

Incident date: 8th September 2013
Date of Final Report: 13th November 2013
Investigating Managers:
Incident Type: Care Delivery
Incident Level: Level 1

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1. Executive Summary

A 999 call was placed at 03:27:08 to the East of England Ambulance Service NHS Trust (EEAST) on the 8th September 2013 by Mrs 'Z' for her 30 year old husband who was described as 'fitting'. The call was triaged by the Call Handler under card '12' 'convulsions/fitting' in line with AMPDS/PROQA certificated triage tool. The location of this emergency call was to the patient's home address in Luton.

At 03:28:31 the call was categorised as an R1 call (life threatening and required an eight minute response).

A solo responder and a double staffed ambulance were dispatched to the scene. The patient was reported to have suffered approximately 3 fits over the last 1 hour.

There were a number of stages within the incident which contributed to care delivery problems which are outlined in the full incident description and the timeline. A summary of key factors include:

- An Emergency Care Assistant (ECA) was tasked with giving IV drugs which is outside their scope of practice. ECA's are not authorised to handle or administer Diazemuls in relation to EEAST Medicine Management Policy and ECA Scope of Practice.
- Adequate equipment to deal with a potential life threatening emergency was not immediately available as it had not been initially taken to the patient's side.
- The solo clinician's personal issue response bag was not stocked with the appropriate equipment for managing a critically unwell patient; this is due to a lack of recognised stock list for personal issue bags.
- Following the patient deteriorating into cardiorespiratory arrest and resuscitative treatment being instigated the return of spontaneous circulation (ROSC) management and care was not initiated in line with Trust guidance.
- Unsafe manual handling manoeuvre was applied in extricating the time critical patient from the property to the ambulance.
- The ECA clinicians felt unable to challenge the leadership actions of the lead clinician due to his persona towards them.

Following the assessment and treatment identified in the main report the patient's condition deteriorated into cardio-respiratory arrest. Resuscitative attempts were initiated by the clinicians on scene which resulted in the return of spontaneous circulation (ROSC) and subsequent transportation to hospital.

The patient never regained consciousness and remains in hospital on life support having ongoing supportive care; the patient is not expected to make a full recovery.

The investigation has identified the following lessons from this incident:

- The investigation highlighted that there is fragmented practice across the Trust with regard to harmonisation of equipment carried and responded with on frontline ambulances. There needs to be a standard level of equipment responded with for every patient contact.



- The Carry Sheet is to be utilised in extreme circumstances, but this is being used in areas of the Trust in preference of safer equipment, such as the scoop and rescue board. This has the potential to compromise patient and staff safety.
- In certain areas crews are being tasked with emergency calls within minutes of booking 'trolley clear' at hospital. This does not allow appropriate time for clinicians to discharge their duty of care with regard to adequate patient care record completion. Similarly the investigation highlighted that HEOC requested crew's availability before booking clear from the current call, which further impacts the standard of patient care record completion and quality of handover.

The Investigating Officers has made the following recommendations:

1. The Trust should develop and implement a mechanism to minimise skill fade in managers and clinical staff not routinely patient facing. This is vital in terms of ensuring competency and capability when these staff are required to respond.
2. The National Early Warning Score (NEWS) to be implemented throughout the trust to support staff in patient assessment. This is a recognised method of a 'track & trigger' scoring system. It allows for standardising the assessment of acute-illness severity and facilitates standardisation of a national unified approach towards patient safety. NEWS is a recommended by Royal College of Physicians'. This will assist in the mitigation of potential skill fade for management of high risk patients.
3. The publication of a Trust clinical update; highlighting best Manual Handling practice for patients who are clinically unwell. This should highlight the limitations and risks to patients and staff when using a carry sheet. This should also feature as part of next year's Professional Update for all clinical staff.
4. The publication of a Trust clinical instruction highlighting best practice when administering the drug Diazemuls. This should include the titration of the drug over the specified time and highlight the importance of and reasons why the drug should not be diluted.
5. Update the Trust Clinical Manual to include the limitations and risks to patients and staff when using a carry sheet.
6. Trust wide implementation of the recognised Trust's standard response bag to be issued to all frontline resources, this should be kitted and formatted against the Trust standard loading list.
7. The removal of all personal response bags from all frontline resources
8. Safe Walkabout procedure to incorporate the identification correct equipment against the trust recognised load list for all frontline resources.
9. The publication of a Trust clinical instruction indicating the minimal responding equipment that should be taken to every patient contact, this should include a Trust recognised response bag and a defibrillator and/or defibrillator monitor.



10. Consideration that the recognised assessment and treatment for a patient suffering Status Epilepticus to be included for Trust wide learning on next year's Professional Update for all clinical staff.
11. For all clinicians to have an understanding of the ECA scope of practice which include ECA red flags and limitations of practice. This should be delivered through incorporation within Induction, Module 7, and PU.
12. Quality Assurance process to be incorporated across all counties for delivery of Professional Update (PU); this should include assessors from out of area to ensure the harmonisation and standardisation of the PU process in order to ensure patient safety.
13. The development of a crew resource management (CRM) educational programme for all staff to support the delivery of cohesive working practices which encompasses a wide range of knowledge, skills, and attitudes including communications, situational awareness, problem solving, decision making, and teamwork. CRM allows for expected challenging from all grades in order to promote patient safety.
14. Post ROSC management guidelines should be expanded to include that where resources allow, two clinicians should be in the back of an ambulance delivering care whilst travelling to hospital for ROSC patients. This should be included in the Clinical Manual
15. This incident should be escalated to the Academy of International Dispatch for a review of the AMPDS Post-Dispatch Instructions (PAI) for card '12' fitting. Current advice to the caller is not to touch the patient whilst fitting and roll on their side to protect the airway once active fitting has stopped however protection of the airway could be instigated by rolling the patient onto their side whilst fitting.

2. Main Report

2.1 Concise description of the incident

A 999 call was placed at 03:27:08 to the East of England Ambulance Service NHS Trust (EEAST) on the 8th September by Mrs 'Z' for her 30 year old husband who was described as 'fitting'. The call was triaged by the call handler under card '12' 'convulsions/fitting' in line with AMPDS/PROQA certificated triage tool.

At 03:28:31 the call was categorised as an R1 call (life threatening and required an eight minute response). This call and relevant CAD details are included as Appendix 3:1 CN

At 03:27:08 the dispatcher in HEOC allocated the nearest resource which was an EEAST paramedic 'Duty Operations Manager' (clinician 'A') working as a solo on a Rapid Response Vehicle (RRV), the RRV is shown to be en-route at 03:28:32 and on scene at the patients address at 03:32:41 resulting in a 5 minute 33 second response.

At 03:29:09 the call handler in HEOC records the patient's respiratory rate on the CAD as 47 breaths per minute; this would be considered out of the normal respiratory rate for an adult and would require medical intervention. (Appendix 3:1 CN)

HEOC dispatched back-up in the form of DSA (call sign BA311) transportable resource staffed by two Emergency Care Assistants (ECA'S) (clinicians 'B' & 'C') the call was passed



at 03:30:04, the DSA was en-route at 03:30:18 and on scene at 03:35:29 with an overall response time of 5 minutes and 25 seconds. (Appendix 3:1 CN)

On arrival at the patient's address clinician 'A' was met the wife of the patient, she informed clinician 'A' that her husband was upstairs and had had approximately 3 fits over the last hour. Clinician 'A' also confirmed that he took his personal issue response bag, drug bag and oxygen with him to the patient, no monitoring or defibrillator was taken into the patients house by clinician 'A' on his arrival.

Clinician 'A' confirms on entering one of the bedrooms he observed that the patient was lying supine on the bed and appeared to be rigid with laboured breathing at a rate of 15-18 breaths per minute. Clinician 'A' confirmed that he applied oxygen via a non-rebreathing mask, recorded a radial pulse of 90 beats per minute and attempted to look for IV access. (Appendix 2:2 CA)

The Patient Care Record (PCR) does not evidence any form of manual airway manoeuvres. Following interviews with the clinicians it was identified that airway adjuncts were not used until the patient's condition deteriorated further. No monitoring was applied to ascertain the patient's oxygen saturations (Appendices 2:1 CN & 2:2 CA) The treatment as per the JRCALC guidelines for a convulsing patient are described in appendix 5:3 CA.

Approximately 3 minutes later the DSA arrived on scene and the crew were directed upstairs to the patient. Both clinicians 'B & C' observed a male patient supine on the bed and reported that he was twitching. Clinician 'B' held the patient's arm down to assist in placement of a cannula. (Appendices 1:2 CB, 1:3 CC & 2:1 CN)

Clinician 'C' entered the bedroom and observed the patient's respiratory rate at 8-10 breaths per minute, which he highlighted to all clinicians in the room. (Appendices 1:3 CC & 2:1 CN)

Clinician 'A' reported that the patient's initial respiratory rate was 16-18 breaths per minute (Appendices 1:1 CA & 2:2 CA)

Clinician 'A' successfully sited the IV and instructed clinician 'B' to draw up Diazemuls (10 mg in 2ml) with Sodium Chloride 8ml (NaCl) in a 10 ml syringe. This is out of the scope of practice for an ECA; however clinician 'B' did as instructed by the Paramedic. Both clinicians 'A & B' checked the drugs with one another and clinician 'A' instructed clinician 'B' to administer the drug.

Clinician 'A' states that he instructed clinician 'B' to administer 5ml (equates to 5mg dose of Diazemuls) of the mixed solution over 1-2 minutes through the IV cannula, with the rationale that she would be able to notice the difference between giving an IM versus an IV drug; this action is out of the scope of practice for an ECA. (Appendix 1:1 CA)

The administration of Diazemuls is recorded on the patient care record (PCR) at 03:42; along with a 20ml Sodium Chloride flush at 03:43. The PCR does not state the dosage for either of the drug administered. (Appendix 4:1PR)

Contradictory to clinician 'A's version of events clinician 'B' states that she was instructed by clinician 'A' to give the full 10mgs of Diazemuls (10mls) over 5-10 seconds (Appendices 1:2 CB & 2:1 CN)



Following IV Diazemuls administration clinician 'A' stated that he gave the patient time to react to the drug; however approximately 2 minutes after the drug administration the patient had another fit and he therefore instructed clinician 'B' to administer the remaining 5mg (5mls) of Diazemuls. (Appendix 2:2 CA)

Clinician 'C' noticed that following Diazemuls administration the patient's respiratory rate dropped to 6 per minute, which he duly reported.

Clinician 'A' intrusted clinician 'C' to prepare for extrication. (Appendix 2:1 CN)

Clinician 'A' reported that he noticed following administration of IV Diazemuls that the patient's respiratory rate had reduced to 10-12 breaths per minute. He states that this point he considered assisting the patient's ventilation and then he noticed that the patient had suddenly stopped breathing. He also confirmed that Clinicians 'B & C' also noticed that the patient stopped breathing at the same time. He then felt for a Carotid pulse which was found to be weak; then he lost the pulse and instructed the crew to transfer the patient to the floor and commence CPR. (Appendix 1:1 CA)

Clinician 'C' reports that he went down to the ambulance to prepare the equipment for extrication, which took approximately 4-5 minutes.

When clinician 'C' returned he observed that patient was making no respiratory effort. Clinician 'A' was observed facing away from the patient toward his legs doing something with the IV. Clinician 'C' reports that it was obvious that no one had noticed that the patient had stopped breathing. (Appendix 2:1 CN)

Clinician 'B' reports that, she heard clinician 'C' state that the patient was not breathing, clinician 'B' placed her hand on the patient's chest and confirmed that there was no respiratory effort; this was reported to clinician 'A' who attempted some cardiac compressions while the patient was on the bed. Clinician 'B' instructed clinician 'C' to bring the Zoll defibrillator as it had not been initially been brought into the house during the first patient contact, at this point the patient was removed from the bed and onto the floor in order to commence CPR. (Appendix 1:2 CB & 2:1 CN) Appendix 5:1 AR demonstrates the ALS treatment as per the JRCALC guidelines.

The patient care record (PCR) records RA (respiratory arrest) at 03:47 and CA (cardiac arrest) at 03:50. (Appendix 4:1 PR)

Clinician 'A' states that when the Zoll defibrillator arrived he asked clinician 'C' put on chest pads; however they were found to be faulty and did not give a reading. (The faulty equipment was not isolated or reported through the Trust's Datix system). Clinician 'A' then instructed clinician 'C' to apply the 4 lead monitoring to the patient in order to determine the cardiac rhythm (Appendix 1:1 CA)

Clinician 'C' states that when he came back with the Zoll defibrillator he observed that no ventilations were being undertaken, he handed the defibrillator pads to clinician 'A' in order for them to be attached to the patient, at which point clinician 'B' informed clinician 'A' that he had put the pads on in the wrong position (Appendix 1:2 CB)

The ECG rhythm showed that the patient was in aystole (flat-line, no cardiac activity). clinician 'C' then looked for a Bag-Valve-Mask (BVM) in clinician 'A' response bag, but was unable to find one, he then went back down to the ambulance retrieve one. Clinician 'C' returned and started providing ventilations to the patient. (Appendix 2:1 CN)



IV Adrenaline was administered by clinician 'B' on clinician 'A's' instructions. The IV Adrenaline was recorded on patient care record (PCR) at 03:50; however the actual dosage is not specified on the PCR (Appendix 4:1 PR)

IV fluids believed to be Sodium Chloride but recorded on the PCR as 'Hartmans' was also administered and recorded on the PCR at 05:54 (this would have been 1.5 hours after arrival at hospital). The administration timing may have been recorded in error. (Appendix 4:1 PR)

Both of the above drugs were administered by clinician 'B' under clinician 'A's' instruction, this practice is outside the scope of practice for an ECA.

Clinician 'A' asked clinician 'B' to draw up two vials of Narcan; clinician 'A' rationale for this was that he thought that the patient had not recovered from the prolonged fitting and thought the fitting may be caused by something else underlying. (Appendix 2:2 CA)

Up to and during the cardiac arrest, no airway adjuncts were used to ensure a patent airway for the patient, an OPA (airway adjunct), suction & BVM were not in the responder bag and all had to be retrieved from the ambulance by clinician 'C'. (Appendices 2:1 CN & 2:2 CA)

Following approximately 1-2 minutes of CPR electrical activity was observed on the Zoll monitor, the patient was observed to make some respiratory effort and the patient's ventilations were then assisted by clinician 'A'.

The patient was observed to make gurgling sounds and clinician 'A' was observed by clinician 'B' to turn the patient on their side and use backslaps on the patient, no fluid was observed to exit the airway as a result of this manoeuvre. The normal procedure would be to use direct suctioning whilst placing the patient in the optimal position to allow for drainage; however a suction unit was not at the patient's side at this time. (Appendix 2:1 CN)

Clinician 'A' stated during the interview that he did suction the patient's airway but very little fluid was expelled. (Appendix 2:2 CA)

Clinician 'C' asked clinician 'A' if he required an Oropharyngeal Airway (OPA) he was told that there was one in his responder bag, clinician 'C' was unable to locate one a he therefore had to go to the ambulance to retrieve one. (Appendix 2:1 CN)

Clinician 'A' had been on several other emergencies during his shift prior to CAD and stated that he may not have had the opportunity to restock some of the equipment required (Appendix 2:2 CA)

Once the patient's respiratory rate increased, assisted ventilations were ceased and the patient was placed on high flow oxygen via a non-rebreathing mask, the patient remained unconscious following a return of spontaneous circulation (ROSC) which was recorded at 03:58 on the PCR. Clinician 'A' reports that the patient's oxygen saturation was being maintained at 90% on high flow oxygen; the interview notes inform that clinician 'A' was happy with the oxygen saturations. To improve them in this situation oxygen saturations could be increased by assisting the patient's ventilations (Appendices 2:2 CA & 5:2 RC)



An extrication plan was discussed between all the clinicians present and clinician 'C' was tasked with arranging the equipment necessary to extricate the patient from the upstairs bedroom.

Following a cardiac arrest the standard operation procedure is not to move the patient for 10 minutes as the patient remains critically unwell. The post ROSC treatment is re-assessment of the primary survey and necessary interventions, recording of the base line observations and to perform a 12 lead ECG. The post ROSC treatment was not completed prior to moving the patient into the ambulance. (Appendix 5:2 RC)

The patient was removed from all monitoring, but kept on high flow oxygen and carried from the bedroom and onto the ambulance trolley which had been positioned by the front door, using a carry sheet by clinicians 'A & B' as a two person technique. (Appendices 1:1 CA, 1:2 CB & 1:3 CC)

The use of a carry sheet is not a recognised item of manual handling equipment endorsed by the Trust for the removal of unconscious patients and should only be used on rare and extreme cases where other methods have been assessed as not suitable.

The removal of the patient in a carry sheet resulted in the unconscious patient being carried head first down an internal stairway; cocooned within a carry sheet. All monitoring equipment was removed during the procedure, it would have been extremely difficult to protect and maintain an adequate airway and ventilator support of the unconscious patient during this manoeuvre.

There is also potential a risk of injury to those involved lifting, due to the nature of the carry.

Once the patient was transferred onto the ambulance, the monitoring was put back on to the patient whilst additional patient details were gained from the patient's wife.

Clinician 'A' remained in the back of the ambulance whilst clinician 'B' was instructed to drive the ambulance on blue light and sirens, a pre- alert to A/E was made by clinician 'A' whilst en-route to hospital. Clinician 'C' was instructed to drive the RRV into hospital, therefore there was only one clinician was in the back of the ambulance with a patient who was still critically unwell post ROSC.

The ambulance left scene at 04:16:11, which records a total on scene time of 44 minutes, the arrival at hospital is recorded as 04:23:48 which records a scene to hospital time of 7 minutes and 37 seconds.(Appendix 3:1 CN)

Once at hospital the crew were directed into resuscitation bay 1, where clinician 'A' gave a handover to the awaiting hospital staff; the patient pertinent information from the handover was written on a white board above the patient bed.

Clinician 'A' reported that the patient then began to fit again whilst in the presence of the hospital staff (Appendix 1:1CA).

Once the handover was complete, clinician 'A' asked clinician 'C' to obtain a patient care record (PCR) and timings related to the job from the ambulance and start filling it in. The PCR was not fully completed by any of the clinicians prior to leaving the hospital. The patient care record is not of the standard expected of a healthcare professional; it does not clearly identify specific information required against the standard required against the Trust's patient care record policy. (Appendix 4:2 PP)



The CAD records that the DSA became 'trolley clear' at hospital at 04:29:51

At 04:33:01 the DSA crew were contacted by HEOC and tasked to an emergency call, the CAD records a mobile time of 04:41:09

At 04:36:23 clinician 'A' was contacted by HEOC and tasked to an emergency call; in the recording of the taped conversation clinician 'A' states that he will be unavailable for 3-4 minutes as he has 'equipment to sort out'. The mobile time recorded on the CAD for the above emergency is 04:44:35.

At 04:41:32 clinician 'A' contacted HEOC and requested that message be passed to the ECA crew requesting that clinician 'B' complete the patient care record.

At 04:44:51 another crew member (clinician 'X') working on BA311 with clinician 'C' (clinician 'B' finished her shift at 0400 hours) challenged the need for clinician 'C' to complete the PCR as he was not the lead clinician for CAD. (Appendix 7:1 TC)

At 05:25:43 CAD is closed (Appendix 3:1 CN)

2.2 Background and context of incident

The East of England Ambulance Trust was created on 1st July 2006 and covers the six counties which make up the East of England - Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk. The Trust provides a range of services, but is best known for the 999 Emergency Service.

Our diverse area is spread over about 7,500 square miles and contains a mix of rural, coastal and urban areas – from Watford to Wisbech and Cromer to Canvey Island. Our services are tailored to meet the needs of each community's differing environmental and medical needs.

The Trust employs around 4,000 staff and 1,500 volunteers to deal with 929,134 999 calls every year. In addition the Trust handles more than one million non-emergency patient journeys to and from routine hospital appointments.

Duty Operations Manager (DOM)

The DOM is a front-line manager working 24/7 roster and is responsible for a number of sites within a geographical locality. They will be required to maintain management cover (Bronze) at any site across the Trust as the need arises. They are the senior operational officer on duty outside normal workings hours. They will provide pre-hospital care within the scope of a HCPC Registered Paramedic and promote and encourage the highest level of clinical care through leading by example. They will have direct line management of operational staff which include Supervisors, ECP's, Paramedics, EMT's, ECA's and others and manage ambulance locations within the designated geographical area for all aspects, including for example fleet, estates, equipment etc.



Emergency Care Assistant (ECA)

An ECA will attend cases of sudden illness and respond to urgent, special and planned patient transfer requests, using advanced driving skills under blue light and normal traffic conditions to respond to routine calls as required.

In addition, they will support a team in the provision of high quality and effective clinical and personal care and the transportation of patients, selecting and applying appropriate equipment and skills in line with the scope of practice and associated training.

They will be line managed by Supervisors within a designated geographical area that they have been assigned to.

Status Epilepticus

The patient had been suffering from multiple fits over a period of an hour prior to the 999 call being received. Status Epilepticus (SE) is a medical emergency with a potential for high morbidity and mortality and JRCALC it is defined as a neurological condition resulting in recurrent convulsions lasting more than 30 minutes. (Appendix 5:3 CA)

It is essential that clinicians are able to identify and treat SE promptly and efficiently. Prolonged SE can lead to cardiac dysrhythmia, metabolic disorder, autonomic dysfunction, neurogenic pulmonary oedema, hyperthermia, rhabdomyolysis, and pulmonary depression and aspiration. Permanent neurologic damage can occur with prolonged SE.

Diazemuls are benzodiazepines, and are administered to fitting patients in order to reverse the convulsion. The actions of Diazemuls cause depression of the central nervous system (CNS), anticonvulsant and sedation. It is an emulsion (lipid) and should not be mixed with water, as this causes the drug to coagulate and prevents administration of a specific dose. When administered, the drug should be titrated slowly to ensure the CNS actions are not too great, risking respiratory depression (side effect). JRCALC states the dosage for an adult is initially 10 mgs titrated slowly to response (stopping seizures) with the ability to repeat after 5 minutes to a maximum dose of 20 mg. (Appendix 6:1 CM)

Context and relevant factors

The Trust HEOC silver notes records that at 01:29:10 all of the Trust's control rooms (HEOC), were experiencing significant demand in 999 calls and urgent requests and all had escalated to Demand Management Plan (DMP) level 1 as they had limited resources available.

Bedford HEOC however records that at 02:26:45 'Beds HEOC off DMP' this is approximately 59 minutes before the time of call for CAD A0809130390

The HEOC Duty Manager recorded in Silver Notes the outstanding

workload: **Bedford HEOC Silver notes at report at 03:11:08**

Regional pending:

- 1 x G1 (longest 1 hour 10 min old)
- 4 x G2 (longest 2 hours 10 min old)
- 6 x G4 (longest 2 hours old)
- 2 x Urgent calls, both in time
- 9 x Psiam



Norwich & Chelmsford DMP1 remain

Ambulance Recourses for Luton locality 8th September (Night Shift)

Fast Response Vehicles

5 x Paramedic

1 x EMT

Double staffed Ambulances

1 x Paramedic/ECA

2 x EMT/ECA

1 x ECA/ECA

2.3 Terms of reference

The terms of reference set by the commissioning officer are:

Review the whether the clinician's action caused or had the potential to cause significant harm to the patient, this should include the following:

- Review the care provided against the expected care clinicians should provide in this case. This should include the availability and appropriate use of equipment in order for the crew to provide optimal patient care.
- To review the manual handling process used for patient extraction
- Identify any system failings that have contributed to the actions of the clinicians involved
- Determine learning on all levels to prevent a recurrence

2.4 Investigation Lead and Team

This investigation was led by:

██████████, Assistant General Manager West Suffolk

██████████, Clinical Operations Manager East Suffolk

2.5 Scope of investigation

This was a comprehensive investigation initiated following the declaration of a Serious Incident by the East of England Ambulance Service NHS Trust. This was graded as a Level 1 Incident in conjunction with the Lead Clinical Commissioning Group.

The investigation is concerned with the events of 8th September 2013 from the time of call recorded as 03:28:17 through to CAD event closure, recorded as 05:25:34

2.6 Investigation type, process and methods used

This was a single agency investigation, which involved the retrieval of statements and interviews from those involved in the attendance of CAD.



This investigation was for a single event and the information sources are listed below:

- Statements from all staff involved
- Clinical Variation level I Interviews from all staff involved
- Computer Aided Dispatch system notes
- Call recordings and transcripts
- Unit hour production (resourcing levels) information
- Duty Silver Notes 8th September 2013
- GRS rostering 8th September 2013
- Patient Care Record
- Interview with patient's relatives, on 30th September 2013
- Clinical Quality Matters September 2012
- A copy of the A/E casualty card was formally requested from the hospital but at the time of report writing it remains unavailable.

Ambulance Service Trust Policies reviewed:

- Manual Handling Policy V4.0
- Being Open Policy V3.0
- Management of Serious Incidents Policy V1.0
- Investigation Guidance: (Investigation of incidents, complaints and claims) V3.0
- Management of Incidents Policy V4.0
- Variations in Clinical Practice & Clinical Competence Policy 2010
- Policy for the Management and Implementation of Best Practice Guidance V2.0
- PCR policy V1.0
- Medicine Management Policy V3.0
- ECA Scope of Practice V3.0
- EEAST vehicle loading list
- EEAST Clinical Manual 2013 V1.0
- JRCALC Guidelines 2013

2.7 Time Line Of Events

The timeline of events are below:

Time.	Event or action CAD
03:27:08	Call received and event clock started. allocated emergency call CAD.
03:28:39	Dispatch Process confirms pt. is a male, aged 30, had a fit, he had had more than one fit in a row, the caller is with the patient and he is not a diabetic, he is breathing but not conscious (ProQA).
03:28:30	Dispatch enters notes "pt. is a 30 year old male, who is unconscious and breathing".
03:28:32	acknowledged emergency call and went mobile.
03:28:34	Emergency call coded as RED1 response 12-Convulsions.
03:28:39	Dispatch enters notes "pt. is a 30 year old male, who is unconscious and breathing. CONTINUOUS or MULTIPLE fitting (Epileptic or previous Hx of fitting)".
03:29:09	Dispatch confirms that pt. is now breathing, rate is 47 breaths per minute and the twitching has stopped.

03:30:04	allocated emergency call.
03:30:16	acknowledged emergency call and went mobile.
03:32:41	arrives on scene.
03:33:27	Dispatch Process confirms again that pt. is now breathing, rate is 47 breaths per minute and the twitching has stopped.
03:35:29	arrives on scene.
03:41:00	PCR states vital signs HR 90bpm & regular, BP 148/92, RR 10, SPO2 90% on air, AVPU = U, GSC = E1, V1, M2, pupils dilated, ECG NSR.
03:42:00	PCR states Diazemuls administered (dosage not recorded).
03:43:00	PCR states 20ml flush administered.
03:47:00	PCR states RA (believed to mean Respiratory arrest) occurred.
03:50:00	PCR states CA (believed to mean cardiac arrest) occurred. Vital signs recorded HR nil, BP, 75/50, ECG asystole, RR nil, SPO2 81% on oxygen, AVPU=U, GCS = E1, V1, M1, pupils dilated.
03:52:00	PCR states Adrenaline administered (dosage not recorded).
03:53:00	PCR states 20ml flush administered.
03:54:00	PCR states that Hartmans administered (dosage not recorded) Time on PCR is 05:54, believed to be 03:54.
03:58:00	PCR records ROSC.
04:00:00	PCR states breathing started post ROSC.
04:04:00	PCR states vital signs HR 106 reg, BP, 122/72, ECG NSR, RR 12, SPO2 88% on oxygen, AVPU=U, GSC= E1, V1, M1, pupils dilated.
04:16:11	departs scene.
04:17:58	Speech request from (Clinician C informing HEOC that Clinician A is travelling in with pt. and Clinician B and that Clinician C is following in)
04:23:48	arrives at hospital (Luton & Dunstable A&E).
04:29:51	completed patient handover (trolley clear).
04:33:01	(crewed by Clinician C and another crew member as Clinician B was clocked off as past finish time of 0400) allocated further emergency call by HEOC CAD.
04:36:23	Dispatch radio Clinician A as to availability to attend a further emergency call CADA. Clinician A advises that there will be a delay of 3-4 minutes whilst equipment is tidied.
04:37:35	Dispatch allocates emergency call CAD to .
04:41:32	Clinician A passes message through Dispatch to ask Clinician B to complete paperwork from CAD .
04:41:49	acknowledge and go mobile on further emergency call CAD.
04:44:08	Dispatch contact (crewed by Clinician C and another crew member; as Clinician B was clocked off duty due to finishing time of 0400) passing message from Clinician A to complete paperwork from CAD. [REDACTED] had already left hospital and tasked on another emergency call CAD



04:44:35	acknowledges emergency call A 0809130472 and goes mobile.
04:44:51	other crew member challenges the need for Clinician C to complete paperwork as not lead clinician and that this is common practice of Clinician A not to complete paperwork.
05:25:43	CAD event closed.

2.8 Involvement of patient / relatives

The Investigation Manager wrote to the patient's wife under the Being Open Policy requesting a meeting to explain the events of CAD, and to gather any pertinent information.

A meeting took place with the patient's wife and family on the 30th September 2013 at Luton and Dunstable Hospital where the incident was discussed. (Appendix 2:3 FN).

At the time of meeting Mrs 'Z' confirmed that her husband was now off the Intensive Care Unit (ITU) and being cared for on the High Dependency Unit (HDU). The current status of the patient was that he had suffered neurological insult, was still on life support and for palliative care only. The family are still hopeful of improvement and possible recovery.

A follow up meeting will take place upon completion of the report to explain the outcome of the investigation and share the learning that has occurred with the family

2.9 Involvement and support of staff concerned

Following the emergency incident Clinician 'B' raised concerns around the treatment provided to the patient through the correct reporting channel (DATIX system) which immediately highlighted a potential serious incident had occurred.

The Trust's Patient Safety Manager instructed that an investigation was required in order to review whether the administration of Diazemuls contributed to the Cardiac Arrest.

All operational clinicians who attended the call were approached and offered support by their senior line managers, in line with Trust procedures and protocols.

As part of the investigation process, statements have been taken from key staff involved and are included as appendices.

During the Stage 1 Clinical Debriefs all clinicians were offered support in line with policy and all clinicians made reference that the process was positive and it was hoped to use the findings from the debrief to help establish the rationale behind the decision making and to implement any learning and actions required.

Clinician 'A' is currently being supported and investigated under the Trust's Disciplinary (Managing Performance) Policy in relation to the incident. The on-going Disciplinary Investigation does not form part of this report.

2.10 Notable practice

It is important to recognise the actions of Clinician 'B' in correctly raising her concerns through the Trust's recognised reporting system (DATIX) which has led to a serious incident

investigation and escalation to both Trust's commissioners, but more importantly the family of the patient.

2.11 Detection of incident

This incident was raised by clinician 'B' via the Trust's reporting Datix system and reported to the Clinical Operations Manager on the 10th September 2013. This incident was reviewed by the Trust's Patient Safety Manager & Clinical General Manager for South West Sector and immediately escalated as a potential SI; this was reviewed by the Trust's SI panel to action the SI investigation.

Interim actions taken

Clinician 'A' was advised to self-refer to the HCPC. As an interim measure the clinician was withdrawn from clinical practice pending completion of the Trust's investigation.

All staff were interviewed by the investigating officers and offered staff support during the interview process.

The current practice of use of carry sheets for moving of patients who are clinically unwell was highlighted to the Trust's Consultant Paramedic for immediate action planning due to perceived risk to patients and staff.

The use of non-standardised responder bags used by clinicians was highlighted to the Trust Consultant Paramedic for immediate action planning.

2.12 Care and service delivery problems

The care delivery problems have been identified and are outlined in the contributory factors and root cause analysis sections of this report. The care delivery problems combined to result in an inability to provide an acceptable level of care against the standard expected.

The investigation has identified a number of system and service delivery problems relating to ensuring that members of staff not permanently delivering clinical care remain up to date, and competent to practice. This issue would relate to Frontline managers but also any staff within the organisation whom could be expected to respond to 999 calls. These service delivery problems are outlined in the contributory factors and root cause sections of this report.

2.13 Contributory Factors

In order to establish all contributory factors and root causes, the Investigating Officers completed fishbone diagram analysis into the care delivery problems identified. These are attached in full:



Problem
or issue
(CDP/SDP)

CDP/SDP
Assessment &
Treatment of a
Seizure.

Team factors:
Adequate Airway
Management not
introduced until respiratory
arrest identified.
Skill Mix of crew (double ECA)
limited interventions and
actions.
No consideration to call for
clinical advice or back-up.
Ineffective decision making
and scene management
Crew did not take any
equipment into scene on
arrival

Communication factors:
ECA crew did not
challenge instruction from
Paramedic as
previous communication
issues between

Task factors:
ECAs working
outside scope of
practice.

Individual (staff) factors:
Airway was not protected
at all times.
No manual airway
manoeuvres
demonstrated, delay in
airway suction, and
adjuncts.
Delay in monitoring (ECG &
capnography).
Lack of MH LITE
assessment and use of
appropriate extrication
aids.
Drug given incorrectly
(mixed plus length of

Patient factors:
Patient suffering
multiple seizures
>60 minutes (status
epilepticus).
Hypoxic damage
likely

Organisational + strategic factors:
Level 1 responding not
protected (management tasks
continue).
Incorrect skill mix on the shift
(42/58% split) due to ST
sickness.

Working condition factors:
Unconscious male on first floor of
property requiring extrication.
DOM was responding as a level 1
to all calls. However had manager
tasks to complete (timesheets,
hospital delays) also – increasing
task load, multiple priorities.
Short term sickness had affected
skill mix of available crews (less
qualified skill than was planned).

Equipment resources:
No standardised
Response bags
available.
Personal Response
Bag not
kitted/restocked (lack
of resuscitation
equipment).
No monitoring with
patient at time of
arrival of first
response (not taken
in)

Education + Training Factors:
Incomplete PDR, PU and QA
history.
Lack of underpinning
knowledge of primary survey,
patient assessment, post ROSC
treatment.
Lack of capnography
training/awareness.
No training provided in how to use
a carry sheet correctly.
No awareness of
pharmacology and mixing
emulsions

An overview of the main contributory factors are as follows:

1. Clinician B was tasked by Clinician A to administer Diazemuls to the patient. Clinician B holds the grade of Emergency Care Assistant and is not authorised to handle or administer Diazemuls in relation to EEAST Medicine Management Policy and ECA Scope of Practice.
2. None of the attending clinicians took monitoring equipment/defibrillator to the patient upon arrival. The monitor/defibrillator was collected from the ambulance by clinician 'C' once the patient was recognised in cardiac arrest. The Zoll monitor/defibrillator provides monitoring of heart rhythm with the ability to deliver a shock if required. The monitor has the ability to record observations such as; NIBP, SPO2 and ETO2/Ventilator rate, all of which are necessary in assessing an unconscious patient.
3. The solo clinician's personal issue response bag was not stocked with the appropriate equipment for managing a respiratory patient due to a lack of recognised stock list for personal issue bags.
4. The investigation has uncovered that despite a ROSC on scene, no post ROSC management was applied by the attending clinicians before considering extrication. Post ROSC training is included in current PU in order to highlight the importance of stabilising and continuous monitoring of a time critical patient who by the nature of a ROSC remains critically unstable.
5. Unsafe manual handling manoeuvre was applied in extricating the time critical patient from the property to the ambulance. This resulted in the unconscious patient being slid head first down an internal stairway; cocooned within a carry sheet. All monitoring equipment was removed during the procedure and it would have been extremely difficult to protect and maintain an adequate airway and ventilator support of the unconscious patient during this manoeuvre. The manoeuvre was operated by clinician 'A' & 'B'. The carry sheet extrication method appears within the Trust's Clinical Manual and is only to be used in a snatch rescue situation. In addition the manufacture highlights a minimum of 8 persons to complete the manoeuvre. The Trust does not advocate the use of a carry sheet in the management of an unconscious patient but does provide both a scoop stretcher and long board as alternative methods for safer extrication. The risks to patients are identified are:
 - The inability to monitor as the patient can be covered by the material of the carry sheet
 - The inability to effectively manage the airway and potential for airway occludes through hyperflexion,
 - The potential for patient injury being caused when sliding to stretcher or placing on the floor.
6. Clinicians 'B' and 'C' felt unable to challenge the leadership actions of clinician 'A' due to his persona towards them as the lead clinician and a Duty Operations manager.

2.14 Root Cause Analysis

The investigation has identified three main care delivery issues:

1. Inadequate scene and patient management.

- Standard primary survey was not carried out and so steps of assessment and treatment were completed out of sync. This included intra-venous access being obtained before securing airway adequately.
- There was a lack of proactive airway management, with no manual airway manoeuvres or suction applied until cardiorespiratory arrest was recognised
- The investigation has identified a lack of awareness of what constitutes a primary survey, as well as not understanding appropriate pharmacological and respiratory management of a fitting patient. The member of staff is a long standing qualified clinician and the investigation has recognised that 'skill fade' has resulted in the standard of care given falling below that which is expected.
- **There is therefore a service delivery problem in that skill fade in managers and clinical staff not routinely patient facing pose a potential clinical risk. PU is insufficient to mitigate this risk.**

2. Incorrect administration of medication

- It is unclear whether the cumulative dose of 10 mg was given as one bolus or two 5 mg boluses.
- Diazemuls was mixed with water due to a lack of understanding of the pharmacology of an emulsion. As a result it was not possible for the clinicians to control the administration of the drug.
- The Trust published a Clinical Quality Matters Bulletin in September 2012 outlining why Diazemuls should not be mixed with water. A clinical instruction was not issued.
- **The investigation has therefore demonstrated a service delivery issue through a lack of education of staff around pharmacology.**

3. Lack of equipment on scene

- The standard Trust vehicle response bag was not issued to either attending unit. This resulted in Trust-issued individual response bags being used, which are stocked by personal preference. The individual's response bag did not contain basic airway equipment (OP airways, BVM, hand-held suction), all of which is included in the standard response bag.
- Repeated journeys to the ambulance were required to collect airway adjuncts leading to a delay in securing the airway adequately.
- **The investigation has therefore identified a service delivery problem through a failure of issuing vehicle response bags in the locality.**

2.15 Lessons learnt.



- The investigation highlighted that there is fragmented practice across the Trust with regard to harmonisation of equipment carried and responded with on frontline ambulances. There needs to be a standard level of equipment responded with for every patient contact.
- The Carry Sheet is to be utilised in extreme circumstances, but this is being used in areas of the Trust in preference of safer equipment, such as the scoop and rescue board. This has the potential to compromise patient and staff safety.
- In certain areas crews are being tasked with emergency calls within minutes of booking 'trolley clear' at hospital. This does not allow appropriate time for clinicians to discharge their duty of care with regard to adequate patient care record completion. Similarly the investigation highlighted that HEOC request crew's availability before booking clear from the current call, which further impacts the standard of patient care record completion and quality of handover.

2.16 Recommendations

1. The Trust should develop and implement a mechanism to minimise skill fade in managers and clinical staff not routinely patient facing. This is vital in terms of ensuring competency and capability when these staff are required to respond.
2. The National Early Warning Score (NEWS) to be implemented throughout the trust to support staff in patient assessment. This is a recognised method of a 'track & trigger' scoring system. It allows for standardising the assessment of acute-illness severity and facilitates standardisation of a national unified approach towards patient safety. NEWS is a recommended by Royal College of Physicians'. This will assist in the mitigation of potential skill fade for management of high risk patients.
3. The publication of a Trust clinical update; highlighting best Manual Handling practice for patients who are clinically unwell. This should highlight the limitations and risks to patients and staff when using a carry sheet. This should also feature as part of next year's Professional Update for all clinical staff.
4. The publication of a Trust clinical instruction highlighting best practice when administering the drug Diazemuls. This should include the titration of the drug over the specified time and highlight the importance of and reasons why the drug should not be diluted.
5. Update the Trust Clinical Manual to include the limitations and risks to patients and staff when using a carry sheet.
6. Trust wide implementation of the recognised Trust's standard response bag to be issued to all frontline resources, this should be kitted and formatted against the Trust standard loading list.
7. The removal of all personal response bags from all frontline resources
8. Safe Walkabout procedure to incorporate the identification correct equipment against the trust recognised load list for all frontline resources.



9. The publication of a Trust clinical instruction indicating the minimal responding equipment that should be taken to every patient contact, this should include a Trust recognised response bag and a defibrillator and/or defibrillator monitor.
10. Consideration that the recognised assessment and treatment for a patient suffering Status Epilepticus to be included for Trust wide learning on next year's Professional Update for all clinical staff.
11. For all clinicians to have an understanding of the ECA scope of practice which include ECA red flags and limitations of practice. This should be delivered through incorporation within Induction, Module 7, and PU.
12. Quality Assurance process to be incorporated across all counties for delivery of Professional Update (PU); this should include assessors from out of area to ensure the harmonisation and standardisation of the PU process in order to ensure patient safety.
13. The development of a crew resource management (CRM) educational programme for all staff to support the delivery of cohesive working practices which encompasses a wide range of knowledge, skills, and attitudes including communications, situational awareness, problem solving, decision making, and teamwork. CRM allows for expected challenging from all grades in order to promote patient safety.
14. Post ROSC management guidelines should be expanded to include that where resources allow, two clinicians should be in the back of an ambulance delivering care whilst travelling to hospital for ROSC patients. This should be included in the Clinical Manual
15. This incident should be escalated to the Academy of International Dispatch for a review of the AMPDS Post-Dispatch Instructions (PAI) for card '12' fitting. Current advice to the caller is not to touch the patient whilst fitting and roll on their side to protect the airway once active fitting has stopped however protection of the airway could be instigated by rolling the patient onto their side whilst fitting.

2.17 Arrangements for shared learning

The family will be offered a follow up meeting and a copy of this report in order to explain the circumstances of the incident.

The report will be shared with the Trust's Sector Leads, General Managers and Clinical General Managers and ensure regional learning. Findings will be presented to the SI Panel.

The report will be shared with Commissioners and presented to the Trust Board.

ALS	Advanced Life Support
AMPDS/ PROQA	Advanced Medical Priority Dispatch System – an international triage tool which EEAST uses to categorise calls
Aystole	No recognised cardiac activity - shown as flat-line on an ECG
BLS	Basic Life Support
Cardio- respiratory arrest	cardiopulmonary arrest or circulatory arrest, is the cessation of normal circulation of the blood due to failure of the heart to contract effectively
DSA	Double Staffed Ambulance – this is the conventional ambulance used to convey ill patients to places of definitive care. They are fitted with blue lights and marked accordingly. They will usually have on board two ambulance staff members.
ECA	Emergency Care Assistant - The ECA will attend cases of sudden illness or injury and respond to urgent, special and planned patient transfer requests. The aim is to allow the ECA to support Paramedic & EMT's, in the provision of high quality and effective clinical and personal care and the transportation of patients, selecting and applying appropriate equipment and skills in line with the scope of practice
ECG	Electrocardiogram
EMT	Emergency Medical Technician – a rank within the ambulance similar to that of a paramedic but without the advanced skills such as intravenous drug therapies or advanced airway management. EMTs may work with their paramedic colleagues or alone on one of the Trust's RRVs.
IV	intra-venous access
JRCALC	Joint Royal Colleges Ambulance Liaison Committee - Its role is to provide robust clinical speciality advice to ambulance services. The current set of JRCALC guidelines were published in 2013
OPA	Oropharyngeal Airway is a medical device called an airway adjunct used to maintain a patent (open) airway. It does this by preventing the tongue occluding the hypo-pharynx.
Paramedic	A paramedic is a health care professional responsible for providing medical assistance to patients while they are en route to the hospitals. They are always the first one at the scene of the accident and are responsible for the initial assessment and treatment of a patient's condition. Paramedics are able to use advanced equipment and administer certain drugs in order to treat patients
PU	Professional Update
RRV	Rapid Response Vehicle – the Trust uses specially equipped ambulance cars marked with blue lights to arrive at patients quickly. These will usually only



Supine	have a single staff member on (solo responder) Laying face upwards
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