Welcome to Issue 23 of the Pre-hospital Emergency Services Current Awareness Update.

The aim of this Current Awareness Update is to provide a digest of information supporting evidence based practice in pre-hospital emergency services, focusing upon resources from open access and NHS Evidence journals which are freely available to Ambulance Trust staff, whether or not they have access to a dedicated library service.

In this issue:

- What's New
- Pre-Hospital Care Research Forum Podcasts
- Research & Best Practice
  Each issue provides summaries of a selection of recent research from open access and Athens resources which are relevant to pre-hospital and emergency care.

I hope that you find the Pre-Hospital Emergency Services Current Awareness Update useful.

Feedback

The Emergency Services Current Awareness Update is produced bi-monthly by:

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This Current Awareness Update was commissioned by the National Ambulance Research Steering Group comprising of research leads from ambulance trusts in England, Scotland and Wales and other experts and groups supporting pre-hospital research. The aim of the group is to support the strategic development of ambulance and pre-hospital research whether leading, collaborating in or using research.
What's New?

Violence in England and Wales in 2013: an accident and emergency perspective
Cardiff University
This data was gathered from a scientific sample of 117 emergency departments (EDs), minor injury units (MIUs) and walk-in centres in England and Wales. The report finds that the numbers of people injured in serious violence dropped by 12% in 2013 compared to 2012, with an estimated 234,509 people attending EDs, MIUs and walk-in centres in England and Wales for treatment following violence.


An alternative guide to the urgent and emergency care system in England
‘A&E is often seen as a service in crisis and is the focus of much media and political interest. But A&E is just the tip of the iceberg – the whole urgent and emergency care system is complex, and surrounded by myth and confusion. Our brand new animation gives a whistle-stop tour of how the system fits together and busts some myths about what’s really going on – explaining that the underlying causes go much deeper than just A&E and demand a joined-up response across all services.’
Source: King’s Fund Health Management Bulletin

Animation

Urgent and emergency care mythbusters

The King’s Fund - topic page
www.kingsfund.org.uk/projects/urgent-emergency-care

Ripping of the sticking plaster
Ripping off the sticking plaster is a response from the NHS Confederation to Sir Bruce Keogh's review of urgent and emergency care. It calls for an end to 'sticking plaster solutions' and to shift focus to solutions that will last into the longer term.
Source: NHS Confederation

www.nhsconfed.org/priorities/latestnews/Pages/radical-action-to-build-urgent-emergency-care-services-around-patients-says-NHSCConfed.aspx

The Medical Care Research Unit at the University of Sheffield has worked with the NHS Confederation to assess the evidence base related to the suggested developments in emergency and urgent care set out by NHS England. The following evidence summaries are available to download;

What do we know about demand for Emergency and Urgent Care?

What do we know about why EUC demand has increased?

What do we know about Emergency Department pressures and challenges?

Ripping off the sticking plaster - Whole-system solutions for urgent and emergency care

Whole System Solutions for Emergency and Urgent Care
www.sheffield.ac.uk/scharr/sections/hsr/mcru/reports
The PCRF has produced a range of podcasts which discuss current research affecting emergency medical services. The podcasts aim to review methodology and applicability to pre-hospital care, promote healthy and respectful discussions, and inspire new research.

www.fisdap.net/podcasts/pcrf

The following podcasts were made available in March and April – follow the links to listen and explore.

Improving Over-Triage of Aeromedical Transport in Trauma
This podcast discusses a study which examined the implementation of a Trauma Advisory Committee to perform outreach and education of emergency medical agencies in the use of Aeromedical Transportation.

www.fisdap.net/podcasts/pcrf/improving_overtriage_aeromedical_transport_trauma?t=pcrf

Paramedic Ability to Recognize STEMI on Prehospital ECGs
This podcast discusses a study in which paramedics were given a survey of ECG print outs and asked to identify an ST segment elevation myocardial infarction (STEMI) out of 10 rhythm strips.

www.fisdap.net/podcasts/pcrf/paramedic_ability_recognize_stemi_prehospital_ecgs?t=pcrf

Pediatric Anaphylaxis Management in the Prehospital Setting
This podcast discusses a retrospective study which analysed the management of pediatric anaphylaxis by comparing discharge diagnoses with prehospital patient care reports.

www.fisdap.net/podcasts/pcrf/pediatric_anaphylaxis_management_prehospital_setting?t=pcrf

Prehospital Point-of-Care Testing for Troponin: Are the Results Reliable?
This podcast discusses a study which aimed to demonstrate the viability of using prehospital troponin levels as a diagnostic tool for patient care and transport destination.

www.fisdap.net/podcasts/pcrf/prehospital_point_of_care_testing_troponin_are_results_reliable?t=pcrf

Psychometric Testing of the Jefferson Scale of Empathy with Paramedic Students
This podcast discusses a study which analysed a modified version of the Jefferson Scale of Empathy in Health Professions was given to paramedic students in a large Australian university.

www.fisdap.net/podcasts/pcrf/psychometric_testing_jefferson_scale_empathy_paramedic_students?t=pcrf

Differences in Long Term Mortality after Acute Poisoning
This podcast discusses a study which looked at the differences in long term mortality of acute poisoning patients based on the care they were given in a prehospital, clinical or hospital setting.

www.fisdap.net/podcasts/pcrf/differences_long_term_mortality_after_acute_poisoning?t=pcrf

Pre-Hospital Emergency Services - Current Awareness Update – Issue 23, March – April 2014
**Resuscitation Fluids**
This podcast discusses a review article which analysed the use of fluid resuscitation in both the prehospital and hospital settings.

[www.fisdap.net/podcasts/pcrf/resuscitation_fluids?t=pcrf](www.fisdap.net/podcasts/pcrf/resuscitation_fluids?t=pcrf)

**The Effect of an Ambulance Diversion Ban**
This podcast discusses a study which illustrated the positive effects of a 2009 ban on diversions in Massachusetts hospitals.

[www.fisdap.net/podcasts/pcrf/effect_ambulance_diversion_ban?t=pcrf](www.fisdap.net/podcasts/pcrf/effect_ambulance_diversion_ban?t=pcrf)

**Muscles used for chest compression under static and transportation conditions**
This podcast discusses a Japanese study which detailed the muscle groups used in performing stationary CPR and while in a moving ambulance.

[www.fisdap.net/podcasts/pcrf/muscles_used_chest_compression_under_static_and_transportation_conditions?t=pcrf](www.fisdap.net/podcasts/pcrf/muscles_used_chest_compression_under_static_and_transportation_conditions?t=pcrf)

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**The Language of Research**

Readers of this bulletin will have differing levels of experience of reading and interpreting research. Some of you will be actively involved in research but for those of you who are discovering the prehospital evidence base, the links below provide an insight into the language of research papers.

The first resource, maintained by the University of Oxford, neatly summarises the need for this information:

**Evidence Based Medicine Glossary**
This resource provides links to definitions for the jargon words often used in medicine and the numbers and statistics used to describe it. The glossary includes terms used in epidemiology, in clinical trials, in diagnosis, in statistics, and in health economics.

For many of these terms, a simple description is all that is needed, but for others, a wider discussion may be necessary. In that case, there will be a further link to a page with that wider description and/or definition.

[www.medicine.ox.ac.uk/bandolier/glossary.html](www.medicine.ox.ac.uk/bandolier/glossary.html)

**Cochrane Collaboration Research Glossary**
The Cochrane Collaboration is a global independent network of health practitioners, researchers, patient advocates and others, responding to the challenge of making the vast amounts of evidence generated through research useful for informing decisions about health. The Cochrane website features a more in-depth glossary of research terms.

[www.cochrane.org/glossary](www.cochrane.org/glossary)

You will see some research terms highlighted in the abstracts listed overleaf – this contain links to definitions from online glossaries.
Research & Best Practice

The following research papers have been published, or made available online, in the last couple of months. This is not a comprehensive overview, but represents papers which are freely available in full text, with current internet links provided.

- Papers listed as Open Access @ are freely available in full text from the link provided.

- Papers with links listed as Athens Access @ require you to log in with a free NHS Athens username and password to obtain the full text. These links take you to the abstract initially. To read the whole paper, choose either ‘full text’ or ‘pdf’ from the options on the abstract page. The full text option will present the article as a single webpage, the pdf option will open as a digital copy of the original paper. Selecting either will open a page with the following link for you to enter your Athens username and password;

To create your own Athens username and password, simply visit: https://register.athensams.net/nhs/

The research papers have been arranged by the topic headings below:

- Pre-hospital Services - Development and Quality
- Pre-hospital Practitioners – Professional Development
- Dispatch, Response and Handover
- Helicopter Emergency Medical Services
- Diagnosis, Triage and Intervention
- Drug Treatment
- Airway Management, Resuscitation & CPR

You can find the complete archive of the Pre-Hospital Emergency Services Current Awareness Update at the link below, with thanks to Matt Holland of the North West Ambulance Library and Information Service:

Critical Incident Reporting in the Prehospital Setting

Critical incident reporting can be used to identify typical problems in a particular setting and provide a basis for structured risk management. This German study used a free access internet site to allow prehospital emergency services personnel to report incidents anonymously. Just under 850 reports were submitted over the 7-year study period. An analysis of the information revealed that 82% of the incidents were actually or potentially life-threatening and that only 53% of incidents had no influence on patient outcome. Staff related problems were found to contribute to the most frequent and most severe incident type. The authors comment on the use of incident reporting in identifying system weaknesses.


Athens Access @ http://emj.bmj.com/content/31/5/415.abstract.html?etoc

Dedicated Trauma Desk for Major Trauma Identification

This Scottish study assessed the impact of a dedicated trauma desk on the identification of patients with major trauma and the time taken to dispatch appropriate resources. The trauma desk operated over 18 months. Based in ambulance control and staffed by paramedics it operated from 08:00 to 18:00, 7 days a week. A retrospective review of data for the period the desk was in operation showed having a clinical focusing upon major trauma in the control room resulted in improved critical care activation times (down to a mean time of 6 minutes from 19), a substantial increase in the number of patients receiving life and limb-saving interventions and a considerable reduction in trauma team stand-down rate.


Open Access @ http://ccforum.com/content/pdf/cc13256.pdf

Describing and Predicting Frequent Callers to an Ambulance Service

This analysis of the top 100 frequent callers to the Yorkshire Ambulance Service over a one year period aimed to identify caller characteristics and predict the number of calls made. Just over 7800 calls were made by the frequent callers. Six call codes were associated frequent calls and callers were assigned slower response levels. Specific times of day and year – December to February – had increased call numbers. The authors note that the frequent callers were a ‘heterogenous group that differed from the overall population served’. Detail on the callers is provided and the implications for service delivery and potential for further research discussed.


Athens Access @ http://emj.bmj.com/content/31/5/408.abstract.html?etoc
A National Quality Improvement Collaborative for the Prehospital Care of Myocardial Infarction and Stroke
This study evaluated the effectiveness of implementing a national Quality Improvement Collaborative which aimed to improve the delivery of care bundles for AMI and stroke in all English ambulance services. Changes over time, from January 2010 to February 2012, were analysed with the results showing that the care bundles led to significant increases in performance from 43% to 79% for AMI and 83% to 96% for stroke. Determinants of success included introducing provider prompts, providing individual or team feedback and opportunities for learning and interaction within and across organizations.

Open Access @ www.implementationscience.com/content/9/1/17

NHS 111 – Investigation of Work, Workforce, Technology and Organisational Issues
This study investigated four core features of health-care innovation and change – relating to work, workforce, technology and the organisational context - in relation to the NHS 111 telephone-based service for 24/7 access to urgent care. The authors note that NHS 111 can be seen as a technology-enabled network of different organisations providing different aspects of the service, underpinned by a computer decision support system. The study revealed that the organisational histories and cultures of the different organisations involved in delivering NHS 111 has seen considerable variation evolve in how it is delivered in different areas, some having a greater focus upon rationing and others on a more patient-centred service. The authors discuss their findings regarding the four features they set out to explore.

Open Access @ www.journalslibrary.nihr.ac.uk/__data/assets/pdf_file/0015/111903/FullReport-hsdr02030.pdf

Nursing Competence and Prehospital Care in Severe Traumatic Brain Injury
This retrospective study used data from 2000-2005 (651 patients) and 2006-2009 (256 patients) to examine whether improved nursing competence levels within the ambulance service had made any impact on pre-hospital assessment and interventions in severe traumatic brain-injured patients. The results showed that although there was no significant impact on performed pre-hospital interventions or hospital mortality, the of saturation was measured more frequently, and length of stay in the ICU was significantly less, in the group treated between 2006–2009 possibly showing better assessment of patient need.

Open Access @ www.sjtrem.com/content/pdf/1757-7241-22-20.pdf
Paramedic Involvement in Obstetric Emergencies
This literature review searched for papers from 1991 to 2012 to identify studies which demonstrated the role of paramedics in out-of-hospital obstetric emergencies involving birth before arrival at hospital. Fourteen studies were identified which reported varying attendance rates for paramedics at unplanned births and the complications they encountered, most frequently excessive maternal bleeding or neonatal hypothermia. The authors suggest protocols should be developed for obstetric emergencies and that the lack of studies available highlights a need for further research.


Prehospital ECG E-Transmission in the Scottish Highlands
Where patients are unable to receive primary percutaneous coronary intervention, immediate prehospital thrombolysis is the best alternative. This study in the NHS Highland area of Scotland analysed data from over 2,000 patients to determine their demographics and management and to identify inter-area differences in referral rates to the ECG e-transmission service. The study also explored the views and experiences of key ambulance and GP staff involved. The authors report their study demonstrated that a specialist triage service based on e-transmission of ECGs in patients with suspected STEMI can be implemented in a diverse geographical setting.


Responder Communication for Decontamination in a Mass Chemical Incident
This paper describes an experimental study which examined the effect of three different responder communication strategies on public experiences and behaviour (including public compliance, public anxiety, and co-operative public behaviour) during a mass decontamination field experiment. The three strategies were, briefly:
1) ‘Theory-based communication’: Health-focused explanations about decontamination, and sufficient practical information;
2) ‘Standard practice communication’: No health-focused explanations, sufficient practical information;
3) ‘Brief communication’: No health-focused explanations, insufficient practical information.

The first strategy resulted in a more efficient progression through decontamination, less non-compliance or confusion and a greater perception of responder legitimacy.


Pre-Hospital Emergency Services - Current Awareness Update – Issue 23, March – April 2014
Second-tier Expert Paramedic Response to Out-of-Hospital Cardiac Arrest
This pilot study saw eight paramedics undergo advanced resuscitation training in order to set up a second tier, expert paramedic response to out of hospital cardiac arrest in Edinburgh. Emergency medical dispatch centre dispatchers were instructed to call the second tier paramedics as soon as a possible OHCA call was received. Measurement of call and dispatch timings, quality of cardiopulmonary resuscitation and return-of-spontaneous circulation revealed no impact upon response times but a trend towards improved rate of return-of-spontaneous-circulation – 22.5% compared with 16% nationally. The authors note that establishing a specialist second tier response team, which included case reviews and debriefing, is feasible and has the potential to save lives warranting further research.

Athens Access @ http://emj.bmj.com/content/31/5/405.abstract.html?etoc

Tool for Assessing Preparedness of Medical Facilities for Biological Events
This study German–Israeli collaborative study aimed to develop an evaluation tool for assessing preparedness of medical facilities for biological events. Using Focus Groups, table-top and functional review exercises and Delphi techniques to arrive at expert consensus, a tool with 172 parameters was developed. The authors note that the tool is based on measurable parameters and indicators that can effectively present strengths and weaknesses in managing a response to a public health threat.

Open Access @ www.ncbi.nlm.nih.gov/pmc/articles/PMC3995059/

What do Users Value about the Emergency Ambulance Service?
This qualitative study used semi-structured interviews with a sample of 20 people who had recently used a 999 ambulance in the East Midlands to investigate patient experience and to understand the processes and outcomes important to patients beyond response times. Four main themes emerged: arrival time; receiving correct information and advice; reassurance; and clinician behaviour and conduct. The authors note that it was challenging to engage participants to consider quality indicators beyond response times because they considered these to be abstract.

Open Access @ http://eprints.lincoln.ac.uk/12652/1/SAPCPoQEBEQual050313.pdf
Continuous Professional Competence Paramedics in Ireland
This paper used an online-survey of registered paramedics and advanced paramedics in Ireland to look at attitudes towards the forthcoming Continuous Professional Competence framework for these groups. The survey results demonstrated support for the framework amongst those who completed it, and provided feedback on the relevance of the educational outcomes and activities included, such as practical training scenarios, cardiac re-certification and e-learning. Blended learning, involving evidence of patient contact, team-based learning and practical skills were found to be preferred CPC activities.

Open Access @ www.biomedcentral.com/content/pdf/1472-6920-14-41.pdf

Health Perception, Fatigue and Stress in Paramedics
This study used interviews and questionnaires to investigate the experiences and perceptions of health with a group of 24 nurses, midwives and paramedics in Australia, exploring the relationship between physical health and job satisfaction, and the relationship between health status and stress levels. The findings revealed: a desire to increase physical activity levels; different ideas of physical health from those recommended by government guidelines; views of physical health as important to job satisfaction, but related to stress and fatigue.

Open Access @ www.ncbi.nlm.nih.gov/pmc/articles/PMC3979795/

Paramedic Education in Transition in Australia
The paramedic profession is undergoing transition in terms of scope of practice and a move to full time university-based Bachelor degree education. This paper discusses issues around the transition of graduate paramedics into the workforce that need to be considered by educators.

Open Access @ http://ro.ecu.edu.au/cgi/viewcontent.cgi?article=1432&context=jephc

Student Paramedic Attitudes Towards the Elderly
The study aimed to identify the attitudes of second-year paramedic students at Monash University in Melbourne, towards the elderly. Fifty six students took part and the results showed that while most had a healthy respect towards this population group, preconceived negative ideas were also apparent.

Open Access @ http://ro.ecu.edu.au/cgi/viewcontent.cgi?article=1446&context=jephc

Systems Approach to Learning, Practice and Reflection
This study used a survey to explore how students studying for the Bachelor of Paramedic Science and Bachelor of Sports Science programmes at the University of the Sunshine Coast (Australia) felt about the use of a ‘systems approach’ and its impact on their confidence and capacity to engage in emergency clinical scenarios. The systems approach integrates critical reflection with base-based learning and most students surveyed found their confidence increased.

Open Access @ http://ro.ecu.edu.au/cgi/viewcontent.cgi?article=1407&context=jephc

Pre-Hospital Emergency Services - Current Awareness Update – Issue 23, March – April 2014
Simulation Use in Prehospital Care
This literature review aimed to provide an overview of both quantitative and qualitative research on simulation in prehospital care practice. From international research published between 1984 and 2012, a range of simulation methods were identified, from manikins to virtual reality, with the main prehospital topics including intubation, trauma care, CPR and triage. The opportunities and positive aspects of simulation training as a method are discussed, along with areas of inadequate skills identified in this review, including ventilation and managing burns victims. The authors suggest areas for further research.

Open Access @ www.sjtrem.com/content/pdf/1757-7241-22-22.pdf

Training in Prehospital Ultrasonography
The use of ultrasonography in the prehospital setting is controversial and has been highlighted as one of the five high priority research areas in prehospital medicine. In 2012, physicians from the Helicopter Emergency Medical Services in Central Denmark completed an education programme in Focused Assessed Transthoracic Echocardiography. The course included e-learning, hands-on training and real-time patient examination. This paper presents two cases from the Helicopter Emergency Medical Service after the programme had been completed, where focused ultrasonography significantly contributed to prehospital decision-making.

Open Access @ www.sjtrem.com/content/pdf/1757-7241-22-29.pdf

Trauma Exposure and PTSD in Paramedic Trainees
This study recruited 131 paramedic trainees from a university in South Africa in order to investigate how the type, frequency, and severity of direct trauma exposure linked to psychopathologies including posttraumatic stress symptoms. Risk and resilience factors were examined to build a profile for people at higher occupational risk of developing PTSD. The study found that 94% of the trainees had directly experienced trauma, with 16% meeting PTSD criteria, and that the number of previous trauma exposures, depression, resilience and levels of social support significantly predicted PTSD status with depression having a mediating effect.

Fjeldheim CB, Nöthling J, Pretorius K et al. Trauma exposure, posttraumatic stress disorder and the effect of explanatory variables in paramedic trainees. BMC Emergency Medicine 2014, 14:11
Open Access @ www.biomedcentral.com/content/pdf/1471-227X-14-11.pdf
Clinical Handover in the Emergency Care Pathway

This qualitative study used focus group-based risk analysis sessions to explore the risks associated with handover failure in three NHS emergency care pathways and identify organisational factors impacting on handover quality. 270 handovers between ambulance and the emergency department, and the emergency department and acute medicine were audio-recorded, transcribed and analysed. Organisational factors were explored through interviews with a sample of staff. Resuscitation handovers were found to last between 38 seconds and 4 minutes and major injury handovers for between 30 seconds and 6 minutes. The management of patients across organisational boundaries was an important factor in handover quality. Tensions were flagged up as relating to documentation, verbal communication, responsibility transfer, and differing goals. The authors note that capacity, patient flow, national targets and the quality of handover are intricately related, and should be addressed together.


Open Access @ www.journalslibrary.nihr.ac.uk/__data/assets/pdf_file/0009/113301/FullReport-hsdr02050.pdf

Dynamic Programming for Ambulance Redeployment

This paper considers dynamic programming methods for ambulance redeployment.

With apologies, the language in the abstract for this paper is very technical and I was not able to confidently edit the text to a meaningful, brief description!


Open Access @ www.i-journals.org/ssy/include/getdoc.php?id=1364&article=20&mode=pdf

Nursing Role in Reducing Ambulance Handover Delays

With ever increasing concern over ambulance handover delays this paper looks at the impact of dedicated A&E nurses for ambulance handovers and the effect it can have on ambulance waiting times. It demonstrates that although such roles can bring about reduced waiting times, it also suggests that using this as a sole method to achieve these targets would require unacceptably low staff utilisation.


Athens Access @ http://emj.bmj.com/content/31/5/419.abstract.html?etoc

Service Coverage and Accessibility in Rural and Small Urban Ambulance Systems

This paper proposes using Geographic Information System-based spatial analysis to analyse access to ambulance services by combining the demand-covered-ratio and potential serviceability with the ambulance-covering-ratio. The study found that the proposed model could identify under-covered and overlapped ambulance service coverage to improve service quality, timeliness, and efficiency.


Open Access @ www.mdpi.com/2079-8954/2/1/34/pdf
Simultaneous Dispatch of Ambulance Helicopter and Car
Use of a dispatch system with a medical doctor in pre-hospital care has made rapid progress in Japan. Usually using either a helicopter or a rapid response care, this report analysed 29 cases over one year where doctors were dispatched using both. The average distance of dispatch was 25.6 km. In 9 cases the car was dispatched first and the helicopter added, in 3 cases both were cancelled en route to the scene and in 7 cases the car was cancelled. The authors discuss the difficulty of making a dispatch decision based on often limited initial information and comment upon the complementary role of these two dispatch options.

Open Access @ http://ccforum.com/content/18/S1/P70

Two-tiered Trauma Team Activation System
This study used a retrospective review of data for patients who activated a trauma team over a six month period to evaluate a two-tiered trauma team activation system in operation at Derriford Hospital. An emergency department trauma team (EDTT) is activated in cases of significant trauma; a hospital trauma team (HTT) is activated where physiological abnormalities or specific anatomical injuries coexist with major trauma. The study compared the characteristics, process measures and outcomes between patients treated by the two teams finding the two-tiered system to be efficient and cost-effective. In the discussion of the results, the authors comment that:

“Appropriate passage of prehospital information to the ED is key to the success of this system. In our institution, the ATMIST format is used to convey the necessary information both from the prehospital phase and on patient handover in the resuscitation room. Accurate vital signs, in particular, are necessary if an appropriate response is to be mounted.”

Athens Access @ http://emj.bmj.com/content/early/2014/03/25/emermed-2013-203402.abstract.html?papetoc

Helicopter Emergency Medical Services

Air Versus Ground Transport of Stroke Patients
This prospective controlled observational study was designed to test the hypothesis that helicopter transport would reduce system delay to thrombolytic treatment at the regional stroke centre. For the 330 patients included in the study, 265 transported over ground and 65 by air, significantly shorter time from contact to triaging neurologist to arrival in the regional stroke centre was found when stroke patients were transported by primarily dispatched ground ambulance compared with a secondarily dispatched helicopter.

Athens Access @ http://emj.bmj.com/content/31/4/268.abstract.html?etoc
Drug Treatment

Adrenaline for Out-of-hospital Cardiac Arrest – Is it Safe and Effective?
The British Medical Journal publishes occasional papers under its ‘Practice Uncertainties’ heading. The Uncertainty series of papers highlights areas of practice where evidence is poor or unclear, and where uncertainty remains in management. A recent Practice Uncertainties article addresses the use of adrenaline (epinephrine) has been an integral component of advanced resuscitation since the 1960s.

What is the evidence of uncertainty?
Explore further at the link below;

Athens Access @ http://bmj.com/lookup/doi/10.1136/bmj.g2435?etoc

Methoxyflurane for Acute Pain
The STOP! randomised, double-blind, multicentre, placebo-controlled study was conducted at six sites in the UK, with 300 patients taking part. The aim was to evaluate the short-term efficacy and safety of methoxyflurane for acute pain in patients presenting to an emergency department with minor trauma. The results suggested that methoxyflurane administered via a Penthrox inhaler is an efficacious, safe, and rapid acting analgesic.

Athens Access @ http://emj.bmj.com/content/early/2014/04/17/emjmed-2013-202909.abstract.html?papetoc

In Australia, methoxyflurane is used by ambulance services, the military, first aid officers, in ski-fields and mines, and in the emergency departments (EDs) of several major hospitals, as described in the paper below:

Athens Access @ http://emj.bmj.com/content/28/1/57.abstract

Paramedic-supplied ‘Take Home’ Naloxone
This feasibility study assessed whether paramedic distribution of Take Home’ Naloxone kits to emergency patients who have suffered an overdose would be an acceptable intervention to help to reduce further overdose and deaths. The planned study will be a randomised controlled trial and will invite paramedics based in urban areas of South Wales to take part.

Open Access @ www.ncbi.nlm.nih.gov/pmc/articles/PMC3963087/?report=classic

Pre-Hospital Emergency Services - Current Awareness Update – Issue 23, March – April 2014
Prehospital use of Furosemide in Heart Failure
This multi-centre study reviewed the records of 330 patients who received prehospital furosemide (or had an emergency department diagnosis of heart failure) to evaluate the appropriateness of the use of furosemide in the prehospital setting. Of the 168 patients who had furosemide administered, 58 had no diagnosis of heart failure in the emergency department with 110 having heart failure diagnosed. Heart failure was diagnosed in 162 patients who had not been given the drug. Serious adverse effects were seen in 61 patients – respectively 19%, 23.6% and 14.8%. These figures do not, however, indicate a statistically significant association between furosemide use and adverse events. The authors note that their findings illustrate the challenge of diagnosing heart failure in the prehospital setting.


Athens Access @ http://emj.bmj.com/content/early/2014/04/04/emermed-2013-202874.abstract.html?papetoc

Extrication Time Prediction Tool
This study based in the metropolitan area of the West Midlands Fire Service used an expert group to identify factors that may predict the time taken to extricate a patient from the scene of a motor vehicle collision in order to develop a prediction tool. Factors which had a significant impact on extrication times were: a physical obstruction and patients who were medically or physically trapped. Extrication was shortened if rapid access was available or the car was on its roof.


Athens Access @ http://emj.bmj.com/content/early/2014/04/17/emermed-2013-202864.abstract.html?papetoc

Prehospital 12-Lead ECG in Acute Coronary Syndrome
National myocardial infarction registry data from nearly 300,000 patients admitted to hospital in England and Wales via emergency medical services between 1 January 2005 and 31 December 2009 was analysed in this study to describe of prehospital ECG use and to determine its association with the processes and outcomes of care for patients with ST-elevation myocardial infarction (STEMI) and non-STEMI. The findings provided an overview of the characteristics of patients receiving prehospital ECG and showed the intervention to be associated with processes and outcomes including achieving call to needle time and significantly lower 30-day mortality rates. The authors note their findings demonstrate a survival advantage in STEMI and non-STEMI patients when PHECG was used.


Athens Access @ http://heart.bmj.com/content/early/2014/04/07/heartjnl-2013-304599.full.pdf+html
Prehospital Stroke Diagnosis
This study investigated the accuracy of transcranial color-coded sonography (TCCS) for diagnosing ischemic stroke in a prehospital setting. After an emergency ‘stroke code’ call, paramedics liaised with stroke neurologists with TCCS experience and where stroke was suspected, TCCS examination took place. The results showed the initial diagnoses of stroke to show a 94% specificity and a 48% sensitivity, leading the authors to conclude their study demonstrates the feasibility and high accuracy of this combination of TCCS assessment and neurological examination.

Open Access @ www.criticalultrasoundjournal.com/content/pdf/2036-7902-6-3.pdf

Prehospital Triage Tools for Paediatric Injury
The authors of this paper identified eight existing tools for the prehospital triage of minor and moderately injured children in England through a literature review and a survey of lead trauma clinicians from each of the Strategic Health Authorities. These tools were analysed by using retrospective data from nearly 3,000 patients to assess their sensitivity and specificity. Acceptable sensitivity in terms of under and over triage was demonstrated by the tools from the East Midlands, the North West and the Northern SHAs. All tools reached recommended standards for over-triage, but the majority favoured under-triage.

Athens Access @ http://emj.bmj.com/content/early/2014/04/08/emermed-2013-203251.abstract.html?papetoc

Prehospital Ultrasound in North America
This study used a survey of Emergency Medicine Services directors on the National Association of EMS Physicians mailing list to assess the current use of prehospital ultrasound in North America. From a 30% response rate, a picture of infrequent use of prehospital ultrasound emerged. The commonest current and planned applications were Focused Abdominal Sonography for Trauma (FAST) and assessment of pulseless electrical activity (PEA) arrest. Barriers to implementation were found to be equipment and training costs and limited evidence of its use demonstrating improved morbidity and mortality outcomes.

Open Access @ www.biomedcentral.com/content/pdf/1471-227X-14-6.pdf

Routine Angiography in Survivors of Out-of-hospital Cardiac Arrest
This retrospective review of 78 patients with out-of-hospital cardiac arrest surviving to hospital admission between July 2007 and March 2009 examined risk factors, demographics, treatment times, electrocardiogram, angiographic findings and in-hospital outcomes to assess the effects of routine angiography and revascularization on survival rates. The results showed that patients who had an angiogram were more likely to have AMI as a cause of cardiac arrest and more likely to have survived to discharge.

Open Access @ www.ncbi.nlm.nih.gov/pmc/articles/PMC3944915/

Pre-Hospital Emergency Services - Current Awareness Update – Issue 23, March – April 2014
Telemedicine for Prehospital Diagnosis and Triage in STEMI
This Danish study analysed data for 1061 patients diagnosed tentatively with STEMI in the prehospital setting using telemedicine, to assess the proportion of these diagnoses confirmed on arrival at hospital and to determine the system delay for patients diagnosed prior to hospital arrival and triaged to a primary percutaneous coronary intervention centre. 919 of these patients were directly triaged for PCI and 771 patients had their STEMI diagnosis confirmed. The authors find that using telemedicine to diagnose and triage STEMI patients directly to a catheter laboratory is feasible and their data showed it allowed 89% of patients living up to 95km away to be treated within 2 hours of the emergency call. They note that this study confirms that a recommended system delay <60 min cannot be achieved if the first medical contact is the emergency medical call.

Athens Access @ http://heart.bmj.com/content/early/2014/03/17/heartjnl-2013-304576.abstract.html?papetoc

Therapeutic Hypothermia
The use of therapeutic hypothermia has been of much interest over the past decade, stemming from the publication of two clinical trials in 2002. This editorial discusses the fact that more recent large trials studying induced hypothermia for out of hospital cardiac arrest have shown no evidence to support the intervention

Athens Access @ www.bmj.com/content/348/bmj.g2735?etoc

Airway Management, Resuscitation & CPR
Oxygenation, Ventilation, and Airway Management in Out-of-Hospital Cardiac Arrest
This paper provides a review of recently published evidence which has challenged protocols relating to oxygenation, ventilation, and airway management for out-of-hospital cardiac arrest. The evidence relates to areas including: a change of BLS algorithms from ABC to CAB; passive insufflation of oxygen in the early stages of cardiac arrest; alternatives to tracheal intubation or bag-mask ventilation for prehospital airway management; the impact of hyperoxemia following OHCA; the possible negative impact of chest hyperinflation and positive airway pressure on hemodynamics during resuscitation.

Open Access @ www.ncbi.nlm.nih.gov/pmc/articles/PMC3958787/

Public Access Defibrillators – Access and Retrieval
This retrospective review of all out-of-hospital cardiac arrests attended by the South Central Ambulance Service in Hampshire over one year aimed to gauge the availability and effective use of public access defibrillation ahead of an ambulance reaching the scene.
Of the 1035 confirmed cardiac arrest calls, the caller reported having access to an automated external defibrillator for only 44 of these calls. The AED was successfully retrieved and used for only 18 calls. Hampshire has over 670 public access devices in nearly 280 locations. The authors discuss campaigns to raise awareness and availability, citing PAD use as a weak link in the survival chain.

Athens Access @ http://heart.bmj.com/content/early/2014/01/22/heartjnl-2013-305030.abstract
Smartphone Apps for Cardiopulmonary Resuscitation Training
This study aimed to systematically evaluate the quality of current mobile apps for cardiopulmonary resuscitation training and real incident support from both expert and user perspectives. Medical content was assessed according to the minimum requirements of Basic Life Support guidelines. Other criteria included usability and appeal. From the 61 apps currently available from Google and Apple, five were evaluated as recommendable following the evaluation.

Open Access @ www.ncbi.nlm.nih.gov/pmc/articles/PMC3978555/

Smartphone Application for Bystander CPR
Although bystander CPR is associated with improved survival odds, a minority of out of hospital cardiac arrest patients receive it. This US study used a survey of nearly 1,000 people to identify modifiable barriers to the implementation of a smartphone application, PulsePoint, which alerts users in the vicinity of a cardiac arrest to facilitate immediate bystander resuscitation. PulsePoint is currently active in over 400 US communities in the United States. 50% of the survey respondents were made up of firefighters, paramedics, EMTs, nurses and doctors. 80% of PulsePoint users who arrived on scene with a patient requiring resuscitation before the emergency medical services performed bystander CPR, suggesting that optimised PulsePoint implementation may increase community bystander CPR rates. Optimisation would entail raising the specificity for cardiac arrest and reducing the radius of activation from 0.5 miles to enable a PulsePoint responder to arrive before the emergency services.

Poster Presentation No.P484
Open Access @ http://ccforum.com/content/pdf/cc13258.pdf

Video Analysis of CPR During Transportation
All Hiroshima City Fire Department ambulances are equipped with a device that transmits high-resolution visual images and patient vital data using video cameras and a bio-monitor. Data for out of hospital cardiac arrest patients was analysed and hands-off time calculated to evaluate CPR performance during transportation over one month. The results showed the hands-off time during transportation to be comparable to other settings, with rhythm analysis and ventilation the more request reasons for time without chest compression.

Open Access @ http://ccforum.com/content/pdf/cc13673.pdf