

Important recommendations for future practice regarding departmental handover can be made, most notably, the need to create a civil and pleasant working environment where doctors can flourish.

### 039 PERIPHERAL ADMINISTRATION OF VASOPRESSORS IN TRANSPORT

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**Background** Management of shocked patients frequently requires vasopressor (epinephrine/norepinephrine) administration. Although less potent vasoactive agents are commonly delivered peripherally, historical concerns surround peripheral epinephrine and particularly norepinephrine use; these are primarily administered as infusions via central venous catheter (CVC). Concerns centre on potential extravasation and subsequent skin or tissue necrosis. However, recent studies suggest risks maybe lower than perceived. In the pre-hospital setting, circumstance may demand use of epinephrine/norepinephrine but preclude CVC insertion.

In this study we assessed current practice for peripheral vasopressor usage in a national pre-hospital and retrieval service and associated complications.

**Method and results** A retrospective, cohort study, using routinely collected data from the EMRS electronic record, cross-referenced against contemporaneous paper medical records from 2004–2018. All primary (pre-hospital) and secondary (from remote/rural healthcare facilities) patients over the age of 16 requiring peripheral vasopressors for shock were included.

Data was collected on demographic information, retrieval site and mode of transport, vasopressor used, shock type, duration of use and subsequent complications. Complications were defined as immediate, noted by retrieval team on mission paperwork; or delayed, noted at 24-hour follow-up.

Descriptive statistics for cohort study have been used and all analyses conducted using Stata v12.0

**Conclusions** 6093 missions were reviewed. Vasopressors were administered to 6.8% (417/6093) of patients. Epinephrine infusions were administered to 129 patients and 307 required norepinephrine (19 received both). Peripheral vasopressor infusions were used in 16.1% (67/417) of infusions. Of peripheral infusions, 40 patients received epinephrine and 30 received norepinephrine (three received both). Three epinephrine infusions were during primary missions, all norepinephrine infusions were on secondary retrievals.

Distributive shock was the commonest indication for both (47.5% & 73.3%). There were no reported complications during missions or at 24-hours.

Results suggest pre-hospital use of peripheral epinephrine/norepinephrine is relatively common and safe, with no complications reported across 15 years of practice.

### 040 PREHOSPITAL NATIONAL EARLY WARNING SCORE PREDICTS PATIENT DISPOSITION ALSO IN JAPAN

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The National early warning score (NEWS) was originally developed in the UK for hospitalized patients. We examined if NEWS can be applied for emergency transported patients in Japan.

We assessed the patients transported to one hospital between April 2017 to March 2018. We calculated NEWS from the vitals recorded by ambulance staff. Emergency department (ED) disposition data were categorized into the following groups depending on their outcome: discharged from ED, admitted to a ward, admitted to the intensive care unit or died in ED. We assessed the predictive performance of the NEWS for combined patient dispositions using receiver operating characteristics curves, from which possible cut-off values for risk categorizations were derived. Patient dispositions were compared between NEWS-based three categories adjusting for age, gender and presence of traumatic injury.

**Results** Of 2,847 patients, mean ( $\pm$ standard deviation) NEWS of patients who discharged from ED ( $n=1330$ ), admitted to a ward ( $n=1263$ ), admitted to the ICU ( $n=232$ ), and died in ED ( $n=22$ ) were  $3.7\pm 2.9$ ,  $6.3\pm 3.8$ ,  $9.4\pm 4.0$ ,  $11.7\pm 2.9$ , respectively. Prehospital NEWS's C-statistics (95% confidence interval) for admission to a ward/the ICU or death in ED was 0.733(0.715–0.751), admission to the ICU or death in ED was 0.807 (0.780–0.833), and death in ED was 0.900 (0.868–0.933). After adjusting for age, gender and trauma, odds ratio (95% confidence interval) for admission to the ICU or death in ED of high-risk NEWS category ( $\geq 7$ ) was 13.8 (8.9–21.6) and middle category (5 or 6) was 4.2 (2.5–7.1), each compared to low-risk category ( $\leq 4$ ).

**Conclusion** Our study shows prehospital NEWS can identify patients at risk of adverse outcomes also in Japan.

### 041 PRE-HOSPITAL PEWS IS NOT A USEFUL PREDICTOR OF THE NEED FOR HOSPITAL ADMISSION FROM ED

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**Objective** Physiological derangement, as measured by Paediatric Early Warning Score (PEWS) is used to try and identify children with critical illness at an early point to identify and intervene in children at risk. PEWS have shown some utility as a track and trigger system in hospital and also as a predictor of adverse outcome both in and out of hospital. We wanted to examine whether a single pre-hospital PEWS, based on observations made by ambulance staff, was associated with the need for hospital admission.

**Methods** A retrospective analysis of all patients aged  $<16$  transported to hospital by the Scottish Ambulance Survey