

The impact on an acute trust of opening a major trauma centre

Major trauma centres are being rolled out nationally in order that the majority of the population will have consistent access to better trauma care 24 hours a day (National Confidential Enquiry into Patient Outcome and Death, 2007; Intercollegiate Group on Trauma Standards, 2009). Some of the early adopters of this system were four London hospitals that divided Greater London and its outlying areas into four regional networks all working to the same standards, governed by a single body (the London Trauma Office) and with regular reviews, using Trauma Audit and Research Network data as an assessment tool (www.tarn.ac.uk). This editorial describes the impact that this has had on one such acute trust.

Effect on workload

The first point to make is that it is impossible to estimate changes in activity accurately. In the authors' case, the number of trauma calls increased from <5 per week to an average of 40, with occasional peaks of >60 per week. The majority of cases are triaged directly by the London Ambulance Service to the major trauma centre with less than 10% arriving as secondary transfers from network trauma units. Although a significant proportion do not have an injury severity score greater than 15 (these severely injured patients account for approximately 20–25% of the centre's workload) they still trigger a trauma call based on the available pre-hospital information.

This has a major impact on almost all hospital departments. It mandates robust rotas where staff are freed up to provide emergency care throughout the day and night and with current European working time directive constraints this means that a full shift system is the only feasible option in most cases.

Effect on the team

Taking into account the activity described, there will be a significant impact on the

emergency department. The resuscitation area has to be well equipped and large enough to cope with multiple trauma calls in addition to the pre-existing medical emergency workload. Timely senior decision making becomes essential to facilitate patient flow to the correct department. Members of the trauma team need to be defined and led by a senior trauma team leader who, in the case of London hospitals, was planned to be resident and of consultant grade. While significantly beneficial to the patient, there are major personnel and fiscal consequences of such a rota.

The authors have noticed that established clinical relationships in their major trauma centre have been greatly strengthened by working together as a trauma team and new relationships have developed as areas of service have been established. This has a definite additional benefit for all non-trauma patients in the Trust.

Effect on other parts of the hospital

Rapid imaging has been proven to improve outcomes and, after FAST (focused assessment sonography in trauma), computed tomography is the most appropriate modality. Special trauma imaging protocols have been developed and are used routinely in most major trauma centres.

The computed tomography scanner needs to be as close as possible to the resuscitation area to avoid prolonged patient transfers and needs sufficient staff to absorb the extra capacity. Having a radiology registrar as part of the trauma team helps significantly with rapid investigations and interpretation of these and with liaison with interventional radiology when needed. However, the numbers of computed tomography scans, many whole body (National Confidential Enquiry into Patient Outcome and Death, 2007), and the need for rapid imaging reporting can place an increased strain on the working of most radiology departments.

Likewise, transfusion departments need to ensure that they have a robust massive transfusion protocol with rapid access to both blood and products in the quantities needed to cover peaks of activity.

In the authors' hospital specific pathways and protocols have been developed for those trauma patients who are significantly haemodynamically compromised on arrival to ensure rapid transfer to theatres with a consultant delivered surgical response and consultant anaesthetic care.

A designated trauma theatre is available and a scrub team can be mobilized as required. Although all of this has required a change in approach and rota reconfigurations, it works well and the response from all staff when there is an unstable polytrauma patient requiring a multidisciplinary surgical approach in theatres is gratifying.

Expansion of the bed base is necessary and before going live additional adult intensive care unit beds were opened. As cohorting of these patients is essential for medical, nursing care and therapies input, a new high specification major trauma ward for level 1 and 2 care was built.

Although a number of trauma cases will have a single organ problem requiring admission to the major trauma ward under a single speciality, many will be multiply injured needing cross-speciality team working. This can create problems with attribution and finances for individual consultant teams and departments.

A single 'trauma department' is an attractive option with specialist teams feeding their aspects of care into an individual patient along the lines that many intensive care units are run.

While this allows more clarity of responsibility, it is disadvantaged by the lack of dedicated trauma-trained personnel in the UK. Nevertheless, a team with overall control becomes essential for aspects of care following the initial resuscitation and acute care: planning repatriation (where appropriate) and rehabilitation are chal-

lenges unfamiliar to the majority of clinicians. At the authors' hospital this role is provided by a 'trauma consultant of the week' model.

Points for consideration

The ongoing needs of the trauma patient are complex and rely on input from many different therapy specialists, the role of whom becomes increasingly important. A dedicated rehabilitation consultant would also be of considerable benefit to these patients and with an increasing focus on the rehabilitation prescription and its ties to funding, this role is likely to become essential.

The major trauma centre provides education and training opportunities for all staff involved in the care of trauma patients, in addition to research opportunities. A formal education strategy for the ongoing training of medical and nursing staff is essential, but requires significant input and resources.

Posts for trauma-associated specialties in the hospital are popular as, by the nature of the model, experience is limited elsewhere in the trauma network.

A robust trauma clinical governance structure is mandatory and one component of this at the authors' major trauma centre is a weekly multidisciplinary clinical trauma meeting, where selected cases are reviewed in detail, facilitating a rapid response to any clinical issues that arise.

There is well-established liaison between the major trauma centre and network trusts over patient repatriation, trauma clinical governance and staff education. Some consultants from the network trauma units also carry out trauma team leader shifts at the major trauma centre which, in addition to strengthening the network relationship, also facilitates feedback from the regular clinical governance meetings.

Finally, in addition to the clinical considerations, there are medicolegal consequences for a large minority of trauma patients. This means that documentation is critical and there is an ongoing requirement to provide statements and reports for both the police and where necessary the coroner.

Conclusions

When reflecting on the progress as a major trauma centre over the 2 years since launch, the authors considered whether

there was one dominant change that translates to a better patient outcome? Probably not, but the focus on a patient group which comes with a new system of care (especially one that is closely monitored via a registry) inevitably improves care. **BJHM**

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KEY POINTS

- The concentration of key services and expertise at the major trauma centre results in better outcomes for severely injured trauma patients.
- Modification of working practices by staff in many specialties is necessary to allow a rapid response for the most severely injured.
- Care is often delivered by senior clinicians and this includes 24/7 on-site consultant trauma team leaders.
- There are implications for consultant rotas in all specialities involved in trauma care.

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