



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

Top Research Award for the 3RU Team

Dr Richard Lyon

The TOPCAT2 project, led by Dr Gareth Clegg, has recently completed its first year by winning the 'Best of the Best' abstract at the European Resuscitation Council Congress in Vienna.

Emerging from the results of Dr Richard Lyon's TOPCAT study into pre-hospital resuscitation, there was a clear need to provide a specialist response to out-of-hospital cardiac arrest (OHCA).

The TOPCAT2 study entailed the formation of a **Resuscitation Rapid Response Unit (3RU)** to attend arrests in the Edinburgh area. Having a small, specially trained team of paramedics from the Scottish Ambulance Service who are tasked to OHCA allows time critical resuscitation to be led by paramedics with extensive experience in OHCA management. The group has shown that this not only improves resuscitation quality, but is also saving lives.

Ordinarily, paramedics in Edinburgh will encounter <5 OHCA per year.

The 3RU paramedics undergo regular advanced life support training with both ED clinicians and Mr Steven Short from the NHS Lothian Resuscitation Department. Using a simulator environment with video feedback the team has also undertaken training in non-technical skills including clinical decision-making, team leadership and situational awareness.

The TOPCAT2 project is one element of the EMeRGE Resuscitation Research Group's program of work to optimise the 'Chain of Survival' after OHCA.

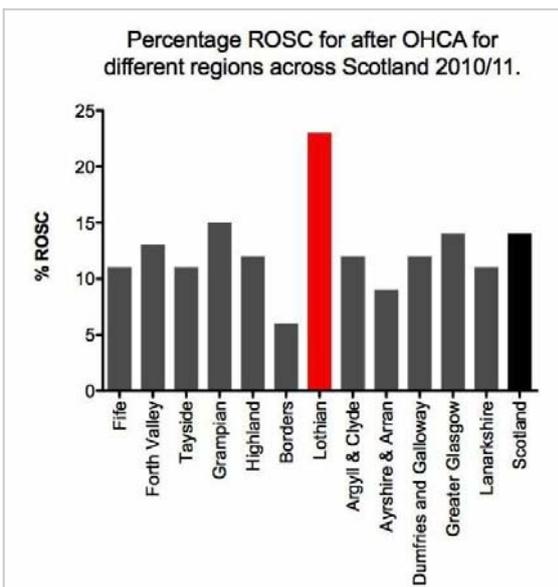
Call for Help: Emergency 999 calls are systematically downloaded from the Ambulance Control Centre and analysed with the help of cognitive psychologists and linguistics

experts at the University of Edinburgh to identify factors influencing dispatch-guided CPR.

Basic Life Support and Defibrillation: Quality of pre-hospital resuscitation is continually monitored using prehospital defibrillator downloads which are reviewed at a bi-monthly training meeting. Steven Short runs monthly resuscitation skills training open to all local ambulance personnel to ensure high quality prehospital resuscitation. The 3RU team are currently evaluating mechanical CPR devices to allow transport to hospital with on-going CPR.

Cardio-cerebral resuscitation: On arrival in hospital, there is an ED/ICU protocol for the initiation of therapeutic hypothermia and future research on the role of emergency angiography is planned. Initial results indicate the work of the Resuscitation Research Group is having an impact on local survival from OHCA.

As shown below, the rate-of-return of spontaneous circulation in Lothian is now the best in



Scotland and the number of patients returning home after an out of hospital VF arrest are among the highest in the UK.

In October 2012, Mr Colin Crookston, Team Leader and Paramedic Lead for 3RU, and Dr Richard Lyon travelled to the European Resuscitation Council congress in Vienna to represent the team. Several pieces of research from the group were presented



Mr Colin Crookston, representing the 3RU team, is presented with the top research award from the Chair of the European Resuscitation Council, Prof Maaret Castrén.

and the abstract entitled: 'A program of Education, Audit and Leadership can improve outcomes after Out-of-Hospital Cardiac Arrest - the TOPCAT2 project' was shortlisted in the 'best of the best' prize section from a shortlist of over 400 international entrants. Following the presentation and judging by an expert panel, the TOPCAT2 project was awarded first prize.

The awards represents a real honour for all those involved- a true team effort.

The group has recently been awarded a Chest, Heart and Stroke Scotland project grant to continue and develop this important work and hopefully save many more Scottish lives.

A big thank you to those who have supported the TOPCAT2 project.

Successful implementation of strategies to transform ED transfusion practice

Dr Matt Reed

On the 12th February 2013 we were delighted to be informed that the RIE Emergency Department had been shortlisted for the **Emergency Medicine Team of the Year** category at the **BMJ Group Improving Health Awards 2013**.

This prestigious award recognised work done in the ED over the last four years, which transformed our transfusion practice. In September 2008, we decided to look at the patterns of blood component usage

during 2007 within the ED. This revealed that 3209 units of blood component were ordered, only 39.5% were transfused and 9.5% were unaccounted for. Blood Safety and Quality Regulations introduced in 2005 required by law that every unit could be traced from donor to recipient. Having the fate of 289 units as unknown was not acceptable. Blood is an extremely valuable commodity, a finite resource relying on continuous public donation to maintain adequate stocks. We had to address our poor traceability, our high blood usage, and our ordering of units, which were then not transfused.

Firstly, better links between the ED and the Scottish National Blood Transfusion Service (SNBTS) were established. A set of improvement measures were then implemented including better ED medical and nursing staff education with increased awareness of the mandatory Module 1 Safe Blood Transfusion, monthly traceability reports sent to the clinical management teams, the introduction of an ED transfusion guideline, the transfer of the large

ED blood fridge to a smaller blood fridge stored in the resuscitation room and limiting storage to emergency O negative only, having a named ED transfusion consultant and ED transfusion link nurse, ED consultant representation on the Hospital Transfusion Group and finally increasing awareness of Emergency Transfusion by ED based research into ROTEM near-patient coagulation testing.

In June 2012, we re-audited our practice. There was a 64% reduction in blood component ordering (3209 vs. 1034 units), a 39% reduction in blood component transfusion (1131 vs. 687 units), a 68% increase in the proportion of

ordered units that were transfused and a 96% reduction in unaccounted units (214 vs. 9 units) between 2007 and 2011. Our initial review in 2008 was the first and only published detailed look at ED blood transfusion practices in. In attempting to cost the savings resulting from our changes we showed that SNBTS spent £306,437 less in 2011 compared to 2007 on handling and issuing ED transfusion requests. Our improvements are immediately generalizable across the UK and the potential savings to the NHS are enormous.

Huge thanks are required to **Catherine Innes** and **Dr Lynn Manson** in SNBTS, **Hannah Beckwith** and **Sarah-Louise Kelly**, who carried out the research, and **Kate McIlwraith** and **Rachel O'Brien**, our ED SNBTS link nurses.

However most of all thanks to the ED nursing and medical staff who have implemented these changes so effectively. The future aim is to maintain these improvements and to focus on reducing wastage, a tough but important goal.



Representatives from the ED will be attending the black tie BMJ award ceremony in London on 9th May 2013

Good Luck!

In the photograph (from left to right): Dr Matt Reed (Project Lead), Catherine Innes (SNBTS), Mr Dave Caesar (Clinical Director), Sarah-Louise Kelly (medical student), Neil Boyle (Clinical Nurse Manager), Rachel O'Brien (Research Nurse)

Congrats to Julia!

Julia Grahamslaw, our newest addition to the research nurse team has passed her first research module, part of a new course run by Napier University.

We asked Julia about this experience.

'Joining The Emergency Department as a new recruit 5 years ago I was exposed to many new and exciting ways of working. One of these was the opportunity to help and support the research team by being involved in the care of patients who were being entered into the number of clinical trials carried out within the department.

Although I found the research process a little daunting at first I soon realised the value of clinical trials and began to feel very enthusiastic about research and the importance of forward thinking. I became a link nurse for one of the trials and when an opportunity arose to work part time with the EMERGE team I jumped at the chance!

I am now working towards a research degree which involves 3 modules. The first module emphasised the history and ethical issues surrounding clinical trials and the legislation that is in place today. The knowledge I have gained is invaluable, with this and the experience I have obtained from EMERGE I am looking forward to the 2nd module.'

Save the date!

On the 6th June 2013 EMERGE and the ED will be hosting the 2013 Scottish CEM Annual Clinical Meeting. Call for abstracts open until 31st March 2013.

The scientific programme will focus on education in Emergency Medicine, undergraduate to retiral. For details visit CEM website.

Those of you who remember Robin Mitchell will be pleased to know that his family will join us for the day to present the Robin Mitchell award.

Projects Update

SNAP and 3Mg, two big and lengthy trials, have finished recruiting in 2012 and results are expected some time this year.

We will soon stop recruiting to TRIGGER (end of Feb 2013) and AHEAD (end of March 2013) but not to worry, there are a few more exciting projects in the pipeline! Keep an eye on future newsletters.

In 2012 EMERGE have expanded by welcoming new nurses, including **Alison Glover**, senior research nurse seconded from SNBTS to work on the TRIGGER Trial. It has been delightful to have Alison with us and enjoy her expertise just as much as her bubbly personality. Establishing links outside the ED is of vital importance to research and we are always open to collaborations.

The EMERGE Team

Consultants:

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

Trainees:

Dr Richard Lyon Dr Shirin Brady

Research Nurses:

Moyra Masson Judy Coyle
Julia Grahamslaw Rachel O'Brien
Jan Gilchrist Alison Glover

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