2139 MAJOR TRAUMA SERVICES IN SPACE AND TIME: A RETROSPECTIVE COHORT STUDY OF GEOSPATIAL AND TEMPORAL FACTORS IN MAJOR TRAUMA AND ITS PRE-HOSPITAL CARE IN THE NORTH OF ENGLAND

[1]Ryan McHenry, [2]Chris Smith. [1]*University Hospital Crosshouse*; [2]*Great North Air Ambulance*

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Aims and Objectives Major trauma is a leading cause of death and disability worldwide, and many healthcare systems seek to improve outcomes following severe injury with provision of pre-hospital critical care (PHCC). Research has focussed on the efficacy of PHCC, but less is known about how the structure of these services may influence their response to major trauma. This study assessed the association between likelihood of PHCC response in major trauma and factors important in their planning and development: geographic isolation, time of day, and tasking mechanism.

Method and Design A local trauma registry, supported with data from the Trauma Audit and Research Network alongside pre-hospital management, identified patients sustaining major trauma (with Injury Severity Score $\geq$9), admitted to Major Trauma Centres in the North of England. Data was extracted on location and time of incident, mechanism of injury, on-scene times, and presence or absence of PHCC team. An isochrone map was constructed for 30-minute intervals to regional Major Trauma Centres to define geographic isolation. Univariate logistic regression compared likelihood of pre-hospital critical care response to that of conventional ambulance response for varying degrees of geographic isolation, day or night period, and mechanism of injury, and multiple linear regression assessed the association between geographic isolation, service response and on-scene time.

Results and Conclusion 2987 incidents were included, 22% attended by PHCC teams. Compared to conventional ambulance services, PHCC teams were more likely to respond major trauma in areas of greater geographic isolation (OR 2.10, 95% CI 1.22-3.48), p=0.005). There were significant differences in the mechanism of injury attended and no significant difference in likelihood of PHCC response by day or night period. PHCC team response and increasing geographic isolation was associated with longer on-scene times (p <0.005).

PHCC teams are more likely to respond in areas of greater geographic isolation and have the potential to mitigate geographic inequalities.

2310 BACK BREAKING WORK: DEVELOPMENT OF DIRECT TO SCAN PATHWAY FOR SUSPECTED CAUDA EQUINA SYNDROME IN A DGH

Katie McTeir, Julie Thomson, Ross Carrie, David Pirie, Katharine Jamieson, Jane Anderson. *NHS Fife*

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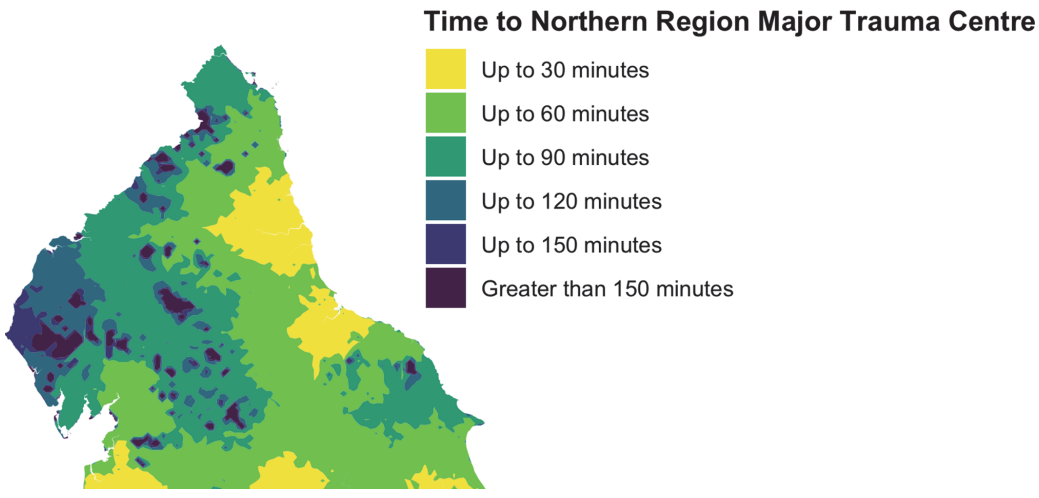
Aims and Objectives Cauda Equina Syndrome (CES) is a neurosurgical emergency that requires urgent assessment and intervention. GIRFT recommendations suggest MRI scanning should be available 24/7 but our ED had limited access in hours and only 2 slots at weekends.

AIM: To increase the availability and earlier access to MRI for patients with suspected cauda equina syndrome.

Method and Design The ED and radiology departments collaborated to develop an MRI direct to scan (DTS) pathway bypassing radiology discussions. Using GIRFT recommendations, specific criteria were selected to ensure robust governance around patient selection with senior ED review. If any alternative diagnosis was considered an extended scan was required and pathway unsuitable. A limited T2 weighted imaging protocol was used reducing scan times to 5 minutes. The pathway was implemented in January 2023 and comparisons made with 4 weekly average data taken from June to December 2019.

Results and Conclusion Since DTS was implemented, 167 patients have required MRI lumbar scans with 71 benefiting from the protocol (48%) The project increased radiology capacity for MRI by 155%. All DTS scans had documented senior review at radiology request to ensure governance. The pathway has reduced average waiting times for MRI scan in hours by 46% and in OOH period by 58%.There has been an increase in number of positive cases from 4.2% to 6.5%. The number of hospital admissions and inter-hospital transfers has reduced by 50%.

The DTS protocol has significantly reduced patient waiting times allowing earlier diagnosis of CES. Increased accessibility



Abstract 2139 Figure 1