

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.

017

### BYPASSING THE NEAREST EMERGENCY DEPARTMENT FOR A MORE DISTANT NEUROSURGICAL CENTRE IN TRAUMATIC BRAIN INJURY PATIENTS

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

10.1136/emered-2019-RCEM.17

**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 multivariate logistic regression model predicting survival after TBI (Ps14<sup>n</sup>) 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.

018

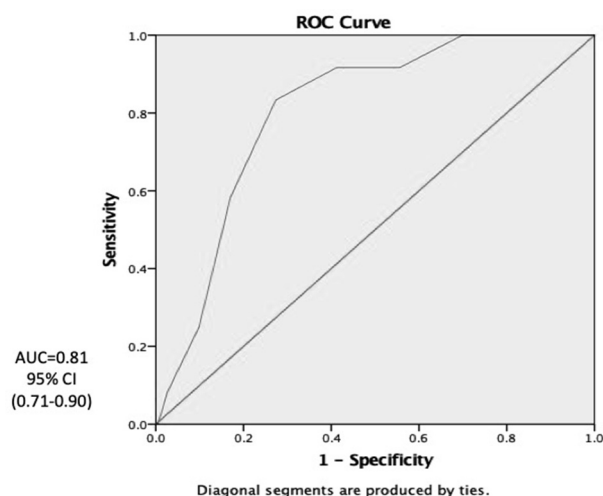
### CLINICIAN PREDICTION OF CARDIAC ARRHYTHMIA IN PATIENTS PRESENTING TO THE ED WITH PALPITATION OR PRE-SYNCOPE

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

10.1136/emered-2019-RCEM.18

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