CENTRE FOR TRAUMA SCIENCES

London Major Trauma System

The major trauma network

C4TS publications

the PAIR *bulletin*

Patient Public advisors for Injury research

Major Trauma Networks

In 2010 a the way emergency care systems work in the UK was dramatically changed with the introduction of major trauma centre and networks. Rather than taking people to the nearest local hospital those with the most serious injuries were instead transferred to specialist centres. Networks are made of Major Trauma Centres (MTC's) which deliver consultant led care 24 hours a day. The first network was in London and in 2012 the system was rolled out to the rest of England. Heavily populated areas will be close to MTC's -London has four- People in rural areas such as the East of England and the South West may travel some distance , and past closer hospitals to get there but will receive specialist care from very experienced teams. People needing to be stabilised or who cannot reach an MTC in less than 45 minutes may be taken to a Major Trauma Unit in a local hospital. The emergency departments in these places will provide treatment and many people will then be transferred to the MTC. Analysis has shown that 20% fewer deaths from serious injury were recorded since the introduction of the networks. As populations increase new MTC's are planned to reduce the burden on the existing network and to decrease time to treatment.

The 27 Major Trauma Centres in England and Wales

The rearrangement of the treatment of serious injury has proved successful. The next development could be to set up a national trauma research network. This would draw together the work done by research groups across the UK, encourage collaboration and help to get new evidence based treatments into use faster.

Recent publications

The centre for trauma sciences publishes the results of research widely. A few recent papers are described below.

Group B or not group B? An association between ABO, early mortality, and organ dysfunction in major trauma patients with shock. J Thromb Haemost .10.1016/j.jtha.2023.11.018

Blood comes in different types. A, B AB and O. It has been known for some time that people with different blood types react differently to infections and inflammation. This study looked for differences in blood clotting of each blood type after serious injury. Those with blood type B had higher levels of clotting factors and lower mortality than other groups though they also had higher rates of infection.

Association of red blood cells and plasma transfusion versus red blood cell transfusion only with survival for treatment of major traumatic hemorrhage in prehospital setting in England: a multicenter study. Critical Care 27, (1) .10.1186/s13054-022-04279-4

Doctors treating people at the scene of their injury usually give red blood cells to people or are bleeding badly. This is different from the hospital transfusion which would also give blood plasma. This study compared the outcomes of patients who were given plasma before arriving in hospital with those that were only given red cells. In people with penetrating injuries survival rates were higher in those given plasma and cells.

A Comparative Analysis of Tranexamic Acid Dosing Strategies in Traumatic Major Hemorrhage. J Trauma Acute Care Surg .10.1097/TA.0000000000004177

Tranexamic acid (TXA) is a common life saving treatment which stabilises clots in people with severe bleeding. However, the best way to give the drug is unknown. This study compared people give 1g, 2 g and 1 g plus slow delivery of a second gram. The results shows no real difference in outcome but the slow delivery group showed some signs of increased organ failure so is suggested that a single dose is preferable

---

Revisiting the promise, practice and progress of resuscitative endovascular balloon occlusion of the aorta. Current Opinion in Critical Care 29, (6) 689-695.10.1097/MCC.0000000000001106

Early and Empirical High-Dose Cryoprecipitate for Hemorrhage after Traumatic Injury: The CRYOSTAT-2 Randomized Clinical Trial. JAMA 330, (19) 1882-1891.10.1001/jama.2023.21019

These two important trials were discussed in issue 6 of the PAIR news.

Meet the

Elaine Cole

I am a Professor in Trauma Sciences and my role is split between education, research and innovation. I am a nurse by background and completed my PhD at the Centre for Trauma Sciences in 2014. I have a wide range of research interests and related activities.

My PhD looked at the development of infection and organ dysfunction in severely injured patients who were admitted to intensive care. This work has shown patterns of recovery and mortality, and the effects of age, frailty and brain injury.
I also work as the Director of Research and Innovation for the London Major Trauma System where I collaborate with a wide range of clinical, non-clinical and PPI colleagues to improve care and outcomes for triage pathways, frailty assessment, critical care outcomes and more recently the effects of diversity on recovery after injury.