarction (STEMI - a type of heart attack), stroke and major trauma patients. However, the documentation of analgesia for our STEMI patients continues to require improvement and our ambulances are spending, on average, two minutes longer on scene than the 30 minute target. Return of spontaneous circulation (ROSC) and survival rates for 2015-16 remain consistent with figures reported in the previous year. Through monthly reports we inform clinical staff, Quality Governance and Assurance Managers, and operational management teams of the care provided in each sector enabling them to

assess local improvement initiatives. Please see the cardiac arrest, STEMI and stroke annual reports for more detailed information.

In addition to assessing clinical care, staff in CARU also ensure the safety and wellbeing of patients. During 2015-16, we made 99 safeguarding referrals for patients whose PRFs suggested they may be vulnerable, but there was no documentation by the attending clinician that a referral had been made. The majority of referrals were for patients aged under 18 involved in major trauma.

During routine data collection, CARU staff also forwarded a further 331 cases to QGAMs or specialty leads for review and where necessary, feedback was delivered to the clinician in order to improve their clinical practice. Examples of where we have been able to provide positive feedback to our clinicians is presented in Section 9.0.

3.3 Continuous Re-contact Clinical Audit

In 2012, the LAS took part in the National Audit of Non-Conveyance which revealed that one patient had unexpectedly died following their initial contact[3]. As a result we undertook a further clinical audit covering a seven day period. The audit found no unexpected deaths and recommended that re-contacts are continuously monitored in the Service. All re-contacts where the patient severely deteriorated (pre-alerted to hospital) or died unexpectedly in 2015-16 were reviewed to assess the appropriateness of the decisions made, with some escalated and reviewed by the Serious Incident Group. Monthly and quarterly reports detailing initial contacts have been shared with the LAS Clinical and Quality Directorate and an annual report will be published via CARU's normal dissemination process.

4.0 National clinical audit

4.1 National Clinical Performance Indicators (CPIs)

The National CPIs compare care across the country and evidence national clinical audit participation to the Department of Health (DH) in the Quality Accounts Mandatory Assurance Statements. Two reports were released during the 2015-16 period which demonstrated varying levels of LAS compliance to the different National CPIs[4,5], outlined below. As a result, CARU created an information booklet detailing the care bundles these patient groups should receive, which has been published on the Service's Listening in Action (LiA) Facebook page and phone app. Our performance has been presented at Team Leader Conferences and to CARSG, both of whom have discussed how to improve compliance to the national CPIs.

4.1.1 Asthma National CPI

We continued to see an upward trend for nearly all aspects of care necessary for asthmatic patients. Peak flow remains the lowest performing aspect of care; however, the importance of carrying out a peak flow was included in recent face-to-face Core Skills Refresher training delivered to all members of staff and it is expected this will lead to improvement.

4.1.2 Single Limb Fracture National CPI

The LAS saw an improvement in the care provided to patients with a single limb fracture between cycles 14 and 15. However, further improvement is still required.

4.1.3 Febrile Convulsion National CPI

The administration of an anticonvulsant and use of an appropriate discharge pathway remains high for patients who have had a febrile convulsion. However, a reduction in the number of patients who had their oxygen saturation measured and temperature managed led to a decrease in overall care bundle provision.

4.1.4 Elderly Falls National CPI

Following the pilot, Elderly Falls is now an established CPI. Carrying out a 12 lead ECG for non-mechanical falls and assessment of the patient's mobility are in need of particular improvement.

4.1.5 Mental Health CPI (pilot)

The Mental Health (Self Harm) pilot CPI was introduced during 2015-16. This national CPI assesses seven aspects of care, including the documentation of: the mental state of the patient, exact nature of the injury, a clinical assessment, and assessment of the patient's capacity. Nationally, the LAS has ranked top for recording the patient's social/family network, but bottom for documenting evidence of alcohol and/or drug ingestion.

4.2 Other National Clinical Audit

In 2015-16, the LAS continued to supply data to the Myocardial Ischaemia National Audit Project (MINAP) and validate the pre-hospital data entered by hospitals. Monthly submissions and six-monthly resubmissions were also made to NHS England for the AQI clinical outcome measures for cardiac arrest, STEMI and stroke.

5.0 Additional Data Requests

Clinical audit data played an important role during the Service's Care Quality Commission (CQC) inspection in June 2015. Our data provided evidence of the high standard of care given by our clinicians and that as an organisation we continuously learn from our audits and strive to deliver the best possible care to our patients.

6.0 Engaging Staff in Clinical Audit

In addition to clinical audit undertaken within CARU, we also encourage and facilitate clinician involvement in clinical audit through the following training and volunteering opportunities. This provides clinicians with the opportunity to demonstrate they are able to reflect on and review their practice for their Health and Care Professions Council (HCPC) registration.

6.1 Training

Throughout 2015-16, we continued to deliver a number of training sessions across the Service (as shown in Table 1) to ensure staff are aware of the role clinical audit and research plays in the LAS, both in terms of evidence based practice and the impact of our work.

Session	Audience	Participants in 2015-16
Emergency Operations Centre Induction: Clinical Audit & Research in the LAS	New Emergency Medical Dispatchers	127
LAS Internship	Internship Paramedics	122
Team Leader Conference: Clinical Audit & Research Update	Team Leaders	120
Clinical Performance Indicators (CPIs)	Team Leaders, Training Officers and Paramedics	101
LAS Stroke Education Event	All staff levels	60
Clinical Development Module: Evidence Based Practice	Paramedic Managers and Team Leaders	45
Severe Sepsis CPI Training	Team Leaders	30
Emergency Medical Dispatchers (EMD) Development Days	EMD Managers and Supervisors	13

Table 1: CARU training delivered in 2015-16

6.2 Volunteering

In 2015-16, eight members of front-line staff were supported to undertake clinical audit projects. In addition, seven medical students were provided with one-on-one support and guidance whilst on placement to conduct pre-hospital clinical audit projects with CARU.

Following an excellent response to an advert for volunteers in the LAS Routine Information Bulletin (RIB), 28 Paramedics and seven staff in EOC assisted with our continuous re-contact clinical audit in 2015-16.

7.0 Patient and Public Involvement

CARU continue to value patient and public involvement in clinical audit. Feedback from the LAS Patients' Forum and Sickle Cell Society was the key driver for adding a sickle cell re-audit to our 2016-17 workplan. We will also be sending out a patient questionnaire in order to understand patients' experiences of the care provided by the LAS when in sickle cell crisis.

In addition, the patient representative on CARSG continued to review our clinical audit working practices, as outlined in section 8.0.

8.0 Clinical Audit Assurance

For the third consecutive year, an annual review of the Service's clinical audit working practices was undertaken to ensure all work is carried out in line with our clinical audit strategy[6]. The review was undertaken by the patient representative on CARSG, who confirmed that all audits were carried out in line with the strategy.

Throughout 2015/16, CARU also continued to evaluate whether completed clinical audit projects met their aims and objectives in order to identify learning points for future projects. A cost analysis for every project was also conducted to demonstrate value for money.

Two members of the clinical audit team were also awarded their Advanced Clinical Audit accreditation by the Clinical Audit Support Centre, thus ensuring robust methodology in all clinical audits.

Quality improvement undertaken within CARU led to additions to the LA1 (dispatch summary/roadworthy form), including a checklist to ensure that at the end of a shift, PRFs have an incident and illness code, and that electrocardiogram (ECG) and End-Tidal Carbon Dioxide ($ETCO_2$) strips are submitted where necessary. This ensures all PRFs are included in clinical audit, CPIs, continuous data quality monitoring and we have the supporting print outs to assess clinical care.

9.0 Sharing and Learning

We often identify excellent areas of clinical practice in our clinical audits and share these with staff through posters, the Clinical Update and the RIB. In 2015/16 we also shared findings and reports on the Service's LiA Facebook page, of which a large proportion of staff are members. This platform is an excellent way of stimulating discussion amongst clinicians and is one we will be using throughout 2016-17.

CARU also ensures that clinicians are commended for excellent clinical practice where possible, for example 16 crews were given positive feedback on the care they provided as a result of the continuous re-contact audit. In 2015/16, we also sent out 1,500 letters to clinical staff that attended cardiac arrest patients and provided lifesaving interventions at the scene and en-route to hospital. Furthermore, we sent

over 350 letters to our Emergency Medical Dispatchers to recognise their crucial role in early recognition of cardiac arrest and initiation of dispatcher assisted bystander CPR.

In addition to communicating our findings internally, CARU also promote the LAS and our clinical audit achievements to external audiences. In 2015-16, three papers were published using LAS clinical audit data (as shown in appendix two). In addition, ten LAS clinical audit abstracts were accepted at national conferences (appendix three).

10.0 Directions for 2016-17

In 2016-17, we will undertake a range of in-depth clinical audits (see appendix four for the complete work programme). We will support the Service in the lead up to, and during, the CQC's re-inspection and also assist the Service in meeting Commissioning for Quality and Innovation (CQUIN) targets, specifically sickle cell. We will also continue to participate in national clinical audit and promote LAS clinical audit through internal training and external publications.

11.0 References

[1]Care Quality Commission, 2015. London Ambulance Service NHS Trust Quality Report. London: Care Quality Commission.

[2]Joint Royal Colleges Ambulance Liaison Committee, 2016. UK Ambulance Services Clinical Practice Guidelines 2016. Bridgwater: Class Professional Publishing.

[3]National Ambulance Service Clinical Quality Group, 2015. *National Ambulance Non-Conveyance Audit (NANA).* Bolton: North West Ambulance Service NHS Trust.

[4]National Ambulance Service Clinical Quality Group, 2015a. *Report on National Ambulance Service Clinical Performance Indicators* – *Cycle 14.* Lincoln: East Midlands Ambulance Service NHS Trust.

[5]National Ambulance Service Clinical Quality Group, 2015b. *Report on National Ambulance Service Clinical Performance Indicators* – *Cycle 15.* Lincoln: East Midlands Ambulance Service NHS Trust.

[6]London Ambulance Service NHS Trust, 2016. *Strategy, Process and Application of Clinical Audit in the London Ambulance Service.* London: London Ambulance Service NHS Trust.

Appendix one: Glossary of abbreviations

APP	Advanced Paramedic Practitioner
AQI	Ambulance Quality Indicator
CARSG	Clinical Audit & Research Steering Group
CARU	Clinical Audit & Research Unit
CPI	Clinical Performance Indicator
CQC	Care Quality Commission
CQUIN	Commissioning for Quality and Innovation
DH	Department of Health
ECG	Electrocardiogram
ED	Emergency Department
EOC	Emergency Operations Centre
HCPC	Health and Care Professions Council
IV	Intravenous
JRU	Joint Response Unit
KET	Ketamine
LA1	Dispatch summary/roadworthy form
LAS	London Ambulance Service NHS Trust
LiA	Listening in Action Facebook Page
MDZ	Midazolam
MINAP	Myocardial Ischaemia National Audit Project
MPDS	Medical Priority Dispatch System
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
PGD	Patient Group Direction
PRF	Patient Report Form
PTS	Patient Transport Service
QGAM	Quality Governance and Assurance Manager
RIB	Routine Information Bulletin
ROSC	Return of Spontaneous Circulation
STEMI	ST elevation myocardial infarction
TRU	Tactical Response Unit

Appendix two: Papers accepted for journal publication

Title:	Ambulance clinician assessment and management of transient loss of consciousness: a retrospective clinical audit
Authors:	J Shaw, A Ulrich, R Fothergill, M Whitbread
Journal:	Journal of Paramedic Practice
Title:	Ensuring an appropriate pre-hospital response to patients in sickle cell crisis
Authors:	J Shaw, R Fothergill, G Virdi
Journal:	Emergency Medicine Journal
Title:	Improving pre-hospital paediatric pain management.
Authors:	J Shaw, R Fothergill, G Virdi
Journal:	Emergency Medicine Journal

Appendix three: Abstracts accepted for conference presentations

Title:	Clinical Performance Indicators evidencing good clinical practice
Authors:	Shaw J, Fothergill R, Salvidge H
Conference:	Evidence Live, April 2015
Title:	Improving outcomes for cardiovascular disease
Authors:	Murphy-Jones G, Shaw J, Fothergill R
Conference:	Evidence Live, April 2015
Title:	Clinical audit of the diagnosis, management, and treatment of sepsis in the London Ambulance Service
Authors:	Murphy-Jones B, Shaw J, Fothergill R
Conference:	Sepsis Unplugged, May 2015
Title:	A study to determine the EZ-IO® Intraosseous Infusion System success rate, including impact on return of spontaneous circulation
Authors:	B Woodhart, J Shaw, R Fothergill
Conference:	999 EMS Research Forum, March 2016
Title:	Elderly fallers: is increased ambulance response time associated with mortality?
Authors:	E Cannon, J Shaw, R Fothergill, J Lindridge
Conference:	999 EMS Research Forum, March 2016
Title:	Joint Response Unit: Improving collaborative working between the London Ambulance Service and the Metropolitan Police Service
Authors:	R Zipfel, S McIlwaine
Conference:	999 EMS Research Forum, March 2016

Title:	Level of sepsis knowledge in UK ambulance services
Authors:	B Murphy-Jones, J Shaw, R Fothergill
Conference:	999 EMS Research Forum, March 2016
Title:	Complications associated with supraglottic airway use in an urban ambulance service: A case series
Authors:	T Edwards
Conference:	999 EMS Research Forum, March 2016
Title:	Prehospital use of Ketamine and Midazolam in an urban Advanced Paramedic Practitioner service: A retrospective review
Authors:	T Edwards, J Shaw, D Gray, N Thomson, M Faulkner
Conference:	999 EMS Research Forum, March 2016
Title:	Data linkage across ambulance services and acute trusts: assessing the potential for improving patient care
Authors:	S Clark, A Porter, M Halter, M Damiani, H Dorning, M McTigue
Conference:	999 EMS Research Forum, March 2016

Appendix four: Clinical Audit Work Programme 2016-2017

In order to be responsive to the needs of the Service projects may change if the need arises.

CARU Clinical Audit Projects

- Paediatric conveyance review (continued from 2015/16)
- Oramorph (continued from 2015/16)
- Heart failure (continued from 2015/16)
- Paediatric pain management re-audit (continued from 2015/16)
- Alcohol intoxication re-audit (continued from 2015/16)
- Paediatric pyrexia management re-audit (continued from 2015/16)
- Hydrocortisone re-audit (continued from 2015/16)
- Adrenaline for anaphylaxis (continued from 2015/16)
- Exercise Unified Response
- Continuous re-contact
- Sickle cell crisis re-audit
- Mental Capacity Act
- Hypovolaemic shock
- Ondansetron
- Dexamethasone
- Burns management

Facilitated Clinical Audit Projects

- Paediatric abdominal pain
- Head injuries
- Analgesia use
- Undiagnosed psychiatric problems
- Pain assessment of cognitively impaired patients
- Cardiac arrest data downloads

Clinical Performance Indicator Audits

- Cardiac Arrest (all PRFs)
- Difficulty in Breathing (alternative months: 50% of all PRFs)
- Glycaemic Emergencies (alternative months: 50% of all PRFs)
- Mental Health (all PRFs)
- Severe Sepsis (all PRFs)
- Discharge at Scene (50% of all PRFs and 100% of police arranging removal)
- General Documentation (1/40: 2.5% of all PRFs)

Clinical Performance Indicator Audit Activity

- Continuous monitoring of audit completion
- Continuous monitoring of compliance to care guidelines
- Continuous monitoring of feedback provision
- Monthly training delivery
- Quarterly on track posters disseminated to all stations

Clinical Quality Monitoring

- Cardiac Arrest (all PRFs)
- Major Trauma (all PRFs)
- Acute Coronary Syndromes (ACS: all PRFs)
- Stroke (all PRFs)

Routine Reporting of Audit Activity

- Cardiac Care Pack (consisting of Cardiac Arrest and ST Elevation Myocardial Infarction Monthly Complex Reports)
- Stroke Care Pack (consisting of Stroke Monthly Complex Reports)
- Major Trauma Care Cack (consisting of Major Trauma Quarterly Complex Reports)
- Clinical Performance Indicator Monthly Report
- NHS England Ambulance Quality Indicators: Clinical measures
  - Outcome from cardiac arrest – Return of Spontaneous Circulation (ROSC)
  - Outcome from cardiac arrest – Survival to discharge
  - Outcome from acute STEMI
  - Outcome from stroke

Annual Reporting of Audit Activity

- Clinical Audit Annual Report
- Cardiac Arrest Annual Report
- ST Elevation Myocardial Infarction Annual Report
- Stroke Annual Report
- Major Trauma Annual Report
- Strategy, Process and Application of Clinical Audit in the London Ambulance Service

National Clinical Audits

- Asthma National Clinical Performance Indicator (bi-annual data submission)
- Trauma National Clinical Performance Indicator (bi-annual data submission)
- Febrile Convulsions National Clinical Performance Indicator (bi-annual data submission)
- Elderly Falls National Clinical Performance Indicator (bi-annual data submission)
- Mental Health National Clinical Performance Indicator (bi-annual data submission)

Additional reporting for Meetings

- Clinical Development and Professional Standards Committee
- Safety Committee (specifically relevant NICE Quality Standards)
- Quality Governance Committee

Miscellaneous Activity

- Facilitation of clinical audit – all clinical audit projects undertaken by front line staff will be registered with and receive support and guidance from the Clinical Audit & Research Unit

- Clinical Audit Database – all clinical audit projects will continue to be registered on this database, and the implementation of recommendations will continue to be monitored
- Auditing Audit – clinical audit projects will be evaluated using the Health Services Management Centre's assessment tool and Best Practice in Clinical Audit evaluation tool
- Cost analysis – each clinical audit will be assessed for its expenditure.