A Multi-disciplinary Approach for Personalized Patient Care Improves Safety and Cost of Care

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ABSTRACT

Background: Glanzmann's Thrombasthenia (GT) is a rare (1/1000, 000) autosomal recessive platelets disorder resulting in platelet dysfunction and recurrent life threatening bleeding from mucous membranes like epistaxis, GI bleed or menorrhagia. Our patient is a 16 year old with GT who presents to the ER almost twice every month with severe and life threatening epistaxis. Significant patient safety concerns arose after a critical hospital admission requiring the rapid response team intervention due to hemorrhagic shock and another admission requiring transfer to intensive care unit.

Objective: To improve patient outcomes by delivering efficient personalized care, improving patient safety, decreasing length of stay (LOS) and total blood product utilization.

METHODS

We analyzed the patient's admissions for the previous 6 months. Analysis included: Hgb level and HR on arrival to ER as surrogate markers for time lapse from start of bleeding at home until ER presentation, time prior to first factor VII dose delivery and blood product infusion, number of units of blood products received, LOS & the cost of care per admission. A cross/multi-disciplinary care team was assembled and we used the PDSA cycle for improvement. We educated patient and her care giver about the importance of early presentation to the ER once bleeding starts, and communicated the acuity of the patient to the ER triage team. To standardize patient management and decrease the time to start therapy, a pre-populated EMR epistaxis order set was developed for the patient.

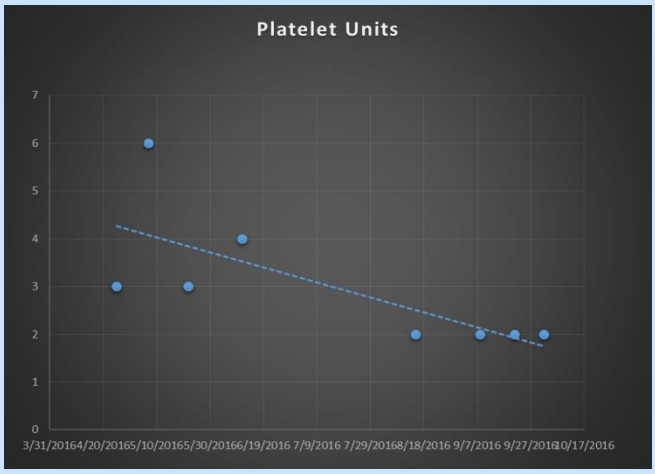
RESULTS

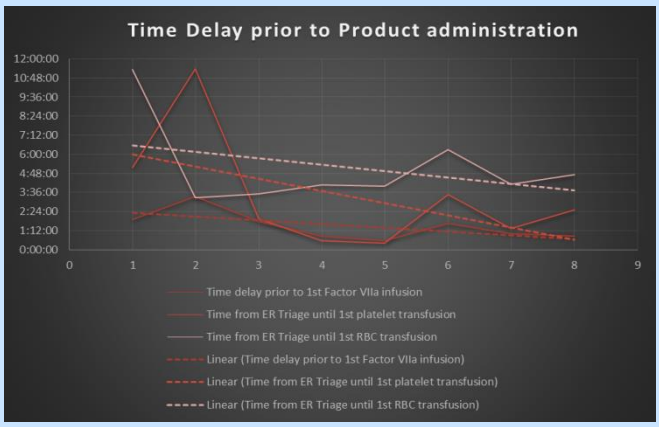
Our interventions resulted in a shortened LOS from 36 to 26 hours. Improved the severity of anemia as indicated by lowest hemoglobin per admission from 7.6 g/dL to 8.4 g/dL, time to first dose of Factor VIIA from ~ 2 hours to ~1, first blood product administration from 4 ¾ hrs to 2 hrs. Although our project did not use a standard method to measure patient and guardian satisfaction, they did verbally express their noticeable change in the efficiency of management and their satisfaction after the change implementation. Products utilized were 4 less RBC/platelets units per admission; factor VIIa per admission decreased by an average of 11,250 units. This reduction translates into a total reduction in cost per admission from an average of ~$92,5000 to $73,500.

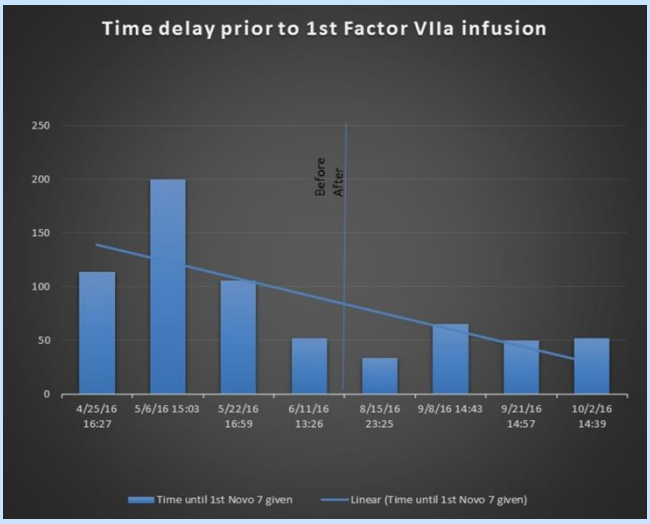
CONCLUSIONS

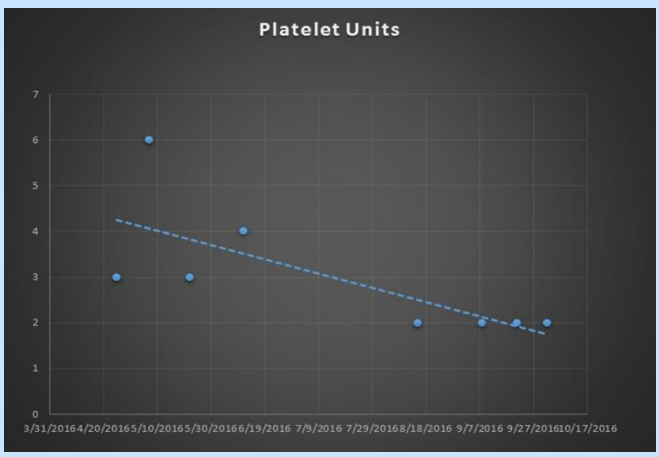
This simple quality improvement project; improved patient safety by eliminating intensive care admissions and prevention of further critical codes for hemorrhagic shock. Economically the hospital LOS, total cost from recombinant factor seven infusions as well as blood transfusion improved significantly, saving the healthcare system valuable healthcare dollars.

FIGURES









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