The aim of this Current Awareness Update is to provide a digest of information supporting evidence based practice in pre-hospital, ambulance and emergency services. This will include recent research, news and policy items, and relevant reports. The Current Awareness Update will focus upon resources from NHS Evidence which are freely available to Ambulance Trust staff.

The Update has been commissioned by the National Ambulance Research Steering Group which comprises 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.

The Emergency Services Current Awareness Update is published every two to three months, with each issue covering the following items:

- **What's New**
  Highlighting News, Policy, Reports, Guidelines & Toolkits

- **Research & Development in Prehospital Emergency Care**
  An exploration of on-going research activity in around the country.

- **Research & Best Practice**
  Each issue provides summaries of recent research relevant to pre-hospital and emergency care. The Emergency Services Current Awareness Update focused upon articles which are freely available in full text, with internet links provided.

We hope that you find the *Emergency Services Current Awareness Update* useful.

**Feedback**

The *Emergency Services Current Awareness Update* is produced by:

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Lincolnshire Knowledge and Resource Service  
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*Please note my new email address – our library has relocated to Local Authority premises as part of the NHS Public Health transition.*
What's New?

The following items are relevant to pre-hospital emergency care.

News & Comment

Joint Emergency Services Interoperability Programme
The aim of JESIP is ‘to ensure that the blue light services are trained and exercised to work together as effectively at all levels of command in response to major or complex incidents so that as many lives as possible can be saved’. [http://www.jesip.org.uk](http://www.jesip.org.uk/)

The rationale for its launch is summarised in details for the National Interoperability Summit as follows: ‘After a number of recent national incidents and inquest recommendations and with recent focus on the safety of the UK during the 2012 Olympic Games, the past year has seen a welcome increase in focus from Government in this critically important topic. The Joint Emergency Services Interoperability Programme (JESIP) has been established with representatives from all emergency services and responders. This is supported by the Home Office, the Cabinet Office, Department of Communities and Local Government and the Department of Health.’

The House of Commons debate on Emergency Service Interoperability can be read online at: [www.publications.parliament.uk/pa/cm201213/cmhansrd/cm120612/halltext/120612h0001.htm](http://www.publications.parliament.uk/pa/cm201213/cmhansrd/cm120612/halltext/120612h0001.htm)

The first National Interoperability Summit was held in November, bringing together leaders and strategic managers from UK Category 1 and Category 2 responders debate the current position and what the future holds for Emergency Service Interoperability at incidents in the UK.

Presentations from the Summit can be downloaded from: [http://www.cfaoa.org.uk/14462](http://www.cfaoa.org.uk/14462)

Reports & Policy

Getting to grips with integrated 24/7 emergency and urgent care: a practical way forward for clinical commissioners, NHS Alliance, October 2012


Integrated Ambulance Commissioning in the New NHS

This NHS Confederation and National Ambulance Commissioners Group briefing explains how ambulance commissioning currently works for clinical commissioners who may be new to this area. It is designed to support the efforts being made by the National Ambulance Commissioners Group to ensure that ambulance commissioning responsibilities are effectively transferred from primary care trusts to CCGs. [Source: King’s Fund Health Management News Alert](http://www.nhsconfed.org/Publications/Documents/integrated_ambulance_commissioning_112012.pdf)

Zero tolerance: making ambulance handover delays a thing of the past

This NHS Confederation report is intended to support healthcare leaders in their efforts to make handover delays a never event in their local health economies. Each section of the report outlines a theme or key message that emerged from meetings, interviews and case studies with ambulance services, hospitals, commissioners, primary care and community service providers, and contains recommendations that should be useful in supporting local work to eliminate delays and make handover clinically safe, efficient and effective. [Source: King’s Fund Health Management News Alert](http://www.nhsconfed.org/Publications/reports/Pages/Zero-tolerance.aspx)
Guidelines, Toolkits and Best Practice

Ambulance Handover and Turnaround - Addressing a Whole System Issue
This joint NHS Confederation Ambulance Service Network, National Ambulance Services Medical Directors Group and National Ambulance Commissioners Group workshop provided a forum for a national debate on the issue of ambulance handover and turnaround, an effective process being an integral part of delivering the best clinical care for the patient and ensuring an effective use of organisational resources.

NHS Confederation members can download presentations from the workshop.
www.nhsconfed.org/Networks/AmbulanceService/News/Pages/Joinourworkshoponambulancehandovers.aspx

Driving Improvement in A&E Services, Foundation Trust Network, October 2012
This benchmarking study from the Foundation Trust Network brought together 11 acute trusts with A&E services. The study used comparable, validated information from each service and shared best practice to develop action plans to improve services
www.foundationtrustnetwork.org/resource-library/ftn-benchmarking-aande-2012/

Evaluation of NHS 111 pilot sites - Final Report, University of Sheffield
This is the final report of the evaluation of NHS 111, a new telephone based service designed to help people access appropriate healthcare for urgent medical problems. NHS 111 was developed in response to a review of urgent care that highlighted problems the public encounter when trying to access urgent care. The evaluation results showed that ‘NHS 111 providers in four pilot sites successfully established new services’ and that ‘the lack of impact of NHS 111 in its first year in the pilot sites could be explained by the small ‘dose’ of NHS 111 within the emergency and urgent care system or the early stage of development at which it was evaluated (one year). It takes time for early problems to be identified and resolved, for a new service to become established with users, and for reflection on how the service can be improved. However, it cannot be assumed that increase in use, and time, will produce expected benefits. The evaluation has identified issues which could increase the likelihood of achieving expected benefits.’
www.shef.ac.uk/polopoly_fs/1.227404!/file/NHS_111_final_report_August_2012.pdf

Royal College of Paediatrics and Child Health Evidence Statement:  Major trauma and the use of tranexamic acid in children November 2012
Key points
• Tranexamic acid reduces mortality in adult trauma
• Early administration is vital for efficacy
• Due to the lack of published data on the use of tranexamic acid in paediatric patients who have undergone major trauma there is no evidence for a specific dose in this situation
• The RCPCH and NPPG Medicines Committee recommend a pragmatic dosage schedule – 15mg/kg tranexamic acid loading dose (max 1g) over 10 minutes followed by 2mg/kg per hour
• Use in ambulances – Ambulance unit trusts should develop appropriate patient group directives to allow administration of TXA to children over the age of 12 in accordance with local policy.
http://secure.collemergeunycmed.ac.uk/code/document.asp?ID=6706

Urgent Care Centres - What works best? Primary Care Foundation October 2012
This review of urgent care centres found little published evidence that the various types which have evolved reduce attendances at A&E, and also suggests that they might increase the total burden on the NHS.
www.primarycarefoundation.co.uk/files/PrimaryCareFoundation/Downloading_Reports/Reports_and_Articles/Urgent_Care_Centres/Urgent_Care_Centres.pdf
Prehospital Research Activity in the UK – A Snapshot

The details of published research papers which make up the largest of part of this bulletin represent work which may have commenced many months and often years beforehand. Behind the scenes, research is well underway which may not reach the journals for some time, but provides a fascinating picture of the scope and range of prehospital emergency care practices which are being rigorously investigated and evaluated.

This section provides brief information on some centres for prehospital research providing links to enable you to discover the individuals leading this research and to uncover details regarding all aspects of the research process.

This is not an exhaustive list, but it hopefully gives some insight into a picture of vigorous research activity with the opportunity to explore further.

A list of some of the on-going projects is overleaf.

Research Centres from North to South

Stirling University

The Nursing, Midwifery and Allied Health Professions Research Unit (NMAHP RU) at Stirling University includes a programme of Prehospital Emergency Care research which focuses on improving the quality, and safety of practice by ambulance clinicians (both paramedics and technicians) in the pre-hospital emergency care environment. To date research has focused on improving the quality of care and treatment for people with long term conditions and Mental Illness, and in the development of innovations to improve safety.

www.nmahp-ru.ac.uk/research/#Pre%20hospital%20Emergency%20Care

Sheffield University

Established in 1966, the Medical Care Research Unit (MCRU) is one of the UK’s leading health services research groups. The aim of the unit is to conduct research that influences health care practice and policy for the benefit of NHS patients and the public. Its Research Themes include Ambulance Policy and the Ambulance Outcomes Programme.

www.sheffield.ac.uk/scharr/sections/hsr/mcru

EMRIS – Emergency Medical Research in Sheffield is a research group based in the School of Health and Related Research (SchARR) which aims to improve the quality of emergency care through rigorous objective independent research. Main areas of research interest include the role of emergency care practitioners and paramedic practitioners and methods for evaluating emergency care systems.

www.shef.ac.uk/scharr/sections/hsr/emris
http://emmedris.blogspot.co.uk/

University of Lincoln

The work of the Prehospital Emergency Quality and Outcomes (PEQO) Group within the Community and Health Research Unit (CaHRU) is focused on translational research for quality improvement in prehospital (ambulance service) and emergency care. The research group collaborates widely with academic units and health partners (ambulance trusts) in the UK and internationally.

www.cahru.org.uk/research/peqo/
Warwick University

**Warwick Clinical Trials Unit** (WCTU) is an academic unit undertaking clinical trials addressing real issues of local, national and international importance. One of the research areas for trials is **Emergency, Critical Care and Rehabilitation**.

[www2.warwick.ac.uk/fac/med/research/hscience/ctu/trials/critical/](http://www2.warwick.ac.uk/fac/med/research/hscience/ctu/trials/critical/)

Research in the **Division of Health Sciences** also addresses aspects of prehospital care.

[http://www2.warwick.ac.uk/fac/med/research/hscience/research/](http://www2.warwick.ac.uk/fac/med/research/hscience/research/)

Coventry University

Established in 2006 the **Pre-hospital, Emergency & Cardiovascular Care Research Group** grew from the development of innovative pre-registration and continuing professional development courses related to pre-hospital care. Areas of research interest centre on improving systems for delivery of rapid emergency and cardiac care, both in and out of hospital, and national policy in the cardiovascular arena.

[wwwm.coventry.ac.uk/researchnet/phecc/Pages/AboutPHECC.aspx](http://wwwm.coventry.ac.uk/researchnet/phecc/Pages/AboutPHECC.aspx)

Great Western Ambulance Service NHS Trust

Great Western Ambulance Service NHS Trust (GWAS) has a rapidly-developing research programme in partnership with other NHS organisations and regional universities, particularly the Academic Department of Emergency Care at the University of the West of England, Bristol. A short paper from GWAS is appended to this bulletin.

University of the West of England

The **Critical and Emergency Care Research Programme** at UWE has an established and expanding portfolio of research and knowledge exchange activities. The programme combines the expertise of academic and clinicians in areas including resuscitation, prehospital care and emergency practice.


TRUST - Thematic Research network for emergency, UnScheduled and Trauma care

**TRUST** is a Registered Research Group funded by the Welsh National Institute for Social Care and Health Research (NISCHR) and based at Swansea University. TRUST works closely with other research organisations in Wales and England, bringing together researchers, clinicians and service providers to develop and improve unscheduled, emergency and trauma care.


University of Surrey

A portfolio of prehospital research undertaken in the **Faculty of Health and Medical Sciences** at the University of Surrey can be viewed below:

[www.surrey.ac.uk/fhms/people/tom_quinn/index.htm](http://www.surrey.ac.uk/fhms/people/tom_quinn/index.htm)

999 EMS Research Forum.

The **999 EMS Research Forum** was formed in 1999 to encourage, promote and disseminate research and evidence based policy and practice in 999 healthcare. A Board of Advisors has been formed, with members from across the UK, Ireland and Australia, and from a range of specialities that contribute to this field of research.

The Research

Follow the links to explore these projects in depth.

Much of the research in prehospital care is collaborative across a number of research centres and to avoid complications the projects are simply listed alphabetically under broad topic headings.

Where more than one link is provided, these allow you to investigate information from the centres themselves and from research trial databases to give you a full insight into the research process.

Service Delivery & Quality

Care of older people who fall: evaluation of the clinical and cost effectiveness of new protocols for emergency ambulance paramedics to assess and refer to appropriate community based care. (SAFER 2)
Evaluation of the clinical and cost-effectiveness of assessment and referral of older people who fall by emergency ambulance paramedics to appropriate community care (RCT).

*Estimated Publication Date: Late 2014*

[www.hta.ac.uk/1802](http://www.hta.ac.uk/1802)
[www.saferproject.org/](http://www.saferproject.org/)

Clinical Handovers within the Emergency Care Pathway and the Potential for Harm of Clinical Handover Failures (ECHO)
This project addresses the questions of the potential for harm of clinical handover failures along the Emergency Care pathway, common organisational deficiencies affecting handover and the impact of the organisational model of care delivery.

*Estimated Publication Date: July 2013*

[www2.warwick.ac.uk/fac/med/staff/sujan/research/echo/](http://www2.warwick.ac.uk/fac/med/staff/sujan/research/echo/)

Decision Making and Safety in Emergency Care Transitions
The aim of this study is to explore service users’ views and experiences of patient safety in Ambulance Service care, which is part of a larger study examining decision making and safety in emergency care and to identify areas of high risk regarding decision-making about service user options.

*Estimated Publication Date: February 2014*

[www.shef.ac.uk/scharr/sections/ph/research/emergencycare](http://www.shef.ac.uk/scharr/sections/ph/research/emergencycare)

Development and validation of risk-adjusted outcomes for systems of emergency medical care (DAVROS)
Emergency care systems which involve ambulances, hospitals and general practitioners can be organised in different ways and it is often difficult to tell which way is best. DAVROS will develop a method for comparing the survival rates of different systems that takes into account the type of patients using the system.

*Timescale: 42 months*

[www.shef.ac.uk/scharr/sections/hsr/emris/davros](http://www.shef.ac.uk/scharr/sections/hsr/emris/davros)

Development of clinical performance indicators for Category B calls
We are developing new ways to measure ambulance service performance other than response time by identifying key processes which better reflect the actual care delivered.

[http://emj.bmj.com/content/28/3/e1.14.abstract](http://emj.bmj.com/content/28/3/e1.14.abstract)
Emergency Stroke Calls: Obtaining Rapid Telephone Triage (ESCORTT)
This research is exploring the interactions between callers and Emergency Medical Dispatchers to develop a stroke-specific training package.
www.uclan.ac.uk/schools/school_of_health/emergency_stroke_calls.php

Head Injury Transportation Straight to Neurosurgery (HITS-NS) trial - a feasibility study
This feasibility study for a randomized trial, in which patients will either be transferred to the nearest hospital or transferred directly to a specialist neurosurgical centre, aims to discover whether ambulance service crews will comply with the randomisation and recruit the right patients before designing a full trial.
Estimated Publication Date: 2014
www.hta.ac.uk/project/2223.asp

Informing delivery of care through research evidence: an investigation of randomised controlled trial implementation in pre-hospital emergency care.
The aims of the PhD study are to assess the quality, volume and progress of RCTs in pre-hospital emergency care, and to describe factors which facilitate and hinder their implementation and influence in this field.
Project End Date: March 2013
www.swansea.ac.uk/medicine/ils/rctsinpre-hospital/emergencycare/

Patient Safety in UK Ambulance Services - a scoping review
The aim of this scoping exercise is to provide a robust evidence base on patient safety in Ambulance Services.
Estimated Publication Date: March 2013
www2.warwick.ac.uk/fac/med/staff/sujan/research/as_scoping_review/

Pre-hospital Outcomes for Evidence Based Evaluation (PhOEBE)
The PhOEBE project is a five year programme of research designed to develop new ways of measuring the impact of ambulance service care that can be used to monitor performance, measure quality improvement and evaluate service innovation.
Project End Date: 2016
www.shef.ac.uk/scharr/sections/hsr/mcru/phoebe
www.cahru.org.uk/research/peo/phoebe/

A prospective study to explore the link between the use of first aid and patient outcomes following emergency medical events.
This study aims to uncover evidence about the benefits of first aim provided by the general public in order to improve patient outcomes.
https://docs.google.com/folder/d/0B_d6hZzMs6S8aWdmTVNsM3pheTA/edit?pli=1#docid=0B_d6hZzMs6S8d3JmeHhEVE4yUmc

Systematic Review of clinical outcome and cost effectiveness comparing a policy of triage and direct transfer to specialist care centres with delivery to the nearest local hospital.
To enable evidence-based policy decisions about the reconfiguration of hospital and pre-hospital services; specifically on the clinical and cost effectiveness of bypassing local hospitals to transfer emergency patients directly to specialist care centres.
www.cahru.org.uk/research/peo/comparingdirecttransferwithhospitaldelivery/
www.netscc.ac.uk/hsdr/projdetails.php?ref=09-1001-37

Warwick Spinal Immobiliser - Development and Initial Trial of Prototype Spinal Immobilisation Device
This study will trial and evaluate the use of the prototype Warwick Spine Immobiliser which enables paramedics to fully immobilise a patient’s spine before moving them but which still allows the patient’s mouth to open, reducing feelings of claustrophobia and panic.
Project End Date: November 2013
www2.warwick.ac.uk/fac/med/research/hsri/emergencycare/research/spinalimmobiliser/
Treatment & Intervention

30 Day Study to Evaluate Efficacy and Safety of Pre-hospital vs. In-hospital Initiation of Ticagrelor Therapy in STEMI Patients Planned for Percutaneous Coronary Intervention (PCI) (ATLANTIC)
The aim of this study is to determine whether initiation of ticagrelor as early as in the ambulance setting leads to a rapid reperfusion of the infarct-related artery therefore facilitating the Percutaneous Coronary Intervention (PCI) and optimizing the outcome for the patient.

Estimated Study Completion Date: May 2013
http://clinicaltrials.gov/show/NCT01347580

Development and validation of a risk score for trauma patients with haemorrhage (CRASH-2)
Currently there is no widely accepted risk scoring system for patients with trauma and bleeding. We plan to develop a risk scoring system using data we have collected from 20,000 patients with trauma and bleeding from a large clinical trial (CRASH-2).

Estimated Publication Date: April 2013.
www.hta.ac.uk/2295

European Ambulance Acute Coronary Syndrome (ACS) Angiography Trial (EUROMAX)
To show that the early administration of bivalirudin improves 30 day outcomes when compared to the current standard of care in patients with ST segment elevation Acute Coronary Syndrome, intended for a primary Percutaneous Coronary Intervention management strategy, presenting either via ambulance or to centres where PCI is not performed.

Estimated Primary Completion Date: May 2014
http://clinicaltrials.gov/ct2/show/NCT01087723
www.ukctg.nihr.ac.uk/trialdetails/NCT01087723?view=healthprofessional

Paramedic Initiated Lisinopril For Acute Stroke Treatment
This study aims to investigate the use of lisinopril to lower blood pressure in stroke patients, pre-hospital, by research-trained paramedics.

Estimated Primary Study Completion Date: September 2011
www.ukctg.nihr.ac.uk/trialdetails/NCT01066572?view=healthprofessional
www.ncbi.nlm.nih.gov/pmc/articles/PMC3141530/

Paramedic supplied 'Take Home' Naloxone Feasibility Study
This study asks; What is the feasibility of carrying out a randomised controlled trial to determine the safety, clinical and cost-effectiveness of THN distribution by paramedics at the scene of 999 attendances to patients who have suffered and recovered from an opiate overdose?

Project End Date: November 2015
www.ukctg.nihr.ac.uk/trialdetails/ISRCTN98216498

Rapid Intervention with GTN in Hypertensive stroke Trial (RIGHT)
This study aims ‘to assess the feasibility of performing an ambulance-based trial in patients with hyperacute stroke, a key question for the future testing of potential interventions aimed at neuroprotection and physiological control and to assess the effect of glyceryl trinitrate (GTN) on blood pressure (BP) in this setting’

Final Investigation Meeting held: September 2012
www.controlled-trials.com/ISRCTN66434824/66434824
www.cahru.org.uk/research/peqo/right/
www.right-trial.org/

Strategic Reperfusion (With Tenecteplase and Antithrombotic Treatment) Early After Myocardial Infarction Infarction (STREAM) trial.
This study aims at evaluating, in a proof of concept approach, the outcome of patients presenting with acute ST-elevation myocardial infarction within 3 hours of symptom onset in either a pre-hospital setting or community hospital emergency room without a PCI facility.

Primary Study Completion Date: September 2012
http://clinicaltrials.gov/ct2/show/NCT00623623
Systematic review and cost-effectiveness analysis of pre-hospital non-invasive ventilation for acute respiratory failure

This project will collect all available research into pre-hospital non-invasive ventilation to estimate the number of lives that could be saved by its routine prehospital provision on NHS ambulances. A cost-effectiveness model will then be developed.

*Estimated Publication Date: Late 2014.*

www.hta.ac.uk/2926

Tranexamic Acid for the Treatment of Significant Traumatic Brain Injury: An International, Randomised, Double Blind, Placebo Controlled Trial (CRASH-3)

The CRASH-3 trial is an international, multicentre, randomised placebo controlled trial of the effects of early administration of tranexamic acid on death, disability and vascular occlusive events in adult patients with traumatic brain injury.

*Study closure date: April 2017*


CPR

Airway Management Feasibility Study (REVIVE-Airways)

This research study is a preliminary investigation to determine whether the proposed design will allow the comparison of the two most promising Supraglottic Airway Devices (i-gel and LMAS) with current practice during pre-hospital cardiac arrest in the Great Western Ambulance Service.

*Estimated Study Completion Date: February 2013*

www.ukctg.nihr.ac.uk/trialdetails/ISRCTN18528625?view=healthprofessional

www.controlled-trials.com/ISRCTN18528625


LINC (Lucas IN Cardiac arrest)

The LINC study is a randomised controlled trial comparing conventional adult out-of-hospital cardiopulmonary resuscitation (CPR) with mechanical chest compressions. The LINC study is a multi-centre study being carried out in Western Europe, with the South Western Ambulance Service (SWASFT) the only site in the UK. This large multicentre study will contribute to the evaluation of mechanical chest compression in CPR and specifically to the efficacy and safety of the LUCASTM device when used in association with defibrillation during on-going CPR. The primary endpoint for the study is four-hour survival after successful restoration of spontaneous circulation.

*Results will be available from early May 2013*

www.lucas-cpr.com/en/for_users/lucas_cpr_pre-hospital_use

Prehospital Randomised Assessment of Mechanical compression Device In Cardiac arrest (PaRAMeDIC)

The PARAMEDIC trial is a collaboration between the Universities of Warwick, Coventry, Leeds, Southampton and Surrey and the Scottish, Welsh and West Midlands Ambulance Services. The PARAMEDIC trial will examine if the use of a new mechanical chest compression device (called LUCAS-2) will improve survival and other patient focused outcomes in victims of cardiac arrest.

*Estimated Publication Date: Late 2015.*

www2.warwick.ac.uk/fac/med/research/ctu/trials/ecr/paramedic/about/

www.hta.ac.uk/project/1845.asp

www.controlled-trials.com/ISRCTN08233942
NHS National Institute for Health Research (NIHR) Clinical Research Network Portfolio
The NIHR Clinical Research Network Portfolio is part of the UK Clinical Research Network Portfolio, which comprises the network Portfolios for England, Northern Ireland, Scotland and Wales. The Injuries and Emergencies Specialty Group is one of 24 Specialty Groups which provide national networks of topic-specific expertise.

www.crncc.nihr.ac.uk/about_us/ccrn/specialty/injuries_emergencies

The research portfolios are held on a single information system: the UKCRN Portfolio Database. The Injury and Emergency research can be investigated at the link below:
http://public.ukcrn.org.uk/search/Portfolio.aspx?Level1=20

UK Clinical Trials Gateway
The UK Clinical Trials Gateway provides easy to understand information about clinical research trials running in the UK, and gives access to a large range of information about the trials. The Gateway uses information from the Current Controlled Trials and the ClinicalTrials.gov registers

www.ukctg.nihr.ac.uk/advancedsearch.aspx

Research Priorities in Prehospital Care - Explore Further

This selection of papers provides background to the priorities for prehospital emergency care research.

This paper discusses developments in research support for ambulance trusts in England and Wales and how this could be designed to lead to better implementation, collaboration in and initiation of high-quality research to support a truly evidence-based service

http://eprints.lincoln.ac.uk/2347/1/Siriwardena_Supporting_R%26D_in_ambulance_services_EMJ_2010.pdf

Building the evidence base in prehospital urgent and emergency care: a review of research evidence and priorities for future research.
This report from the University of Sheffield Medical Care Research Unit reviews the existing research and evidence in the field of prehospital urgent and emergency care, and identifies gaps where future research would be valuable.


Snooks H, Evans A, Wells B et al. What are the highest priorities for research in pre-hospital care? Results of a review and Delphi consultation exercise. Journal of Emergency Primary Health Care, Vol.6 (No.4)
This study aimed to identify gaps in research evidence related to delivery of pre-hospital care and to rank topics in order of priority for research


This paper reports on a European expert panel participated in a process to reach consensus on the most important research priorities in physician-provided pre-hospital critical care.


Conferences

New research is showcased and discussed at conferences and overleaf you will find details of a conference focusing upon research in prehospital care, taking place at the end of February.
The Thematic Research Network for Unscheduled and Trauma Care (TRUST), Welsh Ambulance Service Trust and the 999 Research Forum invite you to attend

**Making an Impact: what’s new in emergency prehospital care research?**

The prehospital, emergency and trauma care conference which brings together research and practice

- Key Speakers
- Presentations
- Workshops

**WHO SHOULD ATTEND?**

- Practitioners: paramedics, doctors, nurses
- Health service managers
- Policy makers
- Academics

**REGISTRATION FEE**

- £40
- Students £20

Conference registration will include access to all presentations and workshops, refreshments and 2 course lunch.

**VENUE**

Novotel Cardiff Centre
Cardiff CF10 4RT

**CALL FOR ABSTRACTS**

The 999 EMS Research Forum invites abstracts for oral and poster presentations at the Conference. Abstracts will be peer reviewed.

A prize of a funded trip to present your work at an international conference will be awarded to the presentation judged to be **Highest quality research** - funded by TRUST.

Other prizes will be awarded for **Research most likely to affect practice** and **Best poster**.

Deadline for abstract submission: 4 Jan 2013

Abstract submission guidelines available at [www.trustresearch.org.uk](http://www.trustresearch.org.uk)

**TO REGISTER**

999emsresearchforum@swansea.ac.uk
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.

👩‍عتبر Paper listed as **Open Access @** are freely available in full text from the link provided.

👩‍عتبر Paper with links listed as **Athens Access @** require you to log in with a free [NHS Athens username](https://register.athensams.net/nhs/) 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 web page, 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 view this item, select one of the options below:

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

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

**Prehospital Services - Development and Quality**

- Air Ambulance Services

**Treatment and Intervention**

- Airway Management, Resuscitation & CPR

Diagnostics

You can find the complete archive of the [Emergency Services Current Awareness Update at the link below](https://www.networks.nhs.uk/nhs-networks/nwas-library-and-information-service/esca):
Avoided ED Attendance or Avoided Hospital Admission?
The difference between a patient avoiding attendance at an emergency department, and avoiding admission to hospital is important due to the different implications for the patient and the utilisation of healthcare resources for each outcome. An audit form used by the Great Western Ambulance Service has been used to record which of these two outcomes an Emergency Care Practitioner believes to be the results of their own actions but the accuracy of subjective opinion has not been validated and the authors note that there is no ‘gold standard’ for determining whether attendance or admittance has been avoided. This study aimed used case reviews by three healthcare professionals – an Emergency Care Practitioner, an emergency department consultant and a GP – to evaluate the accuracy of the ECPs opinion. Overall agreement between the three was rated as ‘fair’. The authors suggest their study provides some evidence that ECPs can accurately differentiate between the two outcomes for patients at the time of providing care.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/29/10/838?etoc

Ambulance Service Provision for Elderly Fallsers
This paper used the results of a national survey of UK ambulance services (with an 84.6% response rate) to provide a detailed picture of ambulance service provision to older people who have fallen. The authors discuss the need for robust evidence to inform policy, service and practice development highlighted by the survey results.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/29/12/1009?etoc

Emergency planning: key issues and challenges in the UK
This study analysed interviews with stakeholders and opinion leaders in the field of emergency response planning in the UK to examine the issues and challenges faced in the NHS. The interviews highlighted particular gaps in operational planning and in knowledge relating to how both risk and behaviour in emergencies in dealt with. A lack of evidence-based approaches to engaging with the public and to developing community resilience was identified. The authors report that four themes for future research to strengthen the evidence base emerged; i) Knowledge-base for emergency management. (ii) Social and behavioural issues. (iii) Organisational issues in emergencies. (iv) Emergency management systems.

Open Access @ http://www.biomedcentral.com/content/pdf/1471-2458-12-884.pdf

The report is discussed in the link below:
‘Experts from the University of Sheffield analysing emergency responses and management to major incidents such as flash flooding, severe cold weather events and terrorist incidents in the UK have found gaps in the knowledge base.’
Open Access @ http://www.shef.ac.uk/news/nr/emergency-response-management-incidents-national-institute-health-research-1.224488

Emergency Services - Current Awareness Update: Issue 20
Evaluation of Response Time as a Performance Measure
The French emergency medical service system uses two tiers of ambulance service, the first is fire-service based and staffed by paramedics, the second is hospital based and staffed by physicians. This study evaluated the response times of this second-tier of ambulances as a performance measure and investigated how the services could best be integrated geographically. The authors suggest that response times might be optimised by a system where service catchment areas are based upon performance evaluation as well as on administrative criteria.

Athens Access @ http://emj.bmj.com/content/early/2012/09/28/emermed-2012-201714.abstract

Impact of Adult Trauma Centres on Paediatric Trauma Activity
This study reviewed paediatric trauma calls to St George’s Healthcare Trust to examine the impact of the 2010 launch of the adult-focused London Trauma Network, centralising trauma care and resourcing four new Major Trauma Centres (St George’s being one), upon paediatric trauma workload. Records revealed a 200% increase in paediatric trauma calls and a 191% increase in admission to hospital which the authors suggest shows paediatric trauma patients are being over triaged. The authors discuss these results and suggest it is essential to take into account impact upon paediatric services when adult services are being reconfigured.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/emermed-2012-201125v1?papetoc

Patient and Clinician Experience of Prehospital Acute MI and Stroke Care
This qualitative research study used interviews with patients and ambulance service clinicians, and a clinician focus group, to explore their experiences of prehospital care for acute myocardial infarction and stroke in order to assess the factors which contribute to service quality in the prehospital setting. Four themes which emerged were communication, professionalism, treatment of the condition and the transition from home to hospital. The authors note that their results revealed a discrepancy between the patients’ lack of knowledge of the role of the paramedic in providing treatment, and the paramedics’ own perceptions of patient expectation. The authors suggest these findings can contribute to the development of measures for patient experience in the prehospital setting.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/emermed-2012-201507v1?papetoc
Patterns of Ambulance Demand
This study reviewed published research to look for evidence of temporal patterns (time of day, days of the week, seasons) in demand for ambulance services. An analysis of the 38 research papers found showed patterns in overall demand existed for the time of day, but varied over days of the week and season. Analysis by the type of case showed time of day patterns again. The authors note that the populations seen in these patterns for ambulance demand are distinct from those reported in hospital data. They note that research into demand patterns could be used to improve services.


Perfect World Model of Emergency Unit Patient Flow
This paper proposes the creation of a ‘perfect world’ model of emergency unit patient flow to assess the gap between the real and perfect worlds within a major UK hospital. The authors report that this gap can be used to identify bottlenecks which can inform planning and management.

Baboolal K, Griffiths JD, Knight VA et al. How efficient can an emergency unit be? A perfect world model. Emergency Medicine Journal 2012;29 972-977 Athens Access @ http://emj.bmj.com/cgi/content/abstract/29/12/972?etoc

Prehospital Medical Assistance in Chemical, Biological, Radiological or Nuclear Events
This article proposes two capacities for field-level medical (prehospital) assistance for people exposed to chemical, biological, radiological or nuclear agents —Field Medical Care and Field First Aid. The authors discuss the need to take into account that qualified staff might not have the correct equipment available in such incidents and acknowledges that opportunities for ‘real life’ in both elements are rare. Training needs are discussed and the authors invite comment from people working in this area.

Malich G, Coupland R, Donnelly S et al. A proposal for field-level (prehospital) medical assistance in an international humanitarian response to chemical, biological, radiological or nuclear events. Emergency Medicine Journal, 2012, 10.1136 Athens Access @ http://emj.bmj.com/cgi/content/abstract/emermed-2012-201915v1?papetoc

The following document is referenced in the paper above and can be downloaded in full text from the link provided. National Ambulance Resilience Unit. Service specialisation for NHS ambulance services Hazardous Area Response Teams 2012 Open Access @ http://naru.org.uk/wp-content/uploads/2012/05/NARU-HART-Service-Specification-April-2012-signed-off.pdf

Prehospital Pre-Alert Guidance Tool
This study, based at Aberdeen Royal Infirmary, evaluated a new prehospital alerting tool over a seven week period, analysing the alert decision of the ambulance crew to assess whether the tool could take the place of a prehospital early warning system. The authors report that the tool, which used basic demographic information, alert status and guidance prompt status, showed validity and was superior in pre-alerting when compared with ambulance crew decisions, supplementing clinical decision making and benefiting triage and resource utilisation.

Provision of Psychosocial Care in Emergencies and Major Incidents
This study investigated the role of ambulance clinicians in providing psychosocial care in the event of emergencies and major incidents through the use of three rounds of online questionnaires which aimed to identify the needs of first-responder ambulance staff for education about the psychosocial responses of survivors, for training in psychosocial skills and for their own continuing support. The authors discuss the results from the study and recommend that ambulance clinicians are provided with training and education in a number of areas so that they can meet the psychosocial needs of patients.

Drury J, Kemp V, Newman J et al. Psychosocial care for persons affected by emergencies and major incidents: a Delphi study to determine the needs of professional first responders for education, training and support. Emergency Medicine Journal Published Online First: 9 November 2012

Athens Access @ http://emj.bmj.com/content/early/2012/11/08/emergmed-2012-201632.abstract

Reporting Paediatric Out of Hospital Cardiac Arrest
This paper examined how the reporting of paediatric out-of-hospital cardiac arrest on an Ambulance Cardiac Registry could be improved by linking records with a coronial register. The authors were able to link 86% of paediatric OCHA records on the cardiac arrest registry with the coronial data and discuss the agreement between paramedic assessment of the cause of cardiac arrest with the later findings. The authors note that their findings highlight the limitations of ascribing a cause based on clinical presentation and suggest that linking data can improve reporting.

Deasy C, Hall D, Bray JE et al. on behalf of the VACAR Steering Committee. Paediatric out-of-hospital cardiac arrests in Melbourne, Australia: improved reporting by adding coronial data to a cardiac arrest registry. Emergency Medicine Journal, 2012, 10.1136/emermed-2012-201531

Athens Access @ http://emj.bmj.com/cgi/content/abstract/emermed-2012-201531v1?papetoc

Sharing Data to Reduce Community Violence
A project in Cardiff showed that sharing emergency department data with community safety partnerships was associated with substantial reductions in attendance at A&E by victims of assault. The authors here aimed to validate the findings in Cambridge, without the public health or academic structure supporting the Cardiff model. The authors report that they were successful in implementing data sharing and a reduction in violent crime was seen, though they note that a causal association was not clear.


Athens Access @ http://emj.bmj.com/content/early/2012/11/25/emergmed-2012-201898.abstract

Sports Prehospital-Immediate Care and Spinal Injury
This article discusses sports prehospital–immediate care, using spinal injury management as an illustration how it differs from general prehospital care. The paper highlights the need to develop the sport-specific prehospital evidence base, noting that ‘prehospital management of serious injury is a key skill required of pitch-side medical staff’ and discusses the lack of sports-specific training and guidance.


Athens Access @ http://bjsm.bmj.com/cgi/content/abstract/46/16/1097?etoc
Air Ambulance Services

Helicopter or Ground Transport for Severe Blunt Trauma?
This French study compared the impact of helicopter or ground transportation of patients with severe blunt trauma to a University intensive care unit on mortality. Prehospital and hospital for 1,958 patients admitted to the ICU directly from the accident scene was analysed. Just under three quarters were transported over ground, the remainder by helicopter. The authors found that the mortality rates, adjusted to take into account the severity of injury, were significantly lower for patients transported by helicopter. This group were reported as receiving more intensive pre-hospital treatment. The authors suggest helicopter transport might be beneficial in severe blunt injury trauma but that this association might be due to better prehospital management.

Desmettre T, Yeguiayan J-M, Coadou H et al. Impact of emergency medical helicopter transport directly to a university hospital trauma centre on mortality of severe blunt trauma patients until discharge. Critical Care 2012, 16:R170
Open Access @ http://ccforum.com/content/pdf/cc11647.pdf

Helicopter Transport and Early Reperfusion
This Danish study investigated whether helicopter transportation of patients with ST-elevation myocardial infarction (STEMI) was associated with earlier initiation of reperfusion therapy. 398 patients were studied over one year, 376 of them transported by ambulance, 22 by helicopter. 338 patients were triaged directly to the Percutaneous Coronary Intervention Centre. Time to reperfusion, and distance transported were recorded. The authors report that their results suggest patients living more than 60km from the PCI centre might benefit from helicopter transport and that a strategy of using helicopters for field triage might ensure patients living up to 150km distant could still be treated with 2 hours of an emergency call.

Open Access @ http://www.sjtrem.com/content/pdf/1757-7241-20-70.pdf
Case Report: Entrapment in an Unstable Structure
This case report of a prehospital team’s call to a person trapped in a partially collapsed three-story house describes the difficulties posed by restricted access to the patient and the joint working between ambulance, fire, urban search and rescue and helicopter emergency medical service teams.

Athens Access @ http://emj.bmj.com/cgi/content/extract/29/12/1011?etoc

Case Report: Hypertrophic obstructive cardiomyopathy – Case Report
This case report discusses the treatment by ambulance crew of a 17 year old discovered unconscious in a ditch after a bicycle accident. Based upon suspected head, spinal and abdominal injuries an air ambulance was requested. The patient regained consciousness before the air ambulance arrived and reported feeling dizzy before his accident. The authors discuss the cause of the loss of consciousness and the management of the case.

Athens Access @ http://emj.bmj.com/cgi/content/extract/29/11/919?etoc

Case Report: Intra-Osseous Needle Breakage
This case report discusses a potential complication of one brand of intraosseous needle when seeking vascular access in the prehospital setting, namely the breakage of the needle in situ and the difficulty of its removal.

Athens Access @ http://emj.bmj.com/cgi/content/extract/29/11/923?etoc

Case Report: Prehospital Improvisation of Standard Oxygen Therapy Equipment
This case report discusses an assault victim attended by an ambulance following a police request. The patient’s head had been struck with force against a wall and was acutely intoxicated. During extrication it became apparent that nebulisation was required but the patient’s supine position made this difficult. To avoid compromising c-spine control, a system using a duo oxygen mask, venturi entrainment device and micronebuliser was improvised enabling the micronebuliser to remain upright.

Athens Access @ http://emj.bmj.com/cgi/content/extract/29/11/921?etoc

Case Report: Thrombolytics in Severe Frostbite
This paper reports on the case of a patient with severe frostbite, treated with thrombolytic therapy, detailing the individual case and presenting a discussing of this therapy and its treatment regimens.

Open Access @ http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3440898/
Combat Vehicle Blast Injuries
This paper describes the pattern of injuries to soldier involved in four incidents of armoured personnel carriers striking improved explosive devices, seen by a Dutch surgical team working in Afghanistan. The authors note the striking similarity of the injuries and discuss the nature of blast injury patterns.

Open Access @ http://www.biomedcentral.com/content/pdf/1471-227X-12-12.pdf

Haemostatic Dressings in Prehospital Care
The authors of this paper report that anecdotal evidence from military conflicts increasingly support the use of dressings with haemostatic control to limit blood loss in civilian prehospital care. This paper examines the main characteristics of haemostatic dressings and reviews the literature supporting their use, which the authors note currently focuses upon animal models.

Athens Access @ http://emj.bmj.com/content/early/2012/11/16/emermed-2012-201581.abstract

Prehospital Volume Replacement and Outcome in Children with Severe Bleeding
This German study analysed records from a Trauma Register to assess the impact of prehospital fluid replacement on outcomes for children with severe bleeding after major trauma. Patients were groups by age and body weight in order to find a mean value for the fluid volume and then matched according to intubation at the scene and Abbreviated Injury Scale. The results showed that excessive fluid replacement inhibited coagulation and tended to lead to worse clinical outcome and higher.

Open Access @ http://ccforum.com/content/pdf/cc11809.pdf

Routine Cuff Pressure Measurement in Prehospital Endotracheal Intubation
High cuff pressures following endotracheal intubation can have major complications but the authors here note that cuff pressures are not routinely checked in the prehospital setting. They report on a review of cuff pressures after intubation noted in the dispatch records of a Dutch Helicopter Emergency Medical Service finding that, as Dutch paramedics do not have access to manometers, initial cuff pressures are almost all too high. The authors recommend that all ambulances are equipped with cuff manometers.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/emermed-2012-201388v1?papetoc
Trauma Patient in Haemorrhagic Shock

This German study focused upon the Circulation aspect of the ABC priorities for managing shock in trauma patients – Airway, Breathing, Circulation – to see how circulation with haemorrhagic control is managed at the scene and in the emergency department, prior to admission to intensive care. Analysis of 517 sets of data from a Trauma Register showed that all patients were suffering from coagulation dysfunction on arrival at the emergency department. This and other results led the authors to conclude that coagulation management was not being adequately addressed prior to ICU admission.

Open Access @ http://www.sjtrem.com/content/pdf/1757-7241-20-78.pdf

Airway Management, Resuscitation & CPR

Airway management in unconscious non-trauma patients.

Tracheal intubation is recommended to protect the airway and ensure ventilation in unconscious trauma patients. There is currently no guidance with regard to the intubation of unconscious non-trauma patients. This Danish study examined prehospital airway management practice in this patient group by physicians in a Mobile Emergency Care Unit, and any association with the need for tracheal intubation during the first 24 hours after hospital admittance. The authors report that 23% of unconscious non-trauma patients in the study group were intubated before or during transport to hospital, most of these with cardiac arrest, severe stroke or respiratory failure.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/29/11/887?etoc

Airway obstruction due to aspiration of muddy water

This report discusses a case of complete airway obstruction due to aspiration of muddy water and the use of an innovative approach to clear it.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/emjmed-2012-201916v1?papetoc

Comparison of Three Supraglottic Airway Devices for Paediatric Resuscitation

This study compared the use of three airway devices by three differently experienced groups of healthcare professionals (paramedics, nurse anaesthetists and anaesthesia residents) in paediatric airway management. Of the three devices – laryngeal mask, tube, l-gel – the l-gel was found to be superior for all healthcare groups in terms of time to placement and successful placement rates.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/emjmed-2012-201570v1?papetoc
Delayed or Immediate Defibrillation in an Out of Hospital Setting
This review of published literature aimed to examine the evidence base for commencing cardiopulmonary resuscitation before defibrillation in out of hospital cardiac arrest. The ten studies which were identified as meeting the inclusion criteria for the review showed conflicting results with retrospective studies suggesting benefit from pre-shock CPR while randomised controlled trials showing no benefit from delayed defibrillation over immediate. None of the studies showed harm from performing CPR before defibrillation.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/29/10/826?etoc

Electronic Refreshers for CPR
The American Red Cross requires people to renew the CPR certification annually, usually following a 4-8 hour refresher course. This study used randomised controlled trials to assess the performance of three electronic modes of refresher (online, email and texting), comparing outcomes in terms of skill retention and confidence in using CPR. The authors note that results showed no consistent evidence for the use of one mode over another but report that an online approach was the most promising for future research.

Open Access @ http://www.biomedcentral.com/content/pdf/1471-227X-12-18.pdf

Long Term Outcomes of Out-of-Hospital Resuscitation with Pulseless Electrical Activity
This retrospective Finnish study aimed to assess the long-term outcomes of patients with initial pulseless electrical activity who were successfully resuscitated following prehospital cardiac arrest. Resuscitation was attempted on 99 patients and successful in 41 of them. Ten of these were discharged from hospital and six were alive after five years, five of whom showed pre-arrest function levels demonstrated by a self-assessment questionnaire.

Open Access @ http://www.sjtrem.com/content/pdf/1757-7241-20-74.pdf

Metronome-Guide Chest Compressions
Can the use of a metronome assist untrained laypeople in maintaining the required chest compression rate while being guided by an emergency dispatcher? This study compared data from 34 untrained laypeople performing metronome-guided compression-only cardiopulmonary resuscitation on a manikin with a control group of 33. The results showed that the group metronome guidance had improved chest compression rates but more shallow compression depth.

Park SO, Hong CK, Shin DH et al. Efficacy of metronome sound guidance via a phone speaker during dispatcher-assisted compression-only cardiopulmonary resuscitation by an untrained layperson: a randomised controlled simulation study using a manikin. Emergency Medicine Journal, 10.1136/emermed-2012-201612
Athens Access @ http://emj.bmj.com/cgi/content/abstract/emermed-2012-201612v1?papetoc
Prehospital Non-Drug Assisted Intubation – Frequency and Association with Mortality
This Canadian study reviewed the frequency of prehospital non-drug assisted intubation in trauma patients and its association with mortality. Data for over 2,200 adult trauma patients was analysed, 30.1% of whom underwent prehospital intubation. Intubation rates decreased from 33.7% to 14% over the period of the study, but was shown to be associated with an increased mortality risk.

Athens Access @ http://emj.bmj.com/content/early/2012/11/09/emermed-2012-201578.abstract

Sudden Cardiac Arrest on the Football Field
This paper presents guidelines for a practical and systematic approach to the management of Sudden Cardiac Arrest on the football field including the compulsory need for prearranged emergency medical services to be available, prompt recognition of symptoms, immediate CPR and early defibrillation.

Athens Access @ http://bjsm.bmj.com/cgi/content/abstract/46/16/1094?etoc

Using Direct Mail to Improve Resuscitation Knowledge of GPs
This Danish study investigated whether using direct mail to highlight the most recent European Resuscitation Council guidelines to GPs increased their knowledge of the guidance. 351 general practices were randomised to receive direct mail (a poster and covering letter) or no mail, followed up by a multiple choice questionnaire. The results showed that direct mail was associated with improved knowledge of new chest compressions depth and frequency recommendations.

Open Access @ http://www.sjtrem.com/content/pdf/1757-7241-20-72.pdf

Diagnosis

Accuracy of Stroke Diagnosis by Emergency Medical Dispatchers
Research suggests that the ability of emergency medical dispatchers to accurately diagnose stroke requires improvement. To address this, the American National Association of Emergency Medical Dispatchers implemented a diagnostic tool across 3000 cities worldwide, based upon the Cincinnati Stroke Scale and requiring callers to test physical findings and report these back to the emergency medical dispatcher as a pilot study to determine the feasibility of the tool being administered during a 911 call, including the time taken to do so.

Athens Access @ http://emj.bmj.com/cgi/content/abstract/29/10/848?etoc
Appendix 1 - Pre-Hospital Research in Great Western Ambulance Service NHS Trust

Great Western Ambulance Service NHS Trust (GWAS) has a rapidly-developing research programme in partnership with other NHS organisations and regional universities, particularly the Academic Department of Emergency Care at the University of the West of England, Bristol. Three recent projects are outlined below:

1. **CURE: The Community Urgent Response Environment**
   This research, led by Loughborough University, developed modular technologies (portable and mobile) for urgent pre-hospital care, working in partnership with Great Western Ambulance Service and two manufacturers. The project’s over-arching aim was to support the provision of treatment by Emergency Care Practitioners (ECPs) in the community, contributing to a reduction in the frequency with which patients are transported.

   Simulation-based testing was carried out in GWAS using a number of different scenarios. The key outputs have been:
   
   a. Market ready portable Modular Treatment Units (MTUs). Three prototypes have been manufactured and evaluated by an expert group and in two user trials.
   b. A vehicle specification for the mobile component of the MTU from five computer-based iterations and a full-size vehicle interior in one user trial.

2. **HACS: The Head Articulation Control System**
   GWAS is the lead clinical partner in an innovative project to design a new cervical (neck) immobilisation device for use following trauma. The current disposable neck collar provides only partial immobilisation, and is known to be associated with a number of complications. This project unites designers from the Helen Hamlyn Centre at the Royal College of Art with medical engineers and ambulance clinicians to design and test a better product.

   HACS extrication testing: relative movements of the head and neck are measured and recorded throughout the extrication process using two complementary technical systems.
This work is funded by the Invention for Innovation (i4i) programme of the National Institute for Health Research (NIHR). GWAS has been involved throughout the design process, providing initial feedback to the team and then participating in a range of quantitative and qualitative assessments of the new device; considering movement, skin pressures, jugular venous flow and the degree of immobilisation achieved during mock extrications from a vehicle. The latter part of this work has required the employment of a full-time research paramedic, and delivered very promising results. A patent has been applied for, and discussions with potential manufacturers are now commencing.

3. REVIVE-Airways: Randomised comparison of the effectiveness of the Laryngeal Mask Airway Supreme, i-gel and current practice in the initial airway management of pre-hospital cardiac arrest: a feasibility study

REVIVE-Airways is a cluster randomised feasibility study comparing the effectiveness of two supraglottic airway devices (SADs) to current practice (principally tracheal intubation) during out of hospital cardiac arrest (OHCA). The study tests the hypothesis that this design is feasible, and capable of identifying clinically significant differences in relevant outcome measures such as patient survival and quality of life.

This feasibility study, funded by the Research for Patient Benefit programme of the NIHR, is more than halfway completed, and is progressing very successfully. Both paramedic and patient recruitment have exceeded their targets, with a high degree of protocol adherence and excellent data quality. Engagement by ambulance staff has proved outstanding.

In January 2013 the research team will begin the process of applying to the NIHR for further funds to complete a full-scale trial of SADs versus usual practice in OHCA. To definitively answer the question, in terms of patient survival, will require the active participation of several UK ambulance Trusts, and preliminary expressions of interest are now being sought from potential collaborators.

For information, South Western Ambulance Service NHS Foundation Trust (SWASFT) is currently exploring the acquisition of Great Western Ambulance Service NHS Trust (GWAS) to create a single ambulance trust providing services across the South West. Subject to Secretary of State approval, the acquisition will be legally effected from 1 February 2013. SWASFT will continue to pursue and invest in the further development of high quality research that will change pre-hospital practice in both the UK and overseas.