



Commentary

Improved Trauma Outcomes after the Introduction of a Trauma System in England

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Traumatic injury is a worldwide public health problem resulting in approximately sixteen thousand deaths per day and around eight times as many with moderate or severe disability. In addition, it is predicted that by 2030 the leading causes of traumatic death and injury (road traffic collisions, murder and suicide) will increase substantially resulting in an increased burden on healthcare and society in general [1].

A number of countries with advanced healthcare systems have introduced inclusive trauma systems to reduce trauma mortality. Inclusive trauma systems focus on all components in the patient pathway (injury prevention, pre-hospital care, patient transfer, initial management, definitive management and rehabilitation) rather than on single trauma hospitals. Introduction of trauma systems has been associated with significantly improved outcomes [2,3]. In the UK a number of reports over many years indicated suboptimal trauma care [4] and, to address this, inclusive trauma networks were launched in London in 2010 and in the rest of England two years later. In London rapid improvements in the quality of care were reported and these were mainly attributed to organizational change rather than changes in clinical care [5]. In this journal Moran et al. have examined the effects of the changes at a national level. They report on the outcomes of over 110,000 trauma patients in the five years following the introduction of trauma networks in England [6]. This study has been anticipated for some time by the international trauma community and the authors are to be congratulated for presenting a large and complex dataset in a clear and considered manner. The key message is that in the first five years after launch of trauma networks there has been a significant (19%) improvement in adjusted mortality and a small but consistent improvement in mortality demonstrated in quarterly mortality reports (0.08 additional survivors / 100 patients / quarter). The authors also report significant changes in the processes of care which are routinely measured as trauma care quality indicators.

The evaluation of national healthcare interventions is impossible without reliable high quality data. In England the Major Trauma Centres and associated Trauma Units were set mandatory standards with a

National Service Specification and all hospitals that received trauma were required to submit key data to the national Trauma Audit and Research Network (TARN). This powerful trauma audit provides regular comprehensive reports on mortality and a range of trauma quality indicators [7]. The authors have still faced challenges in providing reliable data for their study because the quality and completeness of submitted trauma data was often not satisfactory in the period immediately after network launch. Since then the membership of TARN and the quality of submitted data has risen sharply. Major Trauma Centres in particular now have very high quality data submission. To compensate the authors had to report on a sample of hospitals with high quality data. In addition, the demographics of trauma victims appear to have altered during the study period. The number of patients submitted to TARN overall and taken to Major Trauma Centres has increased significantly. There are also now many more elderly patients, patients with significant comorbidities and patients with falls from less than 2 m submitted to TARN. This is likely due to previous underreporting in these patient groups. Some quality indicators (e.g. the proportion of trauma victims being received by a consultant) have seen major improvements in the study period.

The implementation of the English trauma system has been an example of a successful clinically led process. The national service specification was developed with strong multidisciplinary clinical input and led by a major trauma national clinical director and clinically active network clinical directors. Although standards were developed and monitored centrally, the techniques of delivery were developed by local clinicians in each region and tailored to variations in geography, population and existing service configurations. Although the number of major trauma patients is, compared to the number of patients with some medical conditions, relatively small, the success of the trauma clinical networks maybe readily transferrable to other specialist clinical problems.

These results will not come as a surprise to most clinicians working in trauma care. Although there have been a few major changes in the clinical management of major trauma since 2012, the introduction of national standards and annual peer review for major trauma has led to widespread positive system changes. There has also been reduction in the inconsistencies between receiving trauma hospitals. After the launch of trauma networks in 2012 the measured mortality (excess survivors / deaths per 100 patients) varied considerably between the 27 Major Trauma Centres. Five years later these differences are reduced and the mortality rates reported in the majority of Major Trauma Centres are now not only lower but also very similar [7].

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The results reported in this paper demonstrate the successful national introduction of clinically led networks to reduce trauma mortality. The next five years will deliver an expectation of thousands of lives saved in the UK and demonstrate the opportunity to deliver similar benefits in other high mortality clinical conditions.

Conflicts of Interest

The author is Clinical Director for a trauma network in England and sits on the board of the Trauma Audit and Research Network.

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