

A quality improvement approach to enhance the multidisciplinary team response time during trauma team activation in a Borneo Regional Trauma Centre

Chee Hon Yee, Yap Yoon Chin, Breithner G. Johniu, Liew Seng Yung
Hospital Queen Elizabeth, Kota Kinabalu, Sabah, Malaysia

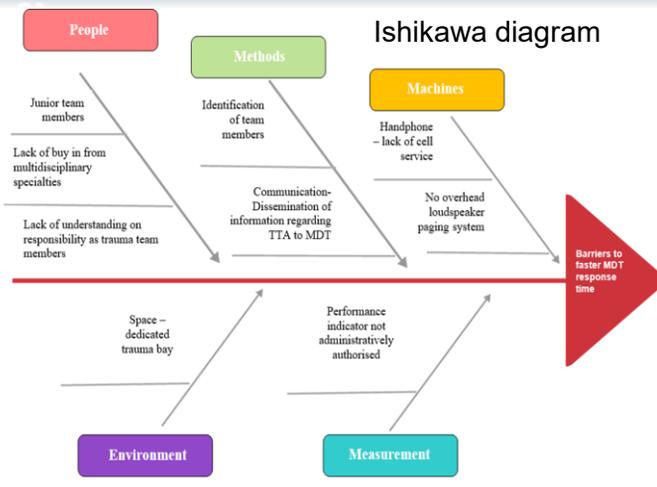
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Introduction

Time is of essence during the management of a seriously injured trauma patient. The domino effect of an effective Trauma Team Activation (TTA) starts from the arrival of multidisciplinary team members. A quality improvement project (QIP) has been undertaken to improve the multidisciplinary team members response time to be within 15 minutes from trauma team activation with a compliance rate of 80%.

Methodology

This project was carried out over a one-year period from 1 December 2021 until 31 December 2022. Analysis of the problem was aided with process mapping and Ishikawa diagram to determine the contributing factors towards a delayed response time. The model for improvement with its Plan- Do- Study-Act cycle and a driver diagram were utilized for change implementation. 2 cycles of intervention were applied and the response time evaluated after each cycle.

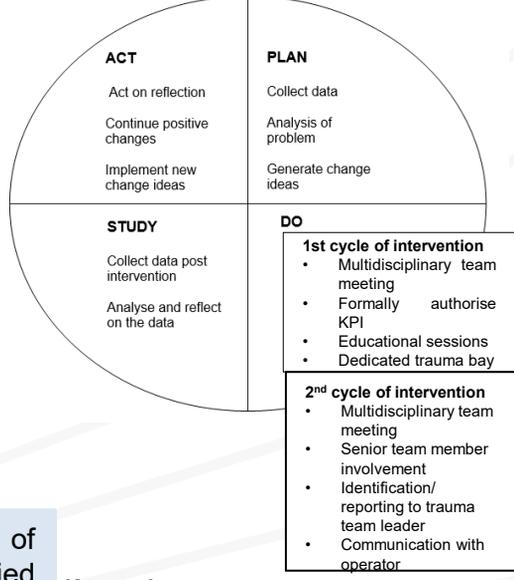


Results

The median response time for multidisciplinary team members improved from baseline data with all teams exceeding 15 minutes to all teams arriving within 15 minutes following the 1st and 2nd cycle of intervention. In addition, the compliance of multidisciplinary team members towards the set standard has increased from 40% to 81-95% (after 1st cycle) and 64-92% (after 2nd cycle) through quality improvement approaches.

Model for improvement & PDSA cycle

What are we trying to accomplish?
To improve the multidisciplinary team members response time to be within 15 minutes from trauma team activation
How will we know that a change is an improvement?
Improvement would be shown with a faster multidisciplinary team response time
What changes can we make that will result in an improvement?



Discussion

The compliance rate was low (40-50%) when TTA was re-established in 2021 after the covid-19 pandemic due to the lack of familiarity and understanding towards TTA. The reduction in compliance after the 2nd cycle of intervention is due to data collection occurring during the latter half of the year during endemic phase of COVID with higher patient loads and elective operation theatres resuming full operations apart from majority (80%) of TTA occurring during out of office hours. Stakeholder engagement is the key cornerstone to garner leadership support and to ensure successful change implementation.

Conclusion

Trauma team activation (TTA) allows for early mobilization of multidisciplinary team members for a horizontal approach to be applied during resuscitation, leading to critical interventions being carried out in a timely manner in order to achieve better patient outcome. Quality improvement approaches are crucial in refining the TTA process.

Keywords

Trauma Team Activation, multidisciplinary team response time, quality improvement



References
Georgiou, A., & Lockey, D. J. (2010). The performance and assessment of hospital trauma teams. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, 18, 66. <https://doi.org/10.1186/1757-7241-18-66>
Lockey, D. J. (2018). Improved trauma outcomes after the introduction of a trauma system in England. *EClinicalMedicine*, 2-3, 3-4. <https://doi.org/10.1016/j.eclinm.2018.08.002>

