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Highlights from this issue

doi:10.1136/emered-2014-203943

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Pre hospital research

This issue covers a number of important papers in pre hospital care, the starting point on the patient's emergency episode. What happens in the pre hospital setting can influence the whole patient pathway and in recent years paramedics have developed skills which could reduce the demand on emergency departments, yet there is a paucity of rigorous research in this area of practice. A systemic review of the literature by Rachel Evans and colleagues to identify evidence of highly trained paramedics and the impact of this on patient care, general practices and emergency departments found that whilst there are many viable extra skills in paramedics the evidence was not strong enough on which to base policy.

Continuing with this theme, the need for greater research and the importance of strengthening the evidence base in this setting and conducting clinical trials has also been highlighted by Hargreaves *et al.* Again, based on a review of existing literature, they developed a questionnaire to explore paramedics' views on research and pre hospital clinical trials. They sent their questionnaire to 300 paramedics at randomly selected ambulance stations in Yorkshire, UK and received a 32% response rate which although small was a starting point. The responses and views expressed suggest that paramedics are interested and have some understanding of research but are realistic about the practicality and ethical issues such as consent and randomisation that may be barriers to conducting research in the pre hospital setting. These are not unreasonable views as anyone who has conducted RCT's in the emergency setting will testify it's not an activity for the faint hearted and requires committed champions. Clearly we need more discussion if we are to strengthen the evidence base and progress this area of practice.

Are we nearly there yet?

Managing acute pain in injured or ill children in the pre hospital setting often seems to fall short of what is really needed with some studies showing that adults who describe the same pain scores as children twice as likely to receive opiate analgesia. So why this disparity in practice? Murphy *et al* undertook a qualitative study with a national cohort of advanced paramedics using focus group interviews to understand the barriers to administering better analgesia to children in the pre hospital setting. Some of their

findings will have resonance with those of us who manage children in emergency settings. Limited exposure to children in pre hospital settings, difficulties in assessing degree of pain in small children and difficulty in administering analgesia to distressed and uncooperative children were all cited as barriers. Perhaps more surprisingly but less excusable was short transport times to the hospital and or a "medical" cause of pain. A short journey in severe pain will be a very long journey to a distressed child. The well recognised plaintiff cry of "are we nearly there yet" will most likely come from the distressed parent on this occasion. Read on to see what we need to do to improve this situation and support AP's in this area of practice.

A role for nitric oxide?

Nitric oxide is said to benefit patients with acute pulmonary embolism but the literature to date cites only case reports or case series conducted without a structured protocol. Kline *et al* in Indianapolis developed a clinical protocol for a phase 1 trial to treat patients with a CT confirmed PE and moderate to severe dyspnoea. In this study dyspnoea was assessed using the Borg score, oxygenation by pulse oximetry, and haemodynamic status by shock index. The authors found that inhaled Nitric oxide reduced dyspnoea in all eight patients that were enrolled in the study and none suffered adverse events. Although this is only a small study and clearly needs further research, these preliminary findings may be worth bearing in mind when managing severe dyspnoea in a patient with PE for as the authors suggest "a compassionate use protocol".

Who can report cranial CT's?

One of the great advances and satisfactions of emergency care is being able to organise an expeditious CT for a patient with an intracranial emergency. This sense of satisfaction can quickly turn to frustration if there is a long delay to reporting the scan. Reporting CT scans is a skilled business which takes time but delayed reporting can delay treatment so you may be interested to read a prospective blinded study by Jamal and colleagues which assessed the accuracy of senior emergency physicians reporting cranial CT scans following structured teaching of 3 hours duration. Out of 360 scans concordance between the consultant radiologists and emergency physicians was found in 339 (94%) of cases. No adverse outcomes

were found in the discordant group and all cases of extradural, subdural and subarachnoid haemorrhage were identified by the emergency physicians. So, is this a safe alternative to having consistent access to consultant radiologists and timely reports? You will need to read Jamal's paper to decide.

"Something in my eye"

Patients with corneal foreign bodies often present to emergency departments and the removal techniques used by emergency clinicians vary irrespective of what may be considered to be the "gold standard". Quirke *et al* from Galway University Hospital conducted a prospective observational study comparing slit lamp aided versus non slit lamp aided removal. They found patient satisfaction, complications and visual acuity were similar for the two methods but there was a trend for increased pain at 12 and 24 hours in the non slit lamp aided technique. So clearly the slit lamp is the way forward and the authors of this study suggest that emergency physicians particularly those who regularly see eye injuries be given more intensive training. Given that nurse practitioners increasingly manage these presentations I would suggest that this also applies to them.

Good NEWS for sepsis?

A standardised national early warning score (NEWS) was introduced across the NHS in 2012. The College of Emergency Medicine welcomed the introduction of a national tool such as NEWS but advised that as it had not been validated for use in ED's further evaluation of its utility would be needed. It is relevant then that Corfield *et al* conducted a national audit across 20 ED's in Scotland to determine whether a single NEWS score on arrival in ED is a predictor of outcome of either, in hospital death within 30 days, or intensive care unit (ICU) admission within 2 days in patients with sepsis. Based on their study which included 2003 patients, they concluded that an increased NEWS on arrival in the ED is associated with higher odds of adverse outcomes among patients with sepsis. They suggest that the use of NEWS could facilitate patient pathways to ensure triage to a high acuity area of the ED and senior clinical input at an earlier stage. Early identification and intervention in cases of sepsis despite the Surviving Sepsis Campaign continues to elude us so read on to get the good NEWS.