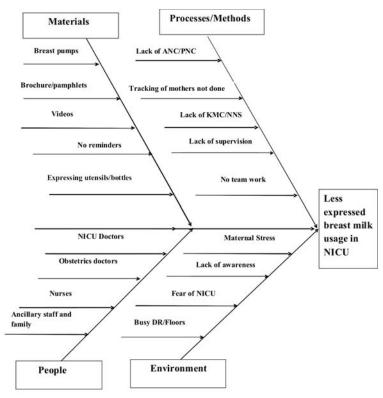
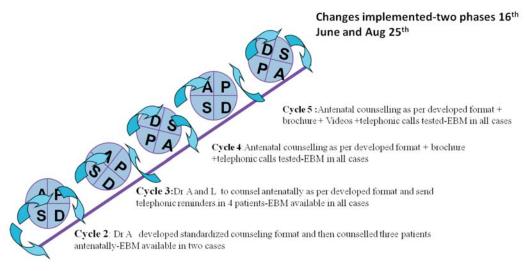
| Aims and Objectives   | Primary Drivers                    | Secondary Drivers                  | Change Ideas   |
|---|------------------------------------|------------------------------------|--|
| • To obtain EBM in >80% of VLBW infants within 48 h of admission to NICU.   | Educate and<br>Counsel<br>Mothers  | Antenatal/ post natal counselling  | Identify mother antenatally     Give mothers educational materials/brochures   |
| <ul> <li>To improve volume of EBM obtained in first 48 h by more than 100% of baseline.</li> <li>To decrease the time of availability of first EBM by 20% of baseline.</li> </ul> |                                    | Disseminate information            | <ul> <li>antenatally</li> <li>Give brochures at admission</li> <li>Send text message at admission to parents</li> <li>Post-natal telephonic reminders</li> </ul> |
| • To improve proportion of EBM volume usage (Once on at least 100 mL/kg/day feeds) by more than 20% of baseline.  | Improve EBM expression in the NICU | Stress<br>management               | Twice weekly group<br>counselling and stress<br>management   |
|   |                                    | Timely help, care and supervision  | Availability of breast pumps     Availability of physical  |
|   |                                    | Maternal involvement in child care | help • Kangaroo mother care protocol   |
|   |                                    | Staff and family involvement       | Non-nutritive sucking     Daily team huddle  |

Web Fig. 1 Driver diagram.

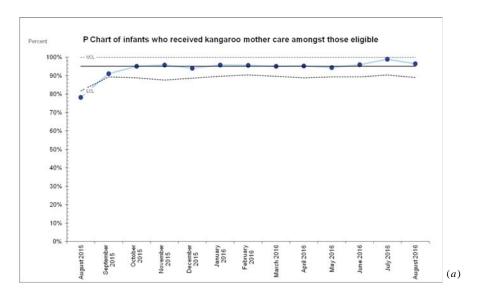


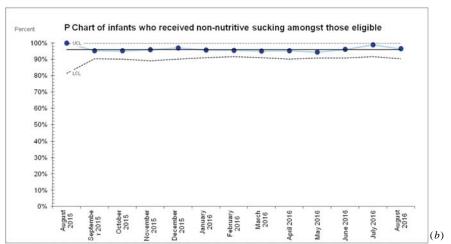
**WEB FIG. 2** Fish bone diagram showing root cause analysis of less EBM usage (ANC/PNC-Antenatal/postnatal counseling, KMC-Kangaroo mother care, NNS-Non-nutritive sucking).

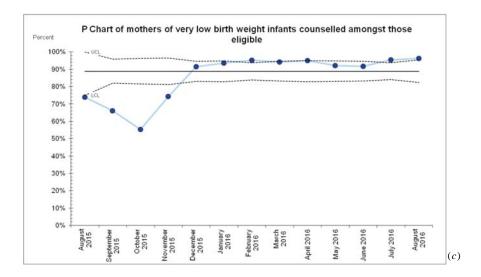


Cycle 1: Dr A counseled 2 patients antenatally without standardized format for EBM availability-EBM not available.

WEB FIG. 3 PDSA Ramp - 1.







**WEB FIG. 4** (a, b, c). Process measures of kangaroo mother care, non-nutritive sucking and counselling. Arrow indicates time point of standardization of protocols.

WEB TABLE I COMPONENTS OF CARE BUNDLE FOR IMPROVING EXPRESSED BREAST MILK USAGE IN VLBW INFANTS

| Element | Description                         | Action required   | Staff Involved   |  |  |
|---------|-------------------------------------|---|--|--|--|
| 1       | Promotion of                        | Antenatal/Early post-natal  |  |  |  |
|         | early expression<br>of breast milk  | Antenatal counselling of mother about<br>benefits of breast milk, how to express<br>breast milk pump availability and how to<br>send milk to NICU | 1, 2, 3-Lactation counsellor and resident doctor/consultant-action to be taken before delivery/in missed cases within 4-6 hours of delivery. |  |  |
|         |                                     | Give mothers educational brochure in<br>English and local language with pictorials  | 4-Resident doctor/Consultant and NICU nurse in charge  |  |  |
|         |                                     | 3. Show mothers videos about expression of breast milk  | 5-Lactation counsellor/nurse in charge   |  |  |
|         |                                     | <ol> <li>Counselling of attendants at admission to<br/>NICU and giving educational brochure if<br/>not given.</li> </ol>                          | 6-Bed side nurse   |  |  |
|         |                                     | 5. Send text message to mother and father at admission to express and send expressed breast milk.   | 7-Data operator/Bedside nurse/Lactation counsellor/resident/Consultant   |  |  |
|         |                                     | 6. Telephonic reminder to mothers/attendants within 2 hours of delivery to send expressed breast milk   | 8-Bedside nurse, Lactation counsellor/doctor in charge/consultant on round   |  |  |
|         |                                     | 7. Daily tracking of mothers who delivered in last 24 hours and Staff/Lactation counsellor visit within 24 hours of delivery                      |  |  |  |
|         |                                     | 8. Staff review/lactation consultant review of expression of milk, pump use and volume.   |  |  |  |
| 2.      | Ongoing support                     | Post-natal  |  |  |  |
|         | for lactation and stress management |   | 1.Consultant on call 2.Bedside nurse/Lactation counsellor/resident in charge   |  |  |
|         |                                     | 2. Maternal group counselling once every two weeks for stress and lactation management  | 3.Consultant and Lactation counsellor 4.NICU sister in charge/lactation counsellor/bedside nurse   |  |  |
|         |                                     | <ul><li>3. Ensure availability of breast pump</li><li>4. Daily team huddle</li></ul>  | 5.Consultant/Lactation counsellor/Data operator  |  |  |

VLBW: Very low birthweight; EBM: Expressed breast milk; NICU: Neonatal intensive care unit.