



# EMeRGE News

*EMeRGE aims to coordinate, facilitate and promote quality research in Emergency Medicine*

## PUCA Study: Paramedic Ultrasound in Cardiac Arrest.

(Matt Reed)

This January, the EMeRGE team were successfully awarded nearly £20,000 by the Resuscitation Council (UK) to fund a one year collaborative project led by **Matt Reed** and involving Gareth Clegg, Richard Lyon, Rachel O'Brien and Steven Short from the Resuscitation Research Group, Colin Crookston from the Scottish Ambulance Service and Jim Connolly from the RVI in Newcastle.

The project, known as the PUCA (Paramedic Ultrasound in Cardiac Arrest) study will look at the feasibility of training 3RU (Resuscitation Rapid Response Unit) paramedics in focussed Echo in Life Support (ELS) during cardiac arrest in the pre-hospital environment. We also plan to observe in real time, the change in cardiac echo characteristics from when the 3RU team arrive shortly after cardiac arrest, until the patient reaches hospital.

The initial phases of the project are underway with selection of a suitable ultrasound machine to use in the harsh environment of the pre-hospital arena and initial echo training of the study team. During the next phase of the project, the study team will start collecting cardiac images in the pre-hospital arena, and by summer, will embark on training the 3RU paramedics. An exciting project hoping to further improve the quality of pre-hospital cardiac arrest care in Edinburgh.



## Brainwave – can EEG be used to measure team members' cognitive load during resuscitation?

(Gareth Clegg)

The RRG is trialling the use of the B-Alert EEG (Biopac Systems). This kit claims to provide a range of 'Cognitive State Metrics' via 9-channel EEG monitoring. The non-invasive cap sends wireless signals to a base unit for analysis – but will it help train expert resuscitation teams?

Within the acute setting patient data is often chaotic, of variable quality and represents an evolving process in which the clinician at-

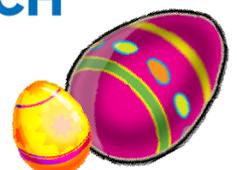


tempts to impose structure to inform patient management. In a time critical resuscitation, the demands of managing yourself, the team and the environment can exceed the capacity of available working memory – there's just not enough 'headspace'. Cognitive load theory seeks to resolve multiple domains of knowledge, skills and behaviours within a complex medical environment into a cohesive and robust management strategy. Application of this theory during instructional design may enable learners to optimise their ability to manage tasks within complex chaotic clinical environments.

Dr David Lowe, assisted by Scott James and Adam Lloyd are running a series of pilot experiments using the B-Alert system over the next few weeks to see whether it gives us a reliable measure of when 'headspace' has been filled – when cognitive load is high. This might help to design better training strategies for better teams.



**RESUSCITATION  
RESEARCH  
GROUP**



## Edinburgh Cardiac Arrest Symposium

The Edinburgh Cardiac Arrest Symposium 2014 took place on March the 27th. It was a fantastic event attended by over 260 people from a variety of locations and with a range of job titles – all had an interest in improving outcomes after OHCA.



The first session chaired by Gerry Egan started with Gareth Clegg's inspiring introduction. The first speaker, Jerry Overton, gave a lecture on dispatch for OHCA while Mark Whitbread focused on Advanced Paramedics in OHCA. The second session chaired by Richard Lyon continued after coffee with an examination of the role of mechanical CPR in prehospital resuscitation after OHCA.

Colin Robertson chaired the third session, which took place after lunch. First he introduced Niklas Nielsen – who gave the the Medic One Lecture. This was followed by presentations covering suspended animation and PCI after OHCA.

The final part of the day began with a discussion of the crucial role of non-technical skills in prehospital resuscitation and was followed by a video demonstration of the 3RU team and their 'perfect 10' protocol. Colin Robertson ended the day's proceedings with an excellent, entertaining and somewhat subversive vision of the future of OHCA resuscitation.



Event Photography Ola Gruszczynska [www.3faeries.com](http://www.3faeries.com)

Congrats goes to **Jon Carter**, top recruiter for LAVAS and winner of the prize block of cheese! Recruitment is currently at 259 patients. There will be a **special prize** for the person who recruits the **300<sup>th</sup> patient!**



### EMERGE New Starts

In May 2014 we welcome 4 new starts to EMeRGE. **Polly Black, Jen Simpson, Kirsty Simpson** and **Amy Dunn** will all be joining us as research nurses and we look forward to having them on our team!



Please remember to contact our Research Nurses on pager no: **07659524601**  
Monday – Friday for support with recruitment

### Recruitment Update

EMERGE are currently recruiting to six studies:

**HighSTEACS - 576**  
**HALT-IT - 30**  
**LAVAS - 259**  
**ExPRES-SEPSIS - 22**  
**PREFER - 15**  
**TICH-2 - 0**



### The EMeRGE Team

#### Consultants:

Dr Alasdair Gray  
Dr Gareth Clegg  
Dr Matt Reed  
Dr Tom Beattie  
Dr Stephen Lynch

#### Trainees:

Dr Richard Lyon      Dr Deepankar Datta

#### Research Nurses:

Judy Coyle      Alison Glover  
Julia Grahamslaw      Rachel O'Brien  
Denise Lenihan

#### Research Administrator:

Ola Gruszczynska (newsletter, websites)



FOR MORE INFORMATION

Pop in to our office, visit our intranet page: [INTRANET > Healthcare > A-Z > EMeRGE](#) or find us on [www.nhslothian.scot.nhs.uk/EMERGE](http://www.nhslothian.scot.nhs.uk/EMERGE)