Improving venous thromboembolism (VTE) prophylaxis in the trauma patient

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Background

Without thromboprophylaxis, incidence of VTE in hospitalized patients admitted after a traumatic event ranges from 50%-80% and pulmonary embolism is the third leading cause of death in trauma patients

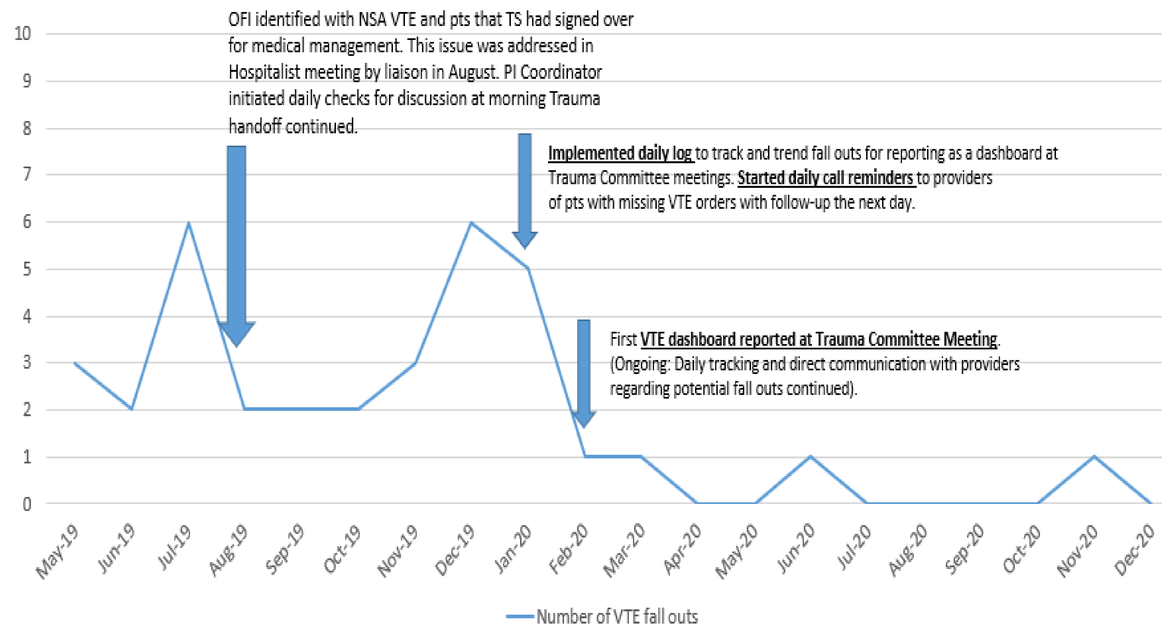
Purpose

The aim of this project was to increase overall compliance with administration of pharmacological venous thromboembolism (VTE) treatments within 48 hours of admission in the trauma patient.

Appraisal of Evidence

Gunning, 2021 showed patients with multiple traumatic injuries increase the risk of VTE up to 60%, however having a protocol to initiate earlier administration of pharmacologic VTE treatment resulted in reducing the risk to less than 4%.

Early initiation of pharmacologic VTE prophylaxis in stable trauma patients within 48 hours and preferentially within 24 hours after admission is associated with improved outcomes. The rates of VTE episodes were lower and had no direct correlation with increasing mortalities. Complications of bleeding or hematoma formation were also not to be found as increasing from those patients who received pharmacological VTE treatments within 24-48 hours of admission (Hecht, 2021).



Methods

The Trauma Coordinator (TC) created a concurrent review process to capture pharmacologic VTE prophylaxis compliance. The process consisted of a daily review of admitted trauma patients, medications ordered, medications administered, and any documented contraindications. If a patient was identified as not having the appropriate pharmacological VTE, or lacking documentation of contraindications, then the TC communicated the need to the attending provider via an electronic medical text communication system. The TC created a concurrent log containing patient name, admit date, room number, and date of VTE administered or documentation of contraindication. The log was used as a tool to calculate monthly compliance and reported at monthly trauma committee meetings. Providers with recurring or unresolved opportunities are escalated to the appropriate physician liaison for review.

Results

At the beginning of the project compliance was averaging 89% with either administration of medication or documentation of exclusion. After implementation of concurrent review and monthly reporting, compliance improved to 100% for 4 consecutive months. On the 5th month, a new factor emerged with medicine residents. The process was revised and compliance returned to 100%.

Conclusions

The first opportunity identified was the Hospitalist lack of understanding the Trauma VTE requirements. From there it became a matter of compliance. With the implementation of the concurrent review process this offered a method of communication with all providers caring for the trauma patients thus increasing compliance and improving patient outcomes.

Recommendations

The Trauma program has continued the concurrent VTE process as it continues to produce proven success.

References

Gunning, A.C., Maier, R.V., de Rooij, D. *et al.* (2021). Venous thromboembolism (VTE) prophylaxis in severely injured patients: an international comparative assessment. *Eur J Trauma Emerg Surg* 47, 137–143. https://doi.org/10.1007/s00068-019-01208-z

Hecht, J. P., Han, E.J., Cain-Nielsen, A. H., Scott, J. W., Hemmila, M. R., &Wahl, W. L. (2021). Association of timing of initiation of pharmacologic venous thromboembolism prophylaxis with outcomes in trauma patients. *Journal of Trauma and Acute Care Surgery*, 90(1), 54-63. doi:10.1097/TA.0000000000002912