Paediatric Evaluation of the London Trauma System (PELoTS)

Project Protocol

Version: 1.1

Date: 22nd January 2018

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Project Teams

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Project Synopsis

Background:

Trauma is the leading cause of morbidity and mortality in children. Current data capture for children’s trauma is limited. The national Trauma Audit Research Network (TARN) capture data for adults and children with an injury severity score (ISS) >15 and an inpatient hospital stay of >72 hours. Having reviewed our local network data, we have found that this is only representative of at best, 1/3rd of the injured children we care for. This data is also at the mercy of the quality of data inputs which are known to vary widely across the network.

Trauma networks were established in 2010 following the 2007 NCEPOD report ‘Trauma: Who Cares’ which identified deficiencies in the quality and processes of care in up to 60% of severely injured patients. Trauma networks are designed on a hub and spoke mechanism based on the principle that getting the right patient to the right place at the right time leads to better outcomes. The quality of care delivered by the London Trauma System to adult trauma patients was reviewed through the Evaluation of the London Major Trauma System (ELoTS) in 2013 and published in the Annals of Surgery in 2015. The quality of care delivered to children has not yet been evaluated.

Design

This 12-month project is a service evaluation of the London Trauma System performed using the same core methodology as the ELoTS and NCEPOD reviews. We will prospectively identify all paediatric trauma patients admitted to Major Trauma Centres (MTC’s) and Trauma Units (TU’s) across the four London Major Trauma Networks over a 3-month period, February 1st to April 30th 2018 inclusive. We estimate inclusion of approximately 600 patients. Cases will be anonymously reviewed retrospectively by a panel of external experts to determine the quality of care.

Project Objective

To provide an accurate and current reflection of children’s trauma across London and to evaluate the quality of clinical and organisational care delivered to these injured children.

We will be the first to evaluate the London Trauma System for children. This assessment comes 10 years after the NCEPOD report and 8 years after the inception of the trauma network and will guide targeted service improvement and future development.

Aims

Aim 1: Quality

Has there been an improvement in the overall quality if care from both clinical and systems perspectives? The expert group will assess the overall quality of care provided against the original NCEPOD criteria of clinical care and organisational delivery.

Aim 2: Inclusiveness

Does the system provide equitable care for patients treated at the MTC and the TU’s? Overall care in the first 72 hours from injury will be compared between MTC’s and TU’s to assess the inclusiveness of the regional trauma system, including the impact of secondary transfers on quality of care.

Aim 3: Outcomes

Patient outcomes will be assessed in terms of hospital stay and mortality. Patients and families will be asked to return a letter to investigators documenting return to normal activities or ongoing concerns. We will identify areas for targeted improvement of the children’s trauma system.

Communication of Findings:

Findings from this evaluation will be disseminated through publications, presentations and the Centre for Trauma Science and Children’s Trauma websites. Findings will be presented at to the Pan-London Children’s Trauma group along with the London Trauma Steering group and shared with national trauma systems and trauma commissioning bodies.

All hospitals taking part in the evaluation, the local lead and data collectors will be acknowledged in any publication or presentation of findings.

Project Plan (Gantt Chart)

Project Schema

Ethical Approval

This project meets the criteria of a service evaluation and will be run as four separate audits within each trauma network. Ethical approval is therefore not required.

Enrolment

All paediatric trauma patients managed by a London network MTC or TU from 1st February 2018 to the 30th April 2018 inclusive will be included. Patients will be identified via trauma activations and those deemed as trauma by the local emergency teams. All patients under the age of 16 will be included. In a small number of hospitals paediatric teams care for those under the age of 18. In these instances, data will be captured for all patients cared for by the paediatric service. Data will be stratified for age and analysed accordingly.

Inclusion criteria:

1. All paediatric patients for whom a trauma call/activation is put out
2. All paediatric patients with trauma who is admitted to hospital or transferred to another hospital due to injury
3. All paediatric patients with head injury meeting NICE guidelines for CT head.

Quality Review

After completion of the 3-month prospective recruitment and collation of data an independent panel of expert clinicians will formed. Each panel will consist of approximately 4-5 experts who will review anonymised case report forms for patients cared for in networks outside their own (i.e. no expert will review a case from within their own network). Each case will be discussed by the expert panel to assess the overall quality of care against the original NCEPOD criteria (see below) along with current local and national standards and key performance indicators/ personal standards. The expert review panel will be asked to comment on why they have decided on their chosen standard.

NCEPOD Criteria:

**Good practice**: A standard of care that you would accept from yourself, your trainees or your institution.

 **Room for improvement**: Aspects of **clinical** care that could have been better.

 **Room for improvement**: Aspects of **organisational** care that could have been better.

**Room for improvement**: Aspects of both **clinical and organisational** care that could have been better.

**Less than satisfactory**: Several aspects of clinical and/or organisational care that were well below that you would expect for yourself, your trainees and your organisation.

Any cases deemed less than satisfactory will be highlighted solely by the chief investigating team and comments from the expert review panel fed back to the local lead to facilitate learning. **The expert review panel will be anonymous to the hospital providing the care.**