TBI outcomes. All guidelines recommended increased CT imaging. The second guideline recommended the management of patients with severe TBI in specialist neuroscience centres.

This study uses national data and interrupted time series analysis to assess the impact of the NICE guidelines.

Individual level Office of National Statistics (ONS) cause of death data linked to Hospital Episode Statistics for inpatient admissions in England between 1998–2017 were used to estimate the monthly population mortality and admission rate for TBI.

An interrupted time series analysis was conducted with intervention points when each guideline was introduced. The analysis was stratified by guideline recommendation specific age groups (0–15, 16–64 and 65+).

The monthly TBI mortality and admission rate in the 65+ age group increased from 0.5 to 1.5 and 10 to 30 per 100, 000 population respectively. The increasing mortality rate was unaffected by the introduction any of the guidelines.

The introduction of the 2nd NICE Head Injury guideline was associated with a significant reduction in the monthly TBI mortality rate in 16–64 age group (−0.005; 95% CI: −0.002 to −0.007).

In the 0–15 age group the TBI mortality rate fell from around 0.05 to 0.01 per 100 000 population, the trend was unaffected by the guidelines.

Conclusion The introduction of NICE head injury guidelines was associated with reduced population based mortality rates after specialist care was recommended for severe TBI. The improvement was solely observed in 16–64 year olds.

The cause of the observed increased admission and mortality rate in those 65+ and potential treatments for TBI in this age group requires further investigation.

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[1]Callum Prosser, [2]David Edwards, [1]Fiona Lecky, [3]Omar Bouamra. [1]University of Sheffield; [2]National Health Service; [3]Faculty of Biology, Medicine and Health The University of Manchester

Background The recent introduction of major trauma networks throughout England in 2012 has changed how patients with suspected traumatic brain injury (TBI) are managed at the scene of injury. Selecting certain head trauma patients with suspected TBI for bypass to a more distant specialist neurological centre (SNC) is the networks function but may delay resuscitation whilst expediting neurosurgical/critical care. This comparative effectiveness research study analysed the impact of this strategy on the risk adjusted survival rates of patients confirmed to have a TBI on brain CT scan.

Method and results The study employed data from the Trauma Audit and Research Network. Adult patients with a TBI on CT scan were included if they presented between June 2015 to February 2016 to SNCs or non-specialist acute hospitals (NSAH) in the North of England (South Cumbria, Lancashire and the North East Region). Patients were identified as having bypassed a nearer NSAH emergency department (ED) to a SNC using google maps enabling exclusion of patients whose nearest ED was within a SNC. Their risk adjusted survival was compared to TBI patients who received primary treatment at a NSAH with subsequent secondary transfer to a SNC or

who remained at the NSAH until discharge or death. A multi-variate logistic regression model predicting survival after TBI (Ps14[n]) was utilised to adjust for variation in casemix between the cohorts.

Conclusions 84 of 339 (25%) of TBI patients bypassed a nearer NSAH to a SNC, whilst 75% received primary treatment at an NSAH (n=255). There was no significant difference in the standardised excess survival rate between the two cohorts; shown as +2.55% for bypass (−5.09% to +10.20%) versus −1.49% for non-bypass (−5.34% to +2.36%).

No significant survival benefit was identified for TBI patients who bypassed the nearest ED compared to those receiving treatment at the nearest NSAH.

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[1]Matt Reed, [2]Neil Grubb, [2]Chris Lang, [3]Rachel O'Brien, [4]Kirsty Simpson, [3]Mia Padarenga, [1]Alison Grant, [5]Sharon Tuck, [6]Liza Keating, [7]Frank Coffey, [8]Lucy Jones, [9]Tim Harris, [10]Gavin Lloyd, [11]James Gagg, [12]Jason Smith. [1]Emergency Medicine Research Group Edinburgh (EMERGE), Royal Infirmary of Edinburgh; [2]Department of Cardiology, Royal Infirmary of Edinburgh; [3]Emergency Medicine Research Group Edinburgh (EMERGE), Department of Emergency Medicine, Royal Infirmary of Edinburgh; [4]Emergency Medicine Research Group Edinburgh (EMERGE); [5]Edinburgh Clinical Research Facility, Epidemiology and Statistics Core, University of Edinburgh; [6]Emergency Department, Royal Berkshire NHS Foundation Trust; [7]DREEAM – Department of Research and Education in Emergency Medicine, Acute Medicine and Major Trauma; [8]Chesterfield Royal Hospital NHS Foundation Trust; [9]Queen Mary's University; [10]Royal Devon and Exeter Hospital; [11]Musgrove Park Hospital; [12]Emergency Department, University Hospitals Plymouth NHS Trust

The IPED study showed that use of a smartphone-based event recorder in ED patients presenting with palpitation or pre-syncope, increased the number of patients in whom an ECG was captured during symptoms over five-fold to more than 55% at 90 days (Reed MJ et al. Lancet eClinical Medicine 2019; 8: 37–46).

This pre-planned analysis looked at the ability of ED clinicians to predict cardiac arrhythmia in patients presenting to the ED with palpitation or pre-syncope.
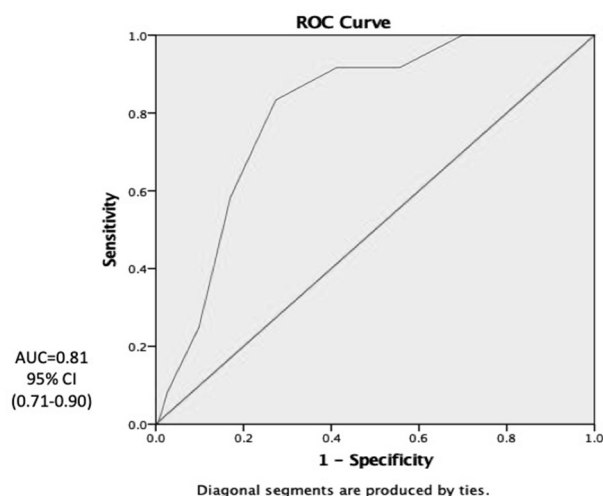
Abstract 018 Figure 1 ROC analysis of ED clinician likelihood rating for symptomatic cardiac dysrhythmia at 90 days

Pre-planned sub study analysis of a randomised controlled multi-centre trial. Participants ≥16 years old presenting to 10 UK hospital EDs with palpitation or pre-syncope whose underlying ECG rhythm during these episodes remained undiagnosed after ED assessmentwere enrolled. The treating ED clinician was asked to rate the likelihood of underlying cardiac arrhythmia ranging from 1 (least likely) to 10 (most likely). Participants were then randomised to either an intervention group using a smartphone-based event recorder or a standard care control group. Primary endpoint of this sub study was symptomatic cardiac arrhythmia at 90 days.

243 patients were enrolled. 6 patients had no ED clinician likelihood rating recorded and two further patients were lost to follow-up leaving 235 available for analysis. There were 12 patients recording a symptomatic cardiac arrhythmia at 90 days. These were atrial fibrillation (8), SVT (3), sinus bradycardia (<40 bpm; 1) and atrial flutter (1). One patient recorded 2 categories of arrhythmia. The AUC for prediction of cardiac arrhythmia was 0.81 (95% CI; 0.71–0.90). An ED clinician likelihood rating of 5 or more had 92% sensitivity and 59% specificity for predicting cardiac arrhythmia.

Conclusion ED clinicians are able to predict the liklihood of cardiac arrhythmia in patients presenting to the ED with palpitation or pre-syncope with reasonable accuracy.

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019 | **CLUB 18–40: WHY DO YOUNG ADULTS ATTEND THE EMERGENCY DEPARTMENT? M**

S Muz Ahmad, Craig Davidson. *University of Edinburgh*

Background Crowding in the Emergency Department (ED) continues to be a challenge across the country. Recent focus has been on the increasingly complex elderly patients. However, data from the Royal Infirmary of Edinburgh (RIE) shows that over the last 10 years, attendances in young adults have doubled, whereas those in over-65s have increased by just 16%. Studies show that patients aged 18–40 are least likely to attend their GP; perhaps they see the ED as a convenient one-stop shop for 24-hour access to care. Until now, literature exploring their motivations to attend the ED has been sparse, often limited to establishing characteristics of a frequent user.

Method and results This project investigated the reasons for attendance to the ED in young adults aged 18–40 and their opinions of the emergency services at the RIE. A survey was conducted for three weeks where 131 patients were recruited at check-in, the waiting room and within department cubicles.

Questions were based around recurrent themes of previous literature, which discussed the ideas of the ED being a convenient system to acquire medical attention at any time of day. Patients were asked about their reasons for attendance and to rate on a Likert scale a series of statements about the ED.

Conclusions Our findings show that patients aged 18–40 in fact, did not consider the ED more convenient in terms of time or location than their GP, nor did they think the ED provides better care.

However once they considered their problem as urgent they did not perceive primary care as being able to accommodate this urgency. Patients therefore present to the ED as the only other option. Understanding this perspective provides potential targets for intervention, allowing patients to be seen by the right person, in the right setting, the first time.

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020 | **DIAGNOSTIC ACCURACY OF THE SIEMENS TNIH ASSAY WITH 0/3 HOUR RULE OUT ALGORITHMS**

[1]Patricia van den Berg, [2]Paul Collinson, [1]Niall Morris, [1]Richard Body. [1]*Manchester University NHS Foundation Trust*; [2]*St George's University Hospitals NHS Foundation Trust*
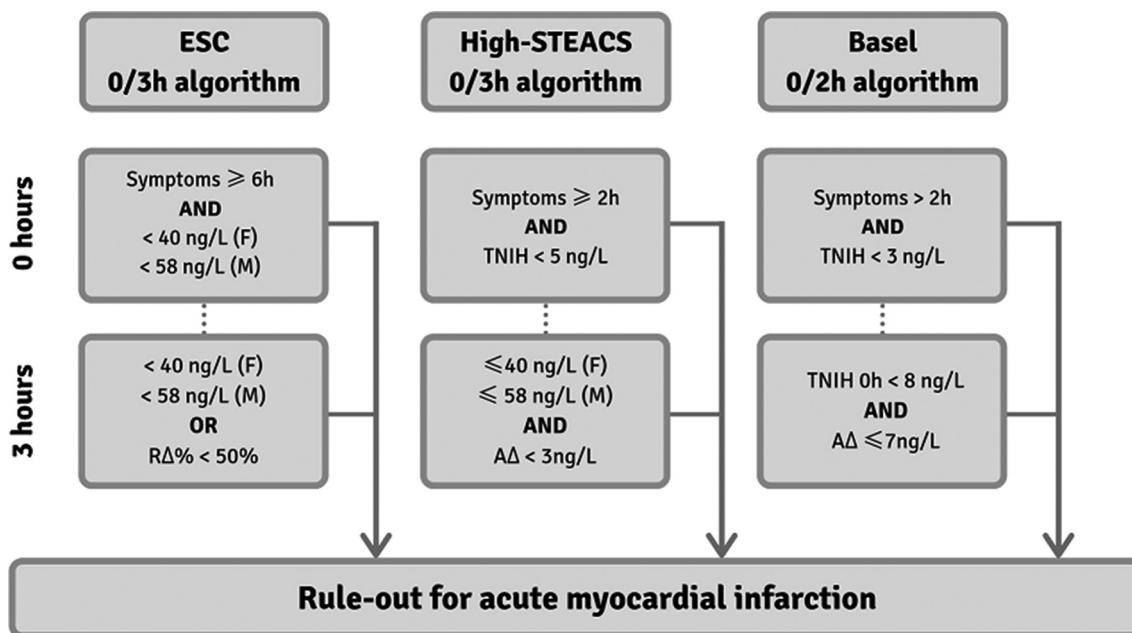
Abstract 020 Figure 1 Siemens TNIH algorithms