Changes that improved newborn health services in India

**CONTEXT**

The change ideas shared in the newborn change package is a compilation of ideas that showed success in changing important processes to achieve improvement in services in neonatal period. These change ideas were successfully implemented in a select group of facilities in 27 high priority districts in six states where the USAID ASSIST project was providing technical support to the state governments in improving quality of maternal and newborn health (MNH) services. The change ideas were developed and implemented using the quality improvement approach in the six states of India, viz. Delhi, Jharkhand, Haryana, Himachal Pradesh, Punjab and Uttarakhand. The change ideas shared in this change package are aligned with Government of India’s Facility based Integrated Management of Neonatal and Childhood Illnesses (F-IMNCI)\(^1\) and are only applicable for neonatal interventions in facilities.

**AIM#1** Administration of Injection Vitamin K to all newborns to prevent Vitamin K deficiency bleeding.

<table>
<thead>
<tr>
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| Orientation to medical and nursing staffs on guidelines of the Government of India on administration of Injection Vitamin K to all neonates\(^2\). | • Staffs in many facilities had incomplete knowledge on GOI guidelines for administering of Vitamin K to newborns. They did not have clarity on dosage and timing of administering Injection Vitamin K.  
• In most facilities, Vitamin K was being administered only to pre-term or underweight newborns. | The MOIC oriented the medical and nursing staffs in labor room and in postnatal ward on the importance of Vitamin K administration, the correct dosage, syringe specifications, time of administration and the procurement of Injection Vitamin K1 as is recommended in GOI guidelines. |
| Replacement of Vitamin K3 with Vitamin K1, as per GOI guidelines, for preventing Vitamin K deficiency bleeding in newborns. | The central drug store in the district supplied Vitamin K1 (phylloquinone) to facilities. Some facilities, in case of stock-outs, were using untied funds to procure Injection Vitamin K from local pharmacy as a stop gap arrangement. The local vendor supplied them with Injection Vitamin K3 (menadione) which was used by the staffs. | The USAID ASSIST Project team brought this gap to attention of both the district and state level authorities, with information that Vitamin K1 is not only recommended by GOI but also a natural and non-toxic product versus Vitamin K3 being a synthetic product, with evidence of toxicity for the newborns. As a result, the state issued a directive to all facilities across all districts emphasizing use of Vitamin K1 only. The staffs engaged in procurement in the facilities were oriented to differentiate Vitamin K1 vials from Vitamin K3 vials. |
| Administration of Vitamin K injection before the newborn leaves the labor room or the operation theatre (OT). | • Administration of Injection Vitamin K to newborns was often missed in cases where they were moved from labor room or OT to SNCU or NICU instead of postnatal ward.  
• Vitamin K administration was also getting missed in newborns who had to be referred to another facility for better management of newborn complications. | • Nursing staffs of the facility were oriented not to transfer newborns out of the labor room or the OT until Injection Vitamin K was administered to them.  
• It was also agreed among the nursing staffs to administer Vitamin K to newborns before they were transferred to higher level facility for additional care and maintain record of such cases. |
| Keeping record of Vitamin K having been administered to all newborns, including those being referred to another facility for more care and support.* | Record of Vitamin K administration to newborn was not being practiced in some facilities. Administration of Vitamin K administration could not be verified in absence of proper documentation. | The labor room staffs were encouraged to record the date and time of administering Vitamin K, along with their signature, in the case sheets. |

\(^1\) Government of India. Integrated Management of Neonatal and Childhood Illnesses (F-IMNCI).

\(^2\) GoI guidelines for Vitamin K1 administration to newborns.

\(^3\) Vitamin K3 (menadione) used in some facilities.
**AIM#2**

**Early initiation of breastfeeding in all newborns**

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<tr>
<td>Orientation to nursing staffs on GOI guidelines for infant and young child feeding (IYCF) practices and importance of early initiation of breastfeeding to newborns.</td>
<td>The nursing staffs were not fully aware of the guidelines on IYCF practices and advantages of early initiation and exclusive breastfeeding. They were not sufficiently equipped to motivate mothers and their families for early initiation and exclusive breastfeeding to newborns.</td>
<td>• Nursing staffs were oriented on various aspects of breastfeeding through multiple sessions. In some states, a pediatrician oriented and demonstrated with training aids to the Qi team the correct practices of breastfeeding and also on management of common problems during breastfeeding. • The MOIC instructed the health facility staffs to facilitate initiation of breastfeeding as per GOI guidelines.</td>
</tr>
<tr>
<td>Documentation of early initiation of breastfeeding in the postnatal register.</td>
<td>In many facilities, initiation of breastfeeding to newborns was not being recorded. Early initiation of breastfeeding could not be verified in absence of record.</td>
<td>Additional columns were created in the postnatal register by the nursing staffs to record cases in which breastfeeding was initiated within one hour of birth.</td>
</tr>
<tr>
<td>Initiate breastfeeding in the labor room immediately post delivery.</td>
<td>The practice in many facilities was to initiate breastfeeding once mother and newborn were shifted to the postnatal ward. Delays in shifting the mother and newborn to the ward often resulted in delayed start of breastfeeding. Early initiation and exclusive breastfeeding was further delayed in some cases when family members insisted on performing birth rituals for mother and newborn.</td>
<td>• Labor room staffs were made responsible to initiate breastfeeding before shifting the newborn and mother out of the labor room. • Staffs counseled mothers in labor room on benefits and proper method of breastfeeding. • In some facilities, the staffs initiated breastfeeding in the labor room before administering Injection Vitamin K to the newborn.</td>
</tr>
<tr>
<td>Counseling on early initiation and exclusive breastfeeding to mothers from the time of her ANIC visits by medical and paramedical staffs, Sahiyas, GNM trainees, Yashodas or by staffs trained in IYCF practices.</td>
<td>There were no dedicated staffs responsible to counsel the pregnant woman and her family members, who either had limited knowledge on or had misconceptions regarding infant feeding practices. Most facilities had only one nursing staff to facilitate deliveries and provide postnatal services. Heavy workload on both fronts resulted in them missing the component of getting breastfeeding initiated within an hour of delivery. IYCF counselors, who were available in most hospitals, were placed with the pediatric department and were not engaged in counseling pregnant women</td>
<td>• Staffs (medical and paramedical), Sahiyas, Yashodas, IYCF counselors and GNM trainees were oriented to include counseling on breastfeeding into the antenatal counseling sessions with the pregnant women. Along with counseling on diet and nutrition, care during pregnancy, birth preparedness, complication readiness and family planning, they were told about the benefits of colostrum, early initiation and exclusive breastfeeding. • The nurses in Newborn Stabilization Units (NBSUs), who are available in shifts round the clock in CHCs, were engaged by the MOICs to counsel mothers on early initiation of breastfeeding. • In some facilities, the nursing students (GNM trainees) who were placed to assist the labor room staffs, were engaged to counsel and motivate mothers to begin breastfeeding within one hour of birth and document it in the labor room register. • The departments of pediatrics and gynecology in district hospitals agreed to engage IYCF counselors to begin continuum of care of infants and young children from the antenatal period.</td>
</tr>
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Proportion of newborns administered Vitamin K within 24 hours of birth

*These change ideas were implemented in selected government health facilities in Jharkhand.*
The USAID ASSIST Project acknowledges the unwavering support of Dr. Rakesh Kumar, Joint Secretary (RCH), Ministry of Health and Family Welfare, Government of India, in the development of this change package.

**Early initiation of breastfeeding in all newborns**

- Most facilities had only one nursing staff.
- There were no dedicated staffs engaged in counseling pregnant women in most hospitals, which resulted in them missing the component of getting breastfeeding initiated within an hour of delivery.
- Heavy workload on nursing staffs to record cases in which breastfeeding was initiated led to their responsibility to counsel the pregnant mother being neglected.

In some facilities, the nursing students (GNM trainees) who were responsible to counsel the pregnant mother and their attendants were not enough.

The MOIC instructed the health facility staffs to facilitate initiation of breastfeeding as per GOI guidelines.

Nursing staffs were oriented on various aspects of breastfeeding and family planning, they were told about the benefits of breastfeeding among mothers. Along with counseling on diet and nutrition, they included counseling on breastfeeding into the antenatal counseling sessions with the counselors and GNM trainees were oriented to include counseling on early initiation and exclusive breastfeeding, as one time counseling session to mothers and their attendants was not enough.

**AIM#3**

**Drying and wrapping of newborns in warm cloth to prevent hypothermia**

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<td>Drying and wrapping of newborns</td>
<td>in ANC clinics or mothers in the postnatal ward, which are under the gynecology department.</td>
<td>Responsibility of IYCF counselors was expanded to include visits to ANC clinics and postnatal wards to counsel mothers and promote early initiation and exclusive breastfeeding.</td>
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**AIM#4**

**Need based breathing assistance to newborns**

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<td>Need based breathing assistance to newborns</td>
<td></td>
<td>Introduction of a practice to keep clothes used for wrapping newborns in the warmer half an hour before delivery so that it is warm enough to wrap the newborn on birth.</td>
</tr>
</tbody>
</table>

**Proportion of newborns who were breast fed within one hour of birth**

**Proportion of newborns who were dried and wrapped after birth**

**Change idea**

- Placement of posters on early initiation, correct practice and correct placement of newborn for breastfeeding pasted in the wards as visual reminder and as reinforcement of messages to the mothers and their attendants.
- Reinforcing breastfeeding messages through different cadres of staffs working in the postnatal ward.

**Logic for change**

- There was a need to create a mechanism of continuous reminders to mothers and relatives to practice early initiation and exclusive breastfeeding, as one time counseling session to mothers and their attendants was not enough.
- The support staffs deputed to the postnatal wards also interacted with the mother and her attendants on a regular basis. As the mother and her attendants shared a lot of socio-cultural and demographic characteristics with the support staffs, they found repetition of medical advice by them more reasonable and acceptable.

**How the change happened**

- The QI team members organized a short sensitization session for the support staff on early initiation and exclusive breastfeeding. The support staffs were encouraged to ask the mother and relatives “has the baby been breastfed?” in each of their interaction with the mother and their attendants. This helped reinforcing the practice of breastfeeding among mothers.

IEC materials were created and displayed in local language informing the mothers on the benefits of early initiation and exclusive breastfeeding. Posters showed proper positions of feeding the baby, time of feeding and benefits. The materials were placed at conveniently visible places in the labor room, ANC clinics and postnatal wards.

**Change idea**

- Proper placement of a baby tray ready in labor rooms and ensuring that all apparatus like mucous extractor, suction machine and ambu bag are working.

**Logic for change**

- Labor room staffs usually had to rush to the nursing stations or to the in-house store for materials needed for newborn care. There was no practice of keeping a baby tray ready in labor room.

**How the change happened**

- Labor room staffs were oriented on preparing a baby tray as part of their delivery preparedness. In addition, mucous extractor, a suction machine and ambu bag were kept in working condition.

The support staffs deputed to the postnatal ward, which are under the gynecology department.

**Change idea**

- Essential and emergency newborn care training, as per NNSK guidelines of GOI, and practical training using mannequins to all labor room staff.

**Logic for change**

- Labor room staffs were not trained to provide breathing assistance to newborns in many facilities. In case of breathing complications, they either preferred referring the newborn to Sick Newborn Care Units (SNCU) or call the pediatrician to labor room for support, often losing critical time in resuscitating the newborn, (the golden first minute after birth).

**How the change happened**

- The state officials integrated NNSK training in its Program Implementation Plan (PIP). The QI team members, who were first trained by pediatricians, trained and mentored the labor room staffs. Pediatrician posted in facility continued hand holding to labor room staffs.
### Sterile cord clamping to prevent infections among newborns

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<td>Orientation of labor room staff regarding use of sterile cord clamps.</td>
<td>Labor room staffs were not aware about the effectiveness of sterile cord clamps in preventing infections in newborns.</td>
<td>MOIC of the facility oriented the nursing staffs on importance of using sterile clamps in prevention of neonatal sepsis and side effects of using threads.</td>
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<tr>
<td>Use of quality cord clamps.</td>
<td>The sterile cord clamps available in some facilities were of inferior quality, which used to give way with thick cords. This discouraged the staffs from using those clamps. Thread was used to tie the umbilical cord, increasing risk of infection.</td>
<td>• The staffs involved in procurement were oriented to assess the quality of cord clamps and the features they needed to look for during procurement. • The labor room staffs were oriented on the advantages of using quality disposable cord clamps and trained on sterile cord cutting practices.</td>
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<td>Recording the use of cord clamps in the labor room register.</td>
<td>Reviewing delivery files was a challenging task and the staffs were not ready to maintain a separate register for recording cord cutting and clamping. Recording and reviewing was easier in the labor room register.</td>
<td>A blank column available in the labor room register was used for recording sterile cord cutting and clamping. The staffs wrote 'yes' or 'no' in that column depending on whether or not the clamp was used.</td>
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<td>Timely indenting of sterile cord clamps by the labor room staff.</td>
<td>There were times when the stock of cord clamps in the labor room got exhausted despite it being available in the store at the facility.</td>
<td>A process of periodic indenting between labor room and the store, based on average delivery load, was set up to ensure 24 x 7 availability of cord clamp in the labor room.</td>
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<td>Planned procurement (in time, in adequate quantity and of appropriate quality) of sterile cord clamps to ensure 24 x 7 availability.</td>
<td>While sterile cord clamps were available in many facilities, they were not procured on the basis of delivery load in the facility. This sometimes resulted in stock outs.</td>
<td>• The staffs involved in procurement were oriented to calculate average delivery load of the facility and keep three months of sterile cord clamps' supply in stock.</td>
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#### Proportion of newborns who were provided sterile cord clamping

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### References

- F-IMNCI is a Government of India program to build capacities of the health personnel at facilities to address newborn and childhood illness and bridge the acute shortage of specialists.
- Janani Shishu Suraksha Karyakram is a national initiative to provide free and cashless services to pregnant women including normal deliveries and caesarean operations and sick new born (up to 30 days after birth) in Government health institutions in both rural & urban areas. Accessed from http://www.nhp.gov.in/health-programmes/national-health-programmes/janani-shishu-suraksha-karyakram-jssk on 15 Jan 2015.
- Sahiyyas in Jharkhand are equivalent to an Accredited Social Health Activist (ASHA) in other states of India.
- Yashoda is a non medical volunteer who are placed at facilities to take care of mother and child post delivery. She facilitates post partum care and essential newborn care.
- Rogi Kalyan Samiti, i.e., Patient Welfare Committee, is a registered society established by Government of India, which acts as a group of trustees to manage the affairs of a public health facility.

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### Abbreviations

- **ANC** Antenatal care
- **MNHI** Maternal and Newborn Health
- **ASHA** Accredited Social Health Activist
- **MOIC** Medical Officer In-Charge
- **ASSIST** Applying Science to Strengthen and Improve Systems
- **NSBU** Newborn Stabilization Unit
- **CHC** Community Health Center
- **OT** Operation Theater
- **F-IMNCI** Facility Based Integrated Management of Neonatal and Childhood Illnesses
- **SNCU** Sick Newborn Care Unit
- **PIP** Program Implementation Plan
- **GNM** General Nurse Midwives
- **QI** Quality Improvement
- **GOI** Government of India
- **RKS** Rogi Kalyan Samiti
- **IYCF** Infant and Young Child Feeding
- **SNCH** Sick Newborn Care Unit
- **JSSK** Janani Shishu Suraksha Karyakram
- **USAID** United States Assistance for International Development

### Quality Improvement Approach

The QI approach used in the USAID ASSIST Project consists of seven steps:
1. Defining the improvement aim
2. Forming the improvement team
3. Understanding the current system
4. Developing a measurement system
5. Developing changes
6. Testing changes
7. Implementing and sustaining changes

### Model for improvement

What are we trying to accomplish? What will result in improvement? How will we know that a change is an improvement?