

**Web Box 1** ACTIVITIES FOR QUALITY IMPROVEMENT IN PRESENT STUDY

- *Meetings and presentations:* Presentations about improvement project, benefits of expressed breast milk and anticipated hurdles were made to a variety of audience including neonatal and obstetrics residents, nurses, obstetricians and departmental consultants. These presentations also addressed the importance of team work, staff assistance and laid emphasis on common goal of how to get EBM early and in more volume. Administrative bottle necks were discussed and sorted out with the chairs of various departments.
- *Standardized counselling format:* For antenatal counselling of mothers expected to deliver prematurely, a standardized format was developed, to avoid ambiguity during these sessions. Counselling was to be done by members of improvement team-lactation consultant and a neonatologist. The format consisted of greeting the mother, introduction of the team person and specific emphasis on benefits of EBM in decreasing risk of sepsis, necrotizing enterocolitis and improving brain development. The format also contained information about importance of colostrum, recommendations to express milk early, availability of breast pumps, how to send milk to NICU and ended with checking mother's understanding with some random questions. This was developed and tested in the first PDSA cycle before implementation by mid-June 2015.
- *Brochure and posters:* A brochure named "Mom will you do it for me?" was made that contained information about the benefits of breast milk and pictures of how to pump breast milk. It was used during antenatal counselling and in some cases where antenatal counselling had been missed; it was given to the family member during admission of the baby to the NICU. Posters were displayed in the labor rooms and postnatal wards describing the beneficial effects of breast milk, early initiation of breast feeding and expression of breast milk. These were implemented by August end 2015.
- *Videos:* Videos were shown to mothers during counselling sessions informing about benefits of breast milk and its expression. After October 2015, group counselling sessions of all mothers was started fortnightly and videos emphasizing the importance and benefits of breast milk were played in the mothers' room in the NICU.
- *Text messaging and telephonic reminders:* We introduced a system of sending text message at admission of the baby from NICU help line number to parents who delivered a preterm baby. At 4-6 hours after baby's admission, nurse assigned to the baby had to call up the mother via hospital intercom and remind her to send EBM.
- *Standard protocol for Kangaroo mother Care (KMC) and Non-nutritive Sucking (NNS):* Before starting of the project, KMC and NNS were prescribed on random basis by the consultants on rounds. The KMC rates in our unit was 55% and NNS rates was as low as 7.4%. A standard protocol to start KMC and NNS was developed. This was presented and discussed amongst consultants and fellows. After modification based on feedbacks provided, ramps of PDSA cycles were run and this was finally implemented in August 2015.
- *Breast pumps:* The availability of breast pumps was ensured. All pumps in non-working conditions were repaired and new electrical pumps were purchased. Mothers were also encouraged to buy their own breast pumps to express milk at home.
- *Daily logs, list based tracking and team huddle:* The assigned NICU nurse for a baby maintained daily log of volume of EBM available and its time of availability. This helped in providing feedbacks to the improvement team for additional support. The nurse in-charge maintained daily log of infants who were eligible for KMC/NNS and those who actually received them. In addition to these, the team tracked all cases delivered in last 24 hours and maintained an excel sheet of EBM status received by each baby as nil/partial or full EBM. This sheet was used by the consultants during daily routine counselling of the parents. At the end of each day, a system of team huddle was introduced in December 2015, as per which the nurse in charge, lactation consultant and team leader would discuss about each baby's EBM status and difficulty if any encountered.