sustained. EOLC discussions did not show any definite improvement.

Frailty is a clinically important entity that is recognisable and accurately measurable by emergency physicians. If appropriately used, the CFS can help guide clinical care plans for patients.

Simple interventions in a local ED setting were able to improve documentation and utilisation of the CFS to provide patient-centred care for older patients.

Changing to a culture more open to EOLC discussions in the emergency setting was noted to be difficult both from our staff survey and audit data. This will need a more focused approach to improve departmental culture to have, and staff comfort to start an EOLC conversation.

We will continue to advocate for use of CFS, and for better care for all our older patients.

033 DIAGNOSTIC INVESTIGATION AND PREDICTION OF SHOCK (DIPS), IN THE EMERGENCY DEPARTMENT: A PROSPECTIVE OBSERVATIONAL STUDY

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Background Currently there exists no widely accepted, objective tool for determining the probability of shock in the emergency department (ED). Associated mortality outcomes remain unacceptably high. Using variables that are associated with shock and available in the ED we aimed to derive an objective tool for estimating the probability of shock.

Methods In a prospective, longitudinal study conducted in the ED, Cardiff, adult patients aged ≥18 years, presenting with NEWS ≥3 were recruited. We derived a model consisting of 8 variables, and validated it using bootstrap (1000 iterations; random number seed: 978). The primary outcome was combined 30-day mortality or ICU admission.

Results 361 patients were recruited (mean age 69.4 ±15.9 years; male 62.7%; 80 positive outcome) to the study. The multivariate model variables were: Glasgow Coma Scale 3–8 (Odds ratio (OR) 9.1 (95% CI 1.2–69.4) p=0.0324), 9–12 (OR 1.3 (95% CI 0.4–4.2) p=0.6561); capillary return >4 (OR 8.7, (95% CI 2.9–26.1) p=0.0001), 3–4 (OR 3.7 (95% CI 1.3–10.4); p=0.0113); temperature ≤35°C (OR 5.4, (95% CI 1.8–16.3); p=0.0045); bilirubin >34 (OR 4.9, (95% CI 1.6–14.5); p=0.0045); oxygen supplement (OR 1.9, (95% CI 1.0–3.7); p=0.06); respiratory rate >24 (OR 2.6, (95% CI 1.3–5.1); p=0.0069); and albumin <35 (OR 1.9, (95% CI 0.9–3.8); p=0.09).

The model was a 100-point scale where 0 was low probability and 100 was maximal probability of shock. The AUC was 0.801 (95% CI 0.756–0.841), accuracy 82%, p<0.0001, Hosmer & Lemeshow test 9.19 (p=0.326). At a cut off >35, and Youden Index 0.4557 the sensitivity and specificity were 56.2% (95% CI 44.7–67.3) and 89.3% (95% CI 85.1–92.7) respectively. At a fixed specificity of 80%, the estimated sensitivity was 60.5% (95% CI 49.4–71.3). At a fixed sensitivity of 80%, the estimated specificity was 62.3% (95% CI 45.9–71.2).

Conclusions An accurate 7-point ED tool for shock has been derived and internally validated.
1042 patients were included, of which 125 (12%) had CVD. The 28-day mortality rate in the total population was 4.8%, and of those 64% had CVD. CVD was associated with a blunt mechanism of injury (81.6%), male gender (81.6%), and a high injury severity score (median=27). In the CVD group the major haemorrhage protocol was activated in 76.8% of patients, and 73.6% received more than 4 units of red blood cells in the first 24 hours.

Early CVD was more prevalent than any other single-system dysfunction assessed with the SOFA. All deaths with single organ failure in a SOFA domain other than cardiovascular had concurrent CVD. In predicting 28-day mortality, CVD had an AUROC of .882 (CI=0.810–0.955, p=0.000), odds ratio of 57.2, and sensitivity and specificity of 86.7% and 89.7% respectively. Multiple regression analysis identified admission base deficit, admission systolic blood pressure and heart rate, increased age, blunt mechanism, increased injury severity score, and 24-hour crystalloid administration as strong predictors of developing CVD.

CVD is the contemporary driver of in-hospital non-head injured trauma mortality. The resuscitation phase is the window of opportunity for discovery of novel treatments.

ENSURING DATA ADEQUACY IN DEVELOPMENT OF A MAJOR TRAUMA CLINICAL DECISION APP

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Background Emergency medicine clinicians from the QEUH research team EMQUIRE are working alongside design agency, Daysix, and the Scottish Trauma Network to develop a pioneering clinical decision support app to be used in major trauma.

The development of the major trauma app will support clinicians to achieve three key aims:

1. Robust data collection
2. Cognitive aids to support and prompt clinicians
3. Provision of a reliable framework

When creating a innovate, digital tool to be used in the medical setting, it is essential that it satisfies CE marking and MHRA regulations.

Method and results A variety of methods have been used to ensure the trauma app provides reliable, valid and adequate data;

- A systematic review of existing paper trauma proformas within Scotland was performed and data points recorded. A review of 10 major trauma cases and documentation from each region was then taken place. This information was used to establish a minimum data set
- TARN and STAG data standards were reviewed, and the app data fields reflect this
- Cognitive aids and prompts within the app have a strong evidence base – literature from the ATLS manual and case-based evidence