

Time to definitive care in English major trauma networks

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Background

Significant mortality improvements have been demonstrated following implementation of English regional trauma networks in 2012 [1]. Timely transfer of seriously injured patients to definitive care is a key indicator of network performance.

This study describes timelines from emergency service (EMS) activation to definitive care arrival and key interventions for severely injured patients between 2013 and 2016.

Methods

Data was collected from the Trauma Audit and Research Network on patients with injury severity scores above 15. Outcomes included time from EMS activation to arrival at a Trauma Unit (TU) or Major Trauma Centre (MTC); to computerised tomography (CT); to urgent surgery; and mortality.

Results

Compared to direct transfer, secondary transfer was associated with increased time to CT [419 vs 120 minutes ($p < 0.0001$)]; increased time to urgent surgery [434 vs 262 minutes ($p < 0.0001$)]; and increased mortality [19.6(CI95%:16.9-22.3) vs 15.7(CI95%:14.7-16.7)]. Time to CT was longer at TUs compared to MTCs [189 vs 120 minutes ($p < 0.0001$)] as was time to urgent surgery [322 vs 262 minutes ($p < 0.0001$)]. Transfer time and time to CT increased from 2013-2016 ($p < 0.0005$). There was variation between regional networks for transfer time; time to CT; and time to urgent surgery ($p < 0.0001$).

Conclusion

Patients with serious injuries who underwent secondary transfer had significantly delayed imaging, surgery and increased mortality. CT and urgent surgery were performed more quickly in MTCs than TUs. This may suggest that where safe to bypass patients will receive these interventions more quickly by going directly to an MTC. Our data suggests that key timelines failed to improve since launch of trauma networks and that significant regional variation in timelines remains. This may indicate that there is still scope for improvement in the early identification, transfer and treatment of severely injured patients in UK practice.

1. Moran CG, Lecky F, Bouamra O, Lawrence T, Edwards A, Woodford M, et al. Changing the System - Major Trauma Patients and Their Outcomes in the NHS (England) 2008–17. *EclinicalMedicine*. 2018 Aug 1;2–3:13–21.