

00165 **Neonatal Omission of Crossmatch (Neoxm) – Take Less, Give More: An Improvement Initiative to Neonatal Transfusion**

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Aims: Packed red blood cell (PRBC) transfusion is crucial in the critically ill very low birth weight (VLBW) neonates due to anaemia of prematurity and iatrogenic blood loss. We aimed to minimize blood sampling in VLBW neonates by omitting need for full cross-match before each PRBC transfusion.

Methodology: A quality improvement initiative termed Neonatal Omission of Crossmatch (NeoXM) was introduced in November 2017. All VLBW neonates were tested for eligibility upon admission to KK Hospital NICU. If specified pre-transfusion criteria were met, full cross-match of donor blood with neonatal blood was not needed. VLBW neonates born 3 months before and after implementation of NeoXM were studied. Demographic data, incidence of blood testing and PRBC transfusions, duration for specimen processing to administration to patient, and any transfusion related reactions were analysed. Potential cost reduction after protocol implementation was also calculated.

Result: Total of 100 cases were reviewed, 58 pre-NeoXM (cohort-I) and 42 post-NeoXM (cohort-II). Mean gestational age and birthweight were similar in both cohorts. 2 cases were ineligible for NeoXM due to unavailability of maternal sample or cord blood. Percentage of VLBW neonates needing blood transfusions were similar between cohorts (62.1 % vs 66.7%, $p=0.64$). In cohort-1, 180 blood samplings for crossmatch were done and 111 unit of PRBCs transfused. In cohort-II, only 43 blood samplings were performed for 85 transfusion episodes. 50 blood samplings for crossmatch were saved due to NeoXM. Maximum blood samplings done per patient pre-NeoXM was 10, reduced to 2 post-NeoXM. Median time taken from blood ordering to administration to patient was shortened by 2hours 25minutes. No adverse reactions were reported from uncross-matched transfusions. The total cost savings for patients were \$4942.50.

Conclusion: The NeoXM protocol has achieved significant cost savings, less painful blood-samplings with faster blood administration of PRBC transfusion in VLBW neonates.