

SMART Aim

To reduce the incidence of platelet transfusion when platelet count was >25,000 among preterm infants <30 weeks' gestation from a baseline of 60% in January 2020 to 25% in June 2024

Key Drivers

Provider and staff knowledge of evidence-based best practice for platelet transfusion

Providers' comfort with lower platelet threshold for transfusion among preterm infants; trepidation because of perceived risks for lower platelet threshold

Collaboration with Blood Bank and Nursing Staff

Secondary Drivers

Concern among healthcare providers regarding the risk of intraventricular hemorrhage (IVH) in preterm infants with lower platelet thresholds

Lack of consensus for platelet transfusion in our NICU

Inadequate knowledge of recent evidence in platelet transfusion literature

Long-standing practice of transfusing platelets to maintain counts >50,000 in preterm infants

Lack of buy-in, awareness, and engagement with nursing Staff and Blood Bank

Accessibility of evidence-based indications for platelet transfusion, without limitations on medical records, when ordering transfusions for preterm neonates

Change Concepts

- Implementation of a restrictive threshold of 25,000 for judicious platelet transfusion among preterm infants
- Development of evidence-based guidelines for premature neonates with clear and precise indications for platelet transfusion
- Education of providers, residents, staff on indications, background, hazards, risks, safety, and recent evidence for platelet transfusion among premature infants
- Review of recent publications, data, and evidence for indications and practice in platelet transfusions for premature infants
- Open discussions among team members during rounds and providing handouts
- Journal club discussion about a recent paper showing evidence of increased hazards associated with a more aggressive platelet transfusion practice (i.e., higher platelet transfusion threshold) – PlaNeT2 MATISSE (Curley et al, 2018)
- Journal club discussion about a recent QI paper that implemented a guideline for lower platelet transfusion threshold (Davenport et al, 2021).
- Promotion of new restrictive guidelines for platelet transfusions (<25,000) balancing with existing notion and patient-level severity of illness
- Utilization of email blast for residents every 4 weeks with each new block rotation
- Utilization of EMR, creation of NICU-specific order set and best-practice advisory when someone would order platelet transfusion
- Collaboration with Blood Bank to track platelet transfusion and EMR build for NICU-specific platelet transfusion indications and best-practice advisory for safety
- Education of staff and mid-level providers; reminders for new platelet transfusion threshold