**Trauma Emergency Laparotomy Audit**

**Protocol**

**Background**

Patients with serious abdominopelvic injuries frequently undergo laparotomy as a part of damage control resuscitation. Improved prehospital care, earlier damage control resuscitation, and improved transfusion practices have been widely perceived as advances in the care that these patients receive (*1*). Despite this the literature from major trauma centres, both in the UK and the US, show that mortality in these patients has not improved over the past 20 years (*2, 3*). The reasons for this are unclear due to heterogenous and incomplete data capture, and the National Emergency Laparotomy Audit (NELA) excludes trauma patients.

The Trauma Emergency Laparotomy Audit (TELA) aims to address this gap in data collection. By collecting relevant data on all trauma patients who undergo laparotomy within 24 hours of admission we hope to provide a contemporaneous account of damage control resuscitation and laparotomy both Nationally in the UK and abroad. The findings of this audit will identify areas for performance improvement both locally and nationally, as well as identifying areas for further research to improve patient outcomes.

**Study Overview**

TELA is a prospective, multicentre audit of practice in trauma patients undergoing emergency laparotomy. The project will be run through the National Trauma Research and Innovation Collaborative (NaTRIC) at participating major trauma centres (MTCs) and trauma units (TUs) in the United Kingdom as well as several collaborators in the USA and Europe. The study will run for 6 months.

Data collection and study co-ordination at each site will be carried out by a named TELA investigator. This individual will be a clinician working at the study institution, who will be responsible for data collection for all eligible patients during the audit period. This role will be supported by the NaTRIC steering committee for the audit through delivery of a TELA support package, including detailed guidance on data collection and information governance.

**Aims and Objectives**

The overall aim of TELA is to define the processes of care for patients undergoing emergency laparotomy for trauma in the United Kingdom. The clinical standards against which these processes will be assessed are listed in National Institute for Health and Care Excellence (NICE) guideline NG39 (Major Trauma: initial assessment and management) (*4*). The specific objectives are listed below.

* Define the perioperative resuscitation practices in trauma patients requiring laparotomy, including use of major haemorrhage protocols, blood product transfusion, and tranexamic acid.
* Determine the pathways of care for patients undergoing trauma laparotomy including prehospital care provision, use of imaging, and seniority of key decision makers involved in peri-operative management.
* Characterise the overall burden of injuries requiring immediate or urgent laparotomy in the UK and the patient outcomes
* Provide comparative information on the organisation of care pathways and patient outcomes for trauma patients requiring immediate or urgent laparotomy

**Inclusion Criteria**

Blunt, penetrating or blast injury

Immediate or urgent laparotomy or laparoscopy (<24 hours from injury)

**Exclusion Criteria**

Delayed laparotomy (>24hours) for non-urgent indications

**Data Collection and analysis**

Patient data will be recorded by a TELA investigator based at the recruiting institution. Data will be directly entered using the REDCap system. Patient identifiable information (NHS number, DOB etc) will only be accessible to the site investigator. The data collection tool has been designed to not allow the project team access to sensitive information.

**Study Support**

A guidance package to support delivery of TELA at local sites will be provided to all investigators. This will include detailed information on study set-up and data collection, to ensure standardisation of data quality across sites.

**Study Team**

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**References**

1. B. A. Cotton *et al.*, Damage control resuscitation is associated with a reduction in resuscitation volumes and improvement in survival in 390 damage control laparotomy patients. *Ann Surg* **254**, 598-605 (2011).

2. M. Marsden *et al.*, Outcomes following trauma laparotomy for hypotensive trauma patients: a UK military and civilian perspective. *J Trauma Acute Care Surg*, (2018).

3. J. A. Harvin *et al.*, Mortality after emergent trauma laparotomy: A multicenter, retrospective study. *J Trauma Acute Care Surg* **83**, 464-468 (2017).

4. NICE, National Institute for Health and Care Excellence. Major Trauma: assessment and initial management. NICE guideline [NG39]. (2016).