Gloucestershire Safety and Quality Improvement Academy

Gloucestershire Hospitals NHS
NHS Foundation Trust

Traumatising the Emergency Department

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Introduction

Despite seeing the second highest number of major trauma patients in the Severn region, Gloucestershire Royal Hospital has been performing poorly and had become a national outlier (figure 1). This was most profound in *Time to Senior Review* and *Trauma Team Involvement* of Major Trauma Patients (defined as patients with an Injury Severity Score >15 or who have been pre-alerted by pre-hospital criteria).

Observation of the department showed pre-alerted trauma patients often did not receive trauma calls, and when calls were put out attendance was very variable. This QI project focussed on early recognition and escalation of major trauma patient as this leads to earlier imaging, treatments and speciality input. Only two nurses had any trauma training and our survey showed many clinicians also unfamiliar. We hoped by raising the profile of trauma more generally, all areas would see improvement.

TU 06a - TUs deliver grade STR 3 or above led trauma teams on arrival for Pre-Alert and/or Trauma Team patients

Period	Numerator	Denominator	Trust value (%)	National mean (%)
21/22 Q3	1	35	2.9	38.3

Fig. 1: TARN data for Gloucestershire Royal showing ST3+ led Trauma team on arrival.

Smart AIM

Measures

Time to senior review data *is* already collected by TARN, however there is a six month delay in reporting which made it difficult to measure and adjust our interventions, so we used a **proxy outcome measure** of those patients who went on to have a trauma pan scan to allow real time analysis.

Process measures used included surveys of staff confidence, audit of bleep use, video views and numbers who had completed our training modules.

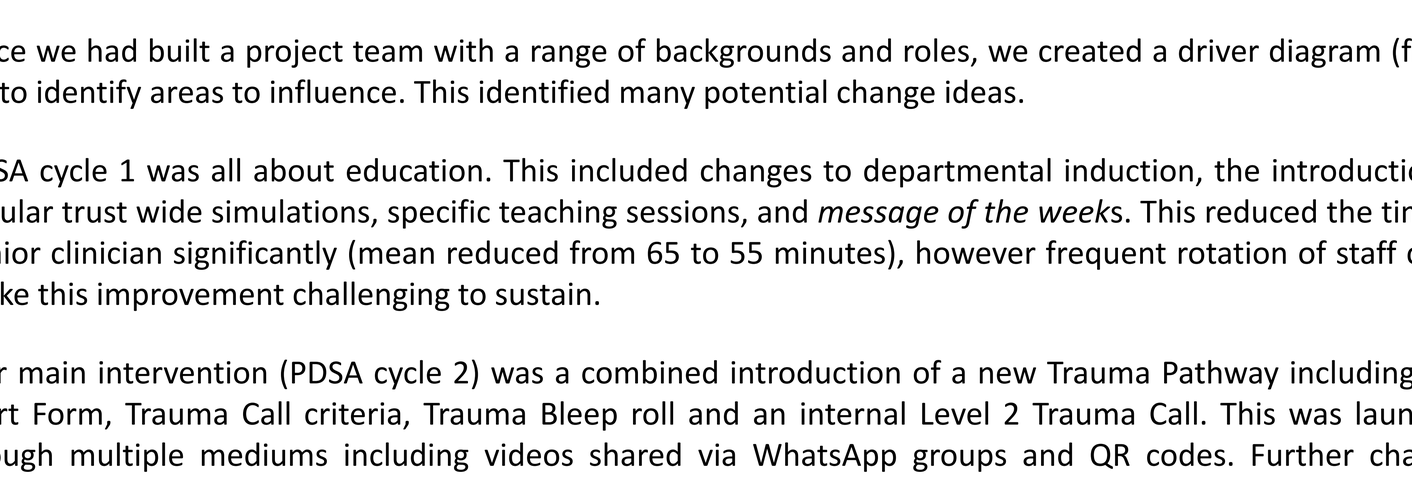
Balancing measures included *time to triage*, *time to all patient review* and *total patients seen in ED.*

Methods and Results

Once we had built a project team with a range of backgrounds and roles, we created a driver diagram (figure 2.) to identify areas to influence. This identified many potential change ideas.

PDSA cycle 1 was all about education. This included changes to departmental induction, the introduction of regular trust wide simulations, specific teaching sessions, and *message of the week*s. This reduced the time to senior clinician significantly (mean reduced from 65 to 55 minutes), however frequent rotation of staff could make this improvement challenging to sustain.

Our main intervention (PDSA cycle 2) was a combined introduction of a new Trauma Pathway including Pre-alert Form, Trauma Call criteria, Trauma Bleep roll and an internal Level 2 Trauma Call. This was launched though multiple mediums including videos shared via WhatsApp groups and QR codes. Further changes included a training module for bleep holders which was incentivised to encourage uptake.



This phased SPC Chart (graph 1) shows how the median and upper control limits changed after each intervention for all trauma patients who had a pan scan. Overall time to senior review reduced from a mean of 65 minutes to 41 minutes with reduced variability also. For non pre-alerted patients the reduction is from 91 minutes to 45 minutes but for pre-alerted patients the difference is negligible. This is hugely encouraging progress using the proxy measure explained above. We hope these changes will translate into the TARN data.

Further analysis of outliers highlighted an issue with how EPR records arrival time for pre-alerted patients and this is the focus for ongoing changes being implemented to further improve data.

Aim	Primary Drivers	Secondary Survey	Change Idea
To reduce the median time to ST3+ review of Major Trauma patients by 50% within 9 months.	Staffing	Number of senior decision makers	Increase staffing Designate Trauma senior (golden env) Assign Consultant/ST3+ to RESUS
		Increase use of Trauma Team	Improve Trauma Call Criteria Increase Awareness Empowering Escalation ? Specialist Nurse for trauma
		Education and Training	Hospital Wide Sims TILS (Trauma Life support Course for staff) MOW (Message of the Week)
	Environment	Space	Ring fenced trauma Bay Dedicated pre-alert pitstop bay
		Flow	Utilise new build
		Equipment/ Resources	Designated team? New trauma Bleep Use of Tannoy
	Organisational and Strategic	Speciality Team Engagement	GREAT link Simulation
		Early identification	New pitstop and triage proforma Level 2 call (internal) Triage EPR question
	Task Factors	Documentation	Scribe introduction Numbered Scribe sheets Real time notes
		Triage/identification	New Easy to follow criteria Trauma fellow/link
		Guidelines	Updating criteria E-resus
	Communication	Escalation	New Level 2 call Education/MOW
		Prehospital/pre-alert	Working with SWAST Update Pre-alert form/system
		New bleep/tannoy	

Figure 2: Driver Diagram

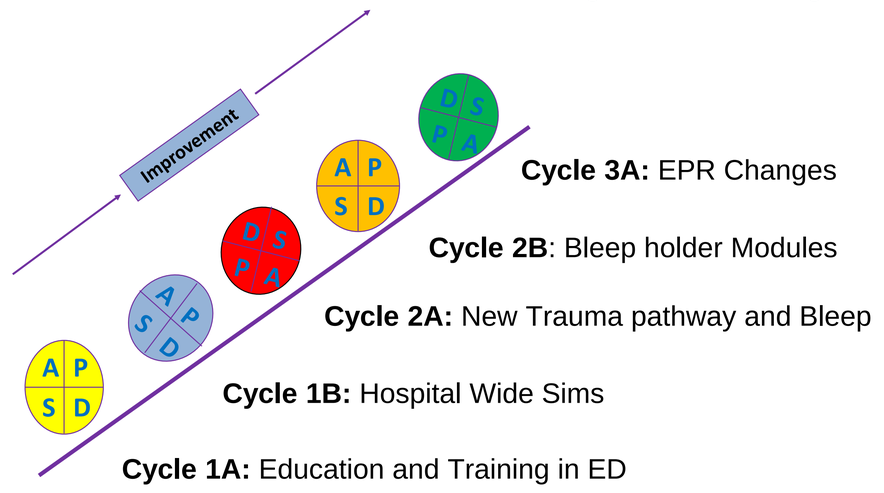


Figure 3: PDSA overview

Figure 4: New pathways (PDSA 2)

Conclusion: This multimodal approach to 'traumatising the department' is effective and has reduced time to senior clinician by >50% for non pre-alerted and by 37% for ALL major trauma patients

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