COMPARATIVE ANALYSIS OF MAJOR INCIDENT TRIAGE TOOLS IN CHILDREN – A UK POPULATION-BASED ANALYSIS

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Methods/Design A ten-year retrospective database review of TARN data for paediatric patients (<16 years) was performed. Primary outcome was identification of patients receiving one or more LSIs from a previously defined list. Secondary outcomes included mortality and prediction of ISS > 15. Primary analysis was conducted on patients with complete pre-hospital physiological data with planned secondary analyses using first recorded physiological data. Performance characteristics were evaluated using sensitivity, specificity, under and over-triage.

Results 15,133 patients met TARN inclusion criteria. 4,962 (32.8%) had complete pre-hospital physiological data and 8,255 (54.5%) had complete first recorded data. Male patients predominated (69.5%), sustaining blunt trauma (95.4%) with a median ISS of 9. 875 patients (17.6%) reached at least one LSI.

The SPTT demonstrated the greatest sensitivity of all triage tools at identifying need for LSI (92.2%) but was associated with the highest rate of over-triage (75.0%). Both the PTT (sensitivity 34.1%) and JumpSTART (sensitivity 45.0%) performed less well at identifying LSI. By contrast, the adult MPTT-24 triage tool had the second highest sensitivity (80.8%) with tolerable rates of over-triage (70.2%).

Conclusion The SPTT and MPTT-24 outperform existing paediatric triage tools at identifying those patients requiring LSIs. This may necessitate a change in recommended practice. Further work is needed to determine the optimum method of paediatric major incident triage, but consideration should be given to simplifying major incident triage by the use of one generic tool (the MPTT-24) for adults and children.

Aims/Objectives/Background Aims/Objectives/Background We aimed to compare adolescent mortality rates between different types of major trauma centre (MTC or level 1; adult, children’s and mixed). Methods/Data Data were obtained from TARN (Trauma Audit Research Network) from English sites over a 6-year period (2012–2018), with adolescence defined as 10–24 years. Results are presented using descriptive statistics. Patient characteristics were compared using the Kruskal-Wallis test with Dunn’s post-hoc analysis for pairwise comparison and χ² test for categorical variables.

Results/Conclusions 21,033 cases met inclusion criteria. Trauma-related 30-day crude mortality rates by MTC type were 2.5% (children’s), 4.4% (mixed) and 4.9% (adult). Logistic regression accounting for injury severity, mechanism of injury, physiological parameters and ‘hospital ID’ resulted in adjusted odds of mortality of 2.41 (95% CI 1.31 to 4.43; p=0.005) and 1.85 (95% CI 1.03 to 3.35; p=0.041) in adult and mixed MTCs, respectively when compared with children’s MTCs. In three subgroup analyses the same trend was noted.

In adolescents aged 14–17.99 years old, those managed in a children’s MTC had the lowest mortality rate at 2.3%, compared with 4.9% in adult MTCs and 4.4% in mixed MTCs (no statistical difference between children’s and mixed). In cases of major trauma (Injury Severity Score >15) the adjusted odds of mortality were also greater in the mixed and adult MTC groups when compared with the children’s MTC. Median length of stay (LOS) and intensive care unit LOS were comparable for all MTC types. Patients managed in children’s MTCs were less likely to have a CT scan (46.2% vs 62.8% mixed vs 64% adult).

Children’s MTC have lower crude and adjusted 30-day mortality rates for adolescent trauma. Further research is required in this field to identify the factors that may have influenced these findings.

THE LANDSCAPE OF PAEDIATRIC PROCEDURAL SEDATION IN UK & IRISH EMERGENCY DEPARTMENTS; A PERUKI STUDY

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Aims/Objectives/Background Approximately 250,000 children undergo paediatric procedural sedation (PPS) in UK and Irish...
emergency departments (ED) annually. In comparison to other countries, PPS practice in our setting has not been described. We therefore aimed to evaluate PPS practice in UK and Irish EDs.

**Methods/Design** Online survey distributed through Paediatric Emergency Research in the UK and Ireland (PERUKI) during June 2020. One respondent per ED completed the survey, including questions on indications, agents, staffing and governance. Results are presented using descriptive statistics.

**Results/Conclusions** 61/72 (85%) sites responded, of which PPS was performed in 50 (82.0%). Intravenous ketamine was the most common agent (43/50; 86%), followed by fixed concentration nitrous oxide (FCNO, 35/50; 70%), and variable concentration nitrous oxide (VCNO, 13/50; 26%). PPS was mostly performed a few times a week (17/50; 34%) or daily (9/50; 18%). The most frequent indications were wound closure (31/50; 62%), orthopaedic reduction (28/61; 56%) and foreign body removal (17/61; 34%). Required sedationist seniority was highest for propofol and ketamine/es-ketamine (requiring consultant, registrar, or ANP), whilst FCNO was widely delivered by nurses and SHOs. Most sites had a guideline (43/61; 70.5%), documentation proforma (39/61; 63.9%) and equipment (36/61; 59.0%) and patient checklists (41/50; 82%). Explicit discharge criteria were required for ketamine/es-ketamine (40/45; 88.9%), midazolam (9/10; 90%), propofol (7/10; 70%) and VCNO (9/13; 69.2%). Databases existed in 24/61 (39.3%).

We have demonstrated wide PPS use, but non-standardised practice, with only two-thirds of sites using a PPS guideline and standardised proforma. This leads to potential issues of risk and variability, highlighting a need for a UK and Ireland sedation package to standardise PPS practice and data collection, informed by international guidance and evidence. We propose development of a prospective ED sedation registry to facilitate data collection to support research within this area.

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**MISSION TO MARS: USING STORY ART TO EASE ANXIETY AND IMPROVE EMPATHY IN A CHILDREN’S EMERGENCY DEPARTMENT (CED)**

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**Aims/Objectives/Background** Whilst working in CED one of the most significant challenges has been effective communication with parents and children of all ages. These difficulties can lead to an unclear understanding of a child’s management plan, and specifically its individual steps. This can produce undue anxiety for both parent and child. We decided to focus on creating a tool, to help navigate parents and children through a ketamine reduction of a broken limb. The aims of the digital learning intervention would be to improve patient experience by reducing stress and anxiety and educating them on the plan as it is put into place. This would be in keeping with the Department of Health’s framework for technology enhanced learning as it aims to improve patient outcomes, safety and experience.

**Methods/Design** We produced a narrated video story using hand drawn artwork, cartoon effects and video making software plus an optional e-book for parents to read to their children to give a more familiar voice to an already anxious