NAVJEEVAN

Impact of promoting referral for newborns with danger signs and strengthening first referral level facilities on newborn survival

(A cluster randomized trial)

Status Report

Sept, 2010 – March, 2012

Department of Medical, Health and Family Welfare Services
in collaboration with
ARTH, WHO and UNICEF

Statement of the problem

The largest numbers of births and newborn deaths in the world occur in India. Over 26 million infants were born in India in the year 2000. Of these, it is estimated that 1.2 million died within 28 days of birth. These deaths account for over one quarter of the new born mortality in the world. Newborn deaths also account for over 45% of the child mortality in India. They are due mostly to three causes: sepsis, asphyxia and prematurity/low birth weight. Existing interventions, if they reached universal coverage, would be able to reduce these deaths by over 60%, making an irreplaceable contribution to the ability of India to reach MDG4.

Rationale for the Project

Interventions to improve newborn survival can be delivered during pregnancy, during labour and childbirth, and during the newborn period. Obstetric complications, particularly in labour, are a major source of stillbirths and early neonatal deaths. Intrapartum risk factors increase the risk of perinatal or neonatal death more than pre-pregnancy or antenatal factors[i]. Improved delivery care, with labour surveillance for early identification of complications, such as provided by the partograph, has been associated with significant reductions in newborn mortality[ii].

Recent studies indicate that quality of delivery care in many health facilities do not meet the standards required for their full impact on maternal of newborn survival. While the provision of newborn care at the home and first level facilities such as primary health centres is a core child health intervention that is expected to reduce newborn mortality by over 30%, newborns that are severely ill will need to be referred to a higher level facility for care.

Therefore this intervention is being implemented and evaluated to understand the impact of improving access to quality referral care for newborns identified with danger signs in the community. It is being conducted in settings where IMNCI has been implemented both at the community and first level facility and therefore builds on it.

Overview

The intervention provides incentives to ASHAs for helping families in the decision to accept referral recommendations, the creation of a telephone helpline and of access to a pool of vehicles to facilitate transport to referral facilities, and providing social support during stay at hospital. In addition, first referral level facilities, i.e. Community Health Centres (CHCs), are being supported for improved management of labour, provision of essential newborn care at birth and management of sick newborns. The primary impact of the intervention will be measured in terms of reduction in newborn mortality, increased utilization of CHCs and district hospitals for newborns with severe illness.

Key partners and their roles:

The study is being implemented by following key partners – Department of Medical, Health & FW services, Government of Rajasthan, ARTH Udaipur, UNICEF, Rajasthan and WHO. Their roles are mentioned below:

1. **Action Research and Training for Health** (ARTH):
   (www.arth.in)

   It is a private, non-profit, research and training organization that was established by a group of professionals in 1997 with the intent to contribute to the improvement of health status among underprivileged communities in India. ARTH's main role is to anchor the study, conduct evaluations and implement the helpline.

2. **Department of Medical, Health and Family Welfare, Government of Rajasthan:**

- ➢ Provide overall oversight
- ➢ Finance additional staff, renovation in infrastructure and equipment for newborn care at CHCs
- ➢ Oversee the provision of routine services at CHC and ensure that inputs (human resources, supplies etc.) are available on a regular basis.
- ➢ Monitor progress of implementation of CHC strengthening
- ➢ Strengthen routine Health information system at the CHCs
- ➢ Follow up on study findings, including expansion to other areas in the state if the intervention is effective

3. **UNICEF:**

- Help finance renovations in infrastructure, equipment, incentives for ASHAs and transport costs for newborns with severe illness
- Help finance establishment and functioning of the helpline
- Oversee the strengthening of CHCs, including capacity development and health systems
- Technical support for process and outcome monitoring
- Dissemination of findings and follow up

4. **WHO:**

- Finance progress and outcome measurement
- Help finance, establishment and functioning of helpline
- Technical support for capacity development and for process and outcome monitoring
- Dissemination of findings

THE CURRENT STUDY

Primary Objectives

1. To evaluate the effectiveness of an intervention comprising of (i) promoting referral for newborns with danger signs in the community (*incentives to ASHA, telephone helpline, transport, social support during stay at hospital*) and (ii) strengthening Community Health Centres (*first referral level facilities*) for improved management of labour, essential newborn care at birth and management of severely ill newborns, in reducing neonatal mortality, in a setting where IMNCI (*community and facility level*) is being implemented

2. To evaluate the effectiveness of an intervention comprising promoting referral and strengthening CHCs for improved management of newborns with danger signs in increasing utilization of CHCs for treating such newborns.

Secondary Objectives

2) To evaluate the effectiveness of strengthening CHCs for improved management of severely ill newborns on quality of care received by newborns with danger signs presenting to these facilities.

3) To evaluate the effectiveness of strengthening CHCs for improved management of labour and essential newborn care at birth, in improving quality of care received by women in labour and newborns born at these health facilities.

4) To evaluate the effectiveness of strengthening CHCs for improved management of labour, essential newborn care at birth and management of severely ill newborns in reducing perinatal mortality for births occurring at these facilities.

Expected Outcomes

Primary

1. Neonatal mortality rate, overall, by place of birth (home/health facility) and by time of death (0-1 day/2-28 days)
2. Proportion of newborns with danger signs (e.g. stopped breastfeeding well) taken to a referral facility

Secondary

3. Cause-specific neonatal mortality
4. Stillbirth rate for births occurring at CHCs
5. Early neonatal mortality for births occurring at CHCs
6. Proportion of newborns admitted in CHCs and diagnosed as having sepsis who received appropriate injectable antibiotics for at least 7 days (death, discharge or leaving against medical advice will be considered as failure)

7. Proportion of LBW newborns admitted in CHCs and unable to directly breastfeed who were fed expressed breast milk by alternative feeding methods such as cup/spoon or intragastric tube until they are able to fully breastfeed

8. Proportion of LBW newborns admitted in CHCs kept in skin to skin contact with the mother or under a radiant warmer until they are discharged from hospital.
9. Proportion of health workers conducting delivery in CHCs who provided adequate newborn care at birth (immediate thorough drying, skin to skin / wrapping, appropriate timing of cord clamping, early initiation of breastfeeding) during an observation

Intervention Clusters:

Kapasan (Chittorgarh)
Devgarh (Rajsamand)
Choti Sadri (Pratapgarh)
Abu Road (Sirohi)
Gangapur (Bhilwara)
Partapur, Chhota Dungra and Ganoda (Banswara)

Description of Activities

(a) Baseline Survey

(b) Intervention Implementation :

1. **Intervention Introduction Phase (six months):** The purpose of this phase is to pilot the intervention and ensure its effective implementation. It includes:

- Establishment of Newborn Stabilization Units at CHCs
- Launch Navjeevan Helpline to provide referral transport to sick newborns upto CHC and community activities to publicize helplie
- IMNCI refresher training of ASHAs
- Improve MIS on newborn care

2. **Intervention delivery Phase:** The purpose of this phase is to optimally implement the intervention over two full years, with all components being operational on the ground. Processes will be monitored during this phase in intervention and control areas.

3. **Outcome Measurement Phase:** During this phase, an end line survey will be carried out in the involved clusters and major learning from the intervention as well as outcomes will be documented.

BASELINE SURVEY

A baseline study was conducted in 16 CHC clusters of 8 districts in Southern Rajasthan in 2009-10 so as to determine the perinatal and neonatal health status including mortality rates. Based on 2001 census, villages totaling to a population of 60,000 around each community health centre (CHC) were selected for conducting survey. Thus a total population of 10,05,570 (215 municipal wards and 693 villages) was covered in the survey. As per 2001 census, 11.2% population was urban, 57% belonged to schedule caste and schedule tribe (SC/ST). The literacy rate among SC/ST women was only 24.2%.

The following tables present the demographics and major findings obtained from the survey:

Mortality, Rates in Southern Rajasthan

(ARTH,GOR,WHO,UNICEF Baseline Study ,2010)

S.N.	District	CHC	Surveyed population	% Urban Population	% Maternal literacy	% SC & ST Population	Sex Ratio	% Institutiona l deliveries
1	Banswara	Ganoda	62,981	0.0	29.2	70.5	917	79.0
2	Banswara	Chota Dungra	69,513	0.0	19.2	92.9	998	89.2
3	Banswara	Parta Pur	62,130	19.8	46.8	49.8	886	80.6
4	Banswara	Choti Servan	61,303	0.0	17.0	97.9	992	75.4
5	Dungarpur	Simalwara	62,601	0.0	32.5	69.5	900	69.6
6	Pratapgarh	Dhariyawad	63,606	15.1	21.8	76.5	951	81.4
7	Pratapgarh	Choti Sadri	58,976	28.2	46.5	43.7	912	77.4
8	Chittorgarh	Nimbhaheda	58,982	92.7	75.8	13.9	1011	83.1
9	Chittorgarh	Kapasan	59,414	33.6	40.7	23.6	850	82.5
10	Pali	Jetaran	62,862	33.9	48.0	22.6	725	77.2
11	Pali	Rani	61,849	18.4	48.5	22.5	919	68.3
12	Sirohi	Abu road	62,130	77.6	56.6	38.5	998	85.6
13	Sirohi	Pindwada	67,209	35.1	29.5	44.9	879	72.4
14	Bhilwara	Gangapur	67,242	26.0	39.4	24.0	873	68.7
15	Rajsamand	Deogarh	64,199	26.5	34.2	23.9	844	49.5
16	Rajsamand	Railmagra	60,573	13.8	38.3	26.0	870	75.1
	16 clusters	**TOTAL**	**1,005,570**	**25.9**	**35.9**	**46.7**	**912**	**76.1**

Mortality Rates

S.N.	District	CHC	CBR	SBR	NMR	ENMR	LNMR	PNMR
1	Banswara	Ganoda	25.4	27.4	58.2	45.7	12.5	71.8
2	Banswara	Chota Dungra	32.4	39.2	59.9	49.3	10.7	86.6
3	Banswara	Parta Pur	18.9	24.9	48.5	34.0	14.5	58.1
4	Banswara	Choti Servan	34.8	20.2	54.3	38.4	15.9	57.8
5	Dungarpur	Simalwara	27.1	22.5	57.8	45.4	12.4	66.9
6	Pratapgarh	Dhariyawad	28.0	26.8	58.4	41.0	17.4	66.7
7	Pratapgarh	Choti Sadri	19.6	37.5	64.0	55.4	8.7	90.8
8	Chittorgarh	Nimbhaheda	18.2	23.6	39.0	27.9	11.2	50.8
9	Chittorgarh	Kapasan	16.5	23.0	61.3	52.1	9.2	73.9
10	Pali	Jetaran	19.4	26.4	47.6	40.2	7.4	65.5
11	Pali	Rani	18.6	32.0	45.2	36.5	8.7	67.3
12	Sirohi	Abu road	18.7	19.4	41.4	30.2	11.2	49.0
13	Sirohi	Pindwada	26.2	19.5	57.3	40.3	17.0	59.0
14	Bhilwara	Gangapur	21.8	13.4	50.4	42.3	8.2	55.1
15	Rajsamand	Deogarh	22.1	29.4	51.4	39.4	12.0	67.6
16	Rajsamand	Railmagra	20.4	32.1	75.1	54.1	21.0	84.4
	16 clusters	**TOTAL**	**23.1**	**26.2**	**54.9**	**42.3**	**12.7**	**67.3**

CBR= Crude birth rate
SBR= Still birth rate
NMR = Neonatal Mortality Rate
ENMR = Early Neonatal Mortality Rate
LNMR = Late neonatal Mortality Rate
PNMR= Perinatal Mortality Rate

NAVJEEVAN INTERVENTION:

After completion of the baseline survey, activities that took place so far in the formative phase of intervention from September, 2010 to January, 2012 have been grouped in the following three categories:

1. **Establishment of Newborn Stabilization Units (NBSUs) in CHCs**
2. **Launching a helpline service for sick newborn referral**
3. **IMNCI Refresher Training of ASHAs**
4. **Improving MIS for newborn care**

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1. Establishment of NBSUs in CHCs

a) **Baseline Facility Assessment on Neonatal Care facilities:** Initial baseline facility assessment on the availability of newborn care facilities and staff, of all 8 intervention CHCs involved in the trial was conducted in October- November, 2010 which was repeated in Oct-Nov, 2011 to assess changes in the status after one year of intervention.

- **Instruments and Methods**: A questionnaire to be used for the CHC assessment on newborn care was developed based on *Indian Public Health standards for neonatal care in CHCs* and *UNICEF Toolkit for establishing newborn care corner and stabilization units* and was piloted in 2 CHCs before final use. Data from all CHCs was collected by direct observation of labour rooms and maternity units in order to assess the readiness to provide newborn care. We assessed the availability and functional status of two entities -- a newborn care corner within the labour room, and a Newborn Stabilization Unit (NSU) near the labour room for treatment of sick newborns.

- **Indicators:** The main indicators for CHC assessment included space availability, location and configuration of newborn care corner and stabilization unit, availability of equipment, supplies, drug kit, round the clock availability of human resources (Pediatricians and Nurses) and referral facilities (ambulance).

- **Major Findings:** The data for all 8 intervention CHCs was analyzed in MS excel and individual result for each CHC was captured in the form of a ***CHC report card*** with specific recommendations for each CHC to improve Newborn care facilities. The reports from initial assessment conducted in Oct.2010 revealed deficiencies in availability of equipment, supplies, drugs and human resources for newborn care. Most of the CHCs (7/8) had a newborn care corner in the labour rooms for immediate newborn care whereas none of them had a separate Stabilization Unit for treatment of sick newborns.

  In the second assessment (Oct, 2011), NBSUs were established in 7 out of 8 CHCs and there were improvements in the status of equipment, supplies and drugs for perinatal and neonatal care. All CHCs were equipped with Radiant warmers and phototherapy units. After establishment of some NBSUs in 2011, supplies such as mucus suckers, IV cannula, digital thermometer, cord clamps, Oxygen cylinder and catheters, Pediatric drip sets and Naso gastric tubes were available at most of the CHCs. (results attached)

Labour room and Newborn Care Corner (NBCC)

		Assessment 1 (n=8) (Oct,2010)	Assessment 2 (n= 8) (Oct, 2011)
Labour and newborn care facilities	Newborn Care Corner present	7	8
Equipment	Functional Radiant Warmer	2	6
	Resuscitator (bag and mask, 250 - 400 ml)	7	8
	Manual Weight machine	7	7
	Electronic suction machine	7	7
	Foot operated suction machine	0	2
	Fetoscope / Stethoscope/ Fetal Doppler	0	5
	BP Instrument	1	4
	Laryngoscope and Endotracheal Tubes	0	6
	Low reading digital thermometer	0	4
	Room Thermometer	0	0
Consumables	IV Cannula (18G and 24 G)	6	8
	Mucus Sucker	6	8
	Oxygen cylinder/ concentrator	8	8
	Oxygen catheter/ nasal prongs/ oxyhood)	3	7
	Partograph	1	4
	Towels for wrapping and drying newborn	0	2

Newborn Stabilization Unit (NBSU)

		Assessment 1 (n=8) (Oct,2010)	**Assessment 2 (n=8) (Oct, 2011)**
NBSU Facilities	NBSU Present	0	7
	Electricity (Generator/Invertor)	0	0
Equipment	Functional Radiant Warmers	0	8
	Phototherapy Machine	0	8
	Resuscitator (bag and mask, 250 - 400 ml)	0	5
	Digital Weight machine	0	2
	Foot operated suction machine	0	5
	Pulse Oxymeter	0	4
	Glucometer	0	0
	Low reading digital thermometer	0	4
Consumables	IV Cannula (24 G)	0	6
	Pediatric Drip set	0	4
	Mucus Sucker	0	8
	Oxygen cylinder/ concentrator	0	7
	Oxygen catheter/ nasal prongs/ oxyhood)	0	7
	Feeding tubes (Fr 5,6)	0	4

- **Dissemination of CHC baseline assessment results and liaison with Government health officials at block, district and state levels:**

Following the initial facility assessment (2010), the report cards for all intervention CHCs were shared with block, district and state level health officials through regular meetings and telephonic conversations from Dec 10 to Feb 11. Project staff members interacted with concerned authorities at state, district and block level and results for individual CHCs were shared along with specific recommendations and steps to be taken further so as to mobilize the government health officials and NRHM to strengthen newborn care facilities at these 8 CHCs.

Selection of CHCs for NBSUs:

100 CHCs were selected by Department of Health and Family Welfare in 2010 for establishing NBSUs out of which 6 were a part of Navjeevan Intervention (Abu Road, Choti Sadri, Kapasan, Gangapur, Partapur and Devgarh) where a CHC Chota Dungra and Ganoda were excluded from this list. Hence extra efforts were made to include both these CHCs in the list followed by subsequent allotment of budget for NBSU (Rs.1,25,000 including minor repairs and supplies), equipment including radiant warmers and phototherapy machine and human resources.

A list of 40 CHCs was again selected in 2011 for establishing NBSUs (NRHM letter no. CH/NBSSU/11/9697) which were allotted Rs.25,000 each for consumables and drugs). It included 3 Navjeevan Control CHCs and excluded Ganoda.

CHC strengthening on neonatal care facilities: Further to dissemination of baseline facility assessment results in 2010, project staff carried out regular visits to all 8 CHCs from Feb, 2011 onwards and assisted CHC staff in establishing NBSUs as per deficiencies identified during facility assessment and subsequently.

- **Budget for NBSU**:
  Initial cost: When asked to start establishing the units, it became apparent that CHC staff often was unaware of budget allocated from State government in 2010 for the NBSUs (Rs.125,000 per CHC) which was available at the block level with the Block Programme manager (BPM). Block officials were directed to transfer the budget to CHC flexi-pool and assist the CHC incharge in utilizing this budget for carrying out minor repairs for the room and purchasing supplies and drugs.
  The initial budget for CHC Chota Dungra was released in March, 2011 and NBSU was established by April, 2011.

  Maintainence Cost : By the end of financial year in March, 2010, the initial budget was consumed in most CHCs and it lapsed in the remaining few. In 2011, a maintainence cost of Rs.50,000 (NRHM letter no.CH/NBSU/11/9658 dated 24th June, 2011) was allocated for these 100 CHCs which remained unutilized. Efforts are being made to ensure proper utilization of this budget for purchase of consumables and drugs for NBSUs.

  However, CHC Ganoda is yet to be included in the list of 100 FRUs and no budget has been sanctioned to initiate establishment of NBSU.

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- **Space**: Rooms for NBSU were identified near labour rooms (either by selecting unused rooms or vacating store rooms). Minor civil work was started under supervision of CHC Incharge (wall tiles, electrical outlets, swing door, wash basin with geyser, etc.) which was followed by installation of equipment and supplies. This process took place from March to July, 2011 .

Issues with ***CHC Kapasan*** included reluctance of officials in charge to shift from the old CHC to new building. There was no space at all in the old CHC to establish NBSU and hence despite the availability of equipment and supplies, NBSU establishment was delayed.

CHC Ganoda: During September, 2011, the new JSY ward was undergoing construction on first floor which took almost a year (July 2010 – August 2011) and is still ongoing. A room on ground floor near to post natal ward and labour room was vacated for NBSU and equipment was installed for establishing the NBSU.

- **Equipment**: After ensuring completion of minor repairs and physical infrastructure in NBSUs during follow up visits, the task of shifting equipment and supplies was initiated along with CHC staff.
  Initially radiant warmers and phototherapy machines were supplied to 6 out of 8 CHCs (excluding Chota Dungra and Ganoda). Following correspondence with officials at Department of Health, equipment was supplied to both these CHCs by end of March, 2011. Since the equipment was not installed in any of these CHCs and local electricians contacted were unable to handle them, dealers from Meditrin company, Mumbai (the contracted company that supplied the equipment) were contacted to get the equipment installed in 8 CHCs on a priority basis and orient nurses about proper handling. Being short-staffed, the company took time to install equipment in all 8 CHCs. Follow up was done by verifying from all 8 CHCs regarding proper installation and functioning of equipment.

- **Supplies and Drugs**: The CHCs had few supplies and limited stock of drugs purchased from RMRS which did not include drugs for neonatal care. Not all staff members at CHCs were aware of availability of these supplies (provided by government along with other medical stocks) hence during subsequent visits by project staff, all supplies available in store rooms were shifted to NBSU rooms and stored properly (including ambu bags, laryngoscopes, digital thermometers, glucometers, oxygen concentrators etc). CHC in-charge officers (along with NRHM accountants) were asked to purchase few materials not available in supply including pulse oxymeter, digital weighing machines, Nasogastric tubes, suction and oxygen catheters, IV cannula, pediatric drip sets and all required drugs. After initiation of NBSUs, some CHCs are utilizing available supplies where as in the remaining ones, patient's family is arranging for the same from medical stores.

  After the introduction of JSSK and Free medicine scheme at CHCs in September and october, 2011 respectively, few drugs could be made available for treatment of sick newborns while the others are being purchased by patient's family from medical stores.

- **Human Resources**: At the time of baseline assessment, only 2/8 CHCs (Gangapur and Kapasan) had a locally resident pediatrician working on a regular basis, and at two CHCs (Devgarh and Chhoti Sadri), the paediatrician commuted from Mavli (~80 km) and Chittorgarh (~60 km) and hence was not available at night or early morning. The pediatrician at Abu Road was transferred to Sirohi in April 2011. None of the CHCs had nurses deputed exclusively for newborn care. Dedicated staff for newborn care was not available round the clock. Most of the available staff worked for the whole CHC on a rotation basis within the wards as per requirement, with most CHCs having only one nurse on 12-hour night duty. At night especially, the nurse handling deliveries in labour room was expected to simultaneously take care of sick newborns in NBSU. As per information obtained from staff, some specialist doctors (Paediatricians and Gynaecologists) posted to these FRUs by state government in last quarter of 2010 were unwilling to work at these places and had either not joined or joined and went on leave. Medical Officers (mostly non-specialist MBBS), where available, lacked knowledge on sick newborn care and need to be trained.

Efforts were made to depute additional nursing staff, paediatricians and MOs at CHCs as per requirement by communication with Department of health, Jaipur. Concerned CMHOs were asked to appoint nurses and doctors from these CHCs who were on deputation to other health centers so that they can provide services at these CHCs for newborn care. Subsequently it was decided to train the existing staff (medical officers and nurses) to build their capacity for handling sick newborns and then to start the NBSUs.

CHC Gangapur and Partapur were the first ones to meet the above requirements and hence NBSUs were initiated with the help of paediatrician in Gangapur (Jan, 2011) and a gynaecologist and nurses in Partapur (March, 2011). The NBSU in CHC Chota Dungra was initialized by May, 2011 (after completing minor repairs and procurement of supplies). Two nurses from Chota Dungra and 2 from Partapur were oriented on sick newborn care at FBNC Banswara for 4 days on ad hoc basis in April, 2011 after which the units were started. The same staff was additionally deputed to attend NBSU training that was held in June-July 2011.

NBSU Training of CHC staff

In order to initiate Newborn stabilization Units and build capacities of CHC staff , medical officers and nurses were trained on essential and sick newborn care. The training was based on the pattern of “Facility based Newborn Care” (FBNC) carried out for staff of district level “Sick Newborn Care Units” (SNCUs). Course material was developed by adapting the UNICEF-NNF FBNC module, elements from the F-IMNCI module and some guidance material from SNL publications. The same was translated into simple Hindi. Training was carried out at Children’s Hospital, Udaipur through the combined efforts of Department of Medical, Health and Family Welfare, Rajasthan, UNICEF and Department of Pediatrics, RNT Medical College. Three internal facilitators (2 paediatricians and 1 nursing tutor) and two external facilitators (pediatricians from NNF) facilitated theory sessions and skill stations over four days. Two weeks of clinical observership that followed after theory, was facilitated by the nursing tutor and other staff of the NICU.

<table>
<tr><th></th><th>Theory sessions (newborn care)</th><th>Labour Monitoring and MIS sessions (By ARTH)</th><th>Clinical Postings in NICU</th><th>Local Facilitators</th><th>External Facilitators</th><th>From</th></tr>
<tr><td>Batch 1</td><td>22-25 June 2011</td><td>2 & 9 July, 2011</td><td>26 June - 9 July, 2011
(posted in NICU and labour room on rotation basis)</td><td rowspan="3">Dr.Suresh Goyal
Dr.Devendra Sareen
Dr.Lakhan Poswal
Saifuddin Khan
(Dept. of Pediatrics, M.B.Hospital, Udaipur)</td><td>Dr.Sunita Bhatia
Dr.Sadhna Mehta
Dr.Rajpreet Soni</td><td>Kasturba Hospital, New Delhi
Fortis Hospital, Jaipur</td></tr>
<tr><td>Batch 2</td><td>20-23 July, 2011</td><td>25-26 July, 2011</td><td>24 July - 6 Aug, 2011
(posted in NICU and labour room on rotation basis)</td><td>Dr.Anuradha Gowil
Dr.Ashish Jain</td><td>Kasturba Hospital,
Hindu Rao Hospital New Delhi</td></tr>
<tr><td>Batch 3</td><td>16th-19th Nov,11</td><td>28th -29th Nov,11</td><td>20th Nov - 3rd Dec,11</td><td>Dr.Somshekhar</td><td></td></tr>
</table>

Facilitation of NBSU training by ARTH included the following activities:

i. Facilitating the scheduling of training and nomination of trainees (doctors and nurses) from 8 CHCs (in consultation with CHC in-charge)
ii. Conducting 1.5 day session on labour monitoring and perinatal practices (including theory and field visit) and a half day session on MIS and record keeping for newborn care at CHCs.
iii. A Hindi manual was not available for training nurse mid wives on NBSUs and hence a reference manual was prepared by adapting and translating chapters from FBNC, F-IMNCI and NSSK manuals and distributed to participants during training. The manual was revised on the basis of feedback from facilitators and participants. It is being further revised as per inputs from the second batch.
iv. Monitoring during 4 days of theory sessions and skills stations along with regular visits during clinical observership to help ensure quality of training.

Status of trained staff in intervention CHCs, after three batches of NBSU training

CHC	**Pediatrician**	**NBSU trained Medical officers (MOs)**	**Untrained doctors**	**NBSU trained nurses**	**Total posted in the CHC**
Choti Sadri	1, commutes ~60 kms	1	2	4	8
Devgarh	1, commutes ~80 kms	2	2	9	16
Abu Road	Not available	1	1	5	8
Kapasan	1, locally resident	0	0	8	12
Gangapur	1, locally resident	0	3	3	15
Partapur	1, locally resident (as of July, 11)	2	6	4	23
Chhota Dungra	Not available	1	1	3	8
Ganoda	Not available	0	1	2	10
Total	5/8	7	16	38	100

With improvement in the trained staff situation after completion of 3 batches June to December, 2011, NBSUs could be activated in Abu Road, Choti Sadri and Devgarh. Meanwhile, CHC Kapasan finally shifted to its new building on 11 August, 2011 (on direction from the state government) and the NBSU was activated there. Thus NBSU training enabled the launch of NBSUs in 5 CHCs.

The table below summarizes the existing status of space availability, equipment and supplies, human resources for newborn care, training of staff and status of helpline.

Status of CHC Newborn Stabilization Units (NBSU) (as observed till March, 2012)

CHC		Space for NBSU	Equipment and Supplies	Human Resources	Training Status	Status of NBSU
Facilitation by Navjeevan project		• Facility Assessment conducted in Oct-Nov, 2010 • Ongoing liaison with district and block NRHM officials and CHC staff to identify vacant rooms to establish NBSUs, install equipment and procure supplies by utilizing sanctioned budget		Ongoing communication for deputation of doctors and nurses as sanctioned (eg. Ganoda)	• Coordination with Department of Medical, Health and Family Welfare, Jaipur, UNICEF and M.B.Hospital, Udaipur for organizing NBSU training • Liaison with CMHOs to ensure full attendance in NBSU training • Hindi translation and distribution of training manual for participants • Attended first two batches (June and July, 2011) , provided inputs from CHCs on status of newborn care • Monitoring of sick newborn care at NBSUs, provided by trained staff	
1.	Gangapur (Bhilwara)	Available	Equipment and supplies available Repairs completed	Paediatrician locally resident 3 other doctors 15 nurses	3 nurses received NBSU training	Functional
2.	Partapur (Banswara)	Available	Equipment and supplies available Repairs completed	Paediatrician locally resident 7 other doctors 23 nurses	2 MOs and 4 nurses received NBSU training	Functional
3.	Chhota Dungra (Banswara)	Available	Equipment and supplies available Repairs completed	No Paediatrician, 2 other doctors 8 nurses	1 nurse oriented for 4 days on newborn care at District Hospital, Banswara (on ad hoc basis) 2 MOs and 3 nurses received NBSU training at M.B Hospital , Udaipur	Functional

	CHC	Space for NBSU	Equipment and Supplies	Human Resources	Training Status	Status of NBSU
4.	Ganoda (Banswara)	Available	Equipment incomplete No budget for minor repairs and supplies	No paediatrician 1 other doctor 10 nurses	2 nurses received NBSU training	Non Functional
5.	Devgarh (Rajsamand)	Availab	Equipment and supplies available Repairs completed	Paediatrician commutes 80 kms 4 other doctors 16 Nurses	2 MOs and 9 nurses received NBSU training	Functional
6.	Chhoti Sadri (Pratapgarh)	Available	Equipment and supplies available Repairs completed	Paediatrician commutes 60 kms 3 other doctors 8 Nurses	1 MO and 4 nurses received NBSU training	Functional
7.	Abu Road (Sirohi)	Available	Equipment and supplies available Repairs completed	No Paediatrician 2 other doctors 8 Nurses	1 MO and 5 nurses received NBSU training	Functional
8.	Kapasan (Chittorgarh)	Available	Equipment installed and supplies available	Paediatrician locally resident 12 Nurses	8 nurses received NBSU training	Functional

- **Monitoring of Intervention CHCs**

  The intervention is being monitored on a monthly basis by project staff through direct observation of newborn care services to review the following and provide feedback to CHC staff for improving services at CHC:

  - Labour Monitoring and Perinatal care
  - Status of newborn care in labour room, postnatal ward and Newborn Stabilization unit.
  - Further to completion of the training, follow up visits were made (July and August, 2011) to monitor performance of trained staff and CHC in-charges were asked to arrange nurse duties in a manner that at least one trained staff is available in all three shifts round the clock.

Improvements in Newborn Care after NBSU training

The following table depicts a comparison of treatments for sick newborn which were being carried out previously and the changes that followed after training:

Treatments before NBSU training	Treatments after NBSU training
Immediate newborn care Asphyxia management including suction and ambu bag IM Inj.Ceftriaxone administered for sepsis or LBW	Treatment started for asphyxia management, Oxygen administration in respiratory distress, Injecting antibiotics for sepsis, care for low birth weights, and premature newborns Jaundice, IV fluid management, Hypoglycaemia,

NAVJEEVAN HELPLINE - 9001 153 153

The project has established a 24*7 telephone helpline service (led by a helpline worker in each block) which receives calls from families of newborns that have been identified for danger signs in the community. ASHAs working in the involved clusters have been imparted a two days IMNCI refresher training so that they can identify the danger signs and call on time, following which a helpline vehicle reaches the newborn's place and transports to CHC for timely treatment. The ASHAs are being incentivized with Rs.50 and 200 for referrals leading to sick newborn's observation and admission respectively.

The service consists of a ***helpline number 9001 153 153*** which is being widely publicized through pamphlets, wall paintings and community mobilization in the involved clusters.

The performance of functional helplines has been detailed below:

			Jan.11	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan,12	Feb	Mar	**Total**
No.of helpline calls matured			0	1	1	0	6	1	7	12	21	31	17	32	50	39	40	**258**
Helpline call by (N=258)	Family		0	0	1	0	2	0	2	2	11	16	5	18	17	15	14	**103**
	Asha		0	1	0	0	4	1	5	8	8	13	11	14	30	20	26	**141**
	ANM/GNM		0	0	0	0	0	0	0	2	2	2	1	0	3	4	0	**14**
Action taken at CHC (N=258)	Admitted	Dicharge	0	0	1	0	3	1	2	1	7	9	5	3	8	5	4	**49**
		Died	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	**2**
		Referred	0	0	0	0	0	0	1	3	0	1	0	3	0	0	2	**10**
	Not admitted	OPD treatment	0	1	0	0	1	0	4	7	12	19	10	26	40	32	32	**184**
		Died	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**
		Referred	0	0	0	0	2	0	0	1	1	2	2	0	1	1	2	**12**
Mode of Return Journey from CHC to home (N=258)	108/Jssk		0	0	0	0	1	0	0	0	10	18	8	18	31	26	22	**134**
	Self		0	1	1	0	5	1	7	12	11	13	9	14	19	13	18	**124**
Out come of referred New borns (N=22)	Alive		0	0	0	0	1	0	1	4	0	3	2	2	0	1	3	**17**
	Died		0	0	0	0	1	0	0	0	1	0	0	1	1	0	1	**5**
Outcomes of new borns that used helpline (N=258)	Alive		0	1	1	0	5	1	7	12	19	31	17	30	48	36	39	**247**
	Died		0	0	0	0	1	0	0	0	2	0	0	2	2	3	1	**11**

- **Helpline workers and vehicles**: 8 helpline workers hailing from the local area, were appointed in Oct-Nov 2010 based on the following criteria:
  - Local resident
  - Minimum higher secondary school certificate
  - Fluent in local language
  - Familiar with villages involved in project area and acquainted with CHC health facilities
  - Minimum experience of 2 years in community health activities
  - Should have a driving license for two wheeler vehicle.

  Similarly, helpline vehicles (local taxis) for transport of sick newborns from periphery to CHC in all 8 blocks were recruited and charges per visit were finalized.

- **Helpline number 9001 153 153**
  A helpline number is available round the clock for receiving calls from families of sick newborns and ASHAs which are received by Helpline manager and supervisor in Udaipur who in turn notify concerned helpline workers and vehicle driver to initiate action for providing timely transport to the sick newborn upto the CHC.

  Eight closed user group mobile phones have been provided to all helpline workers.

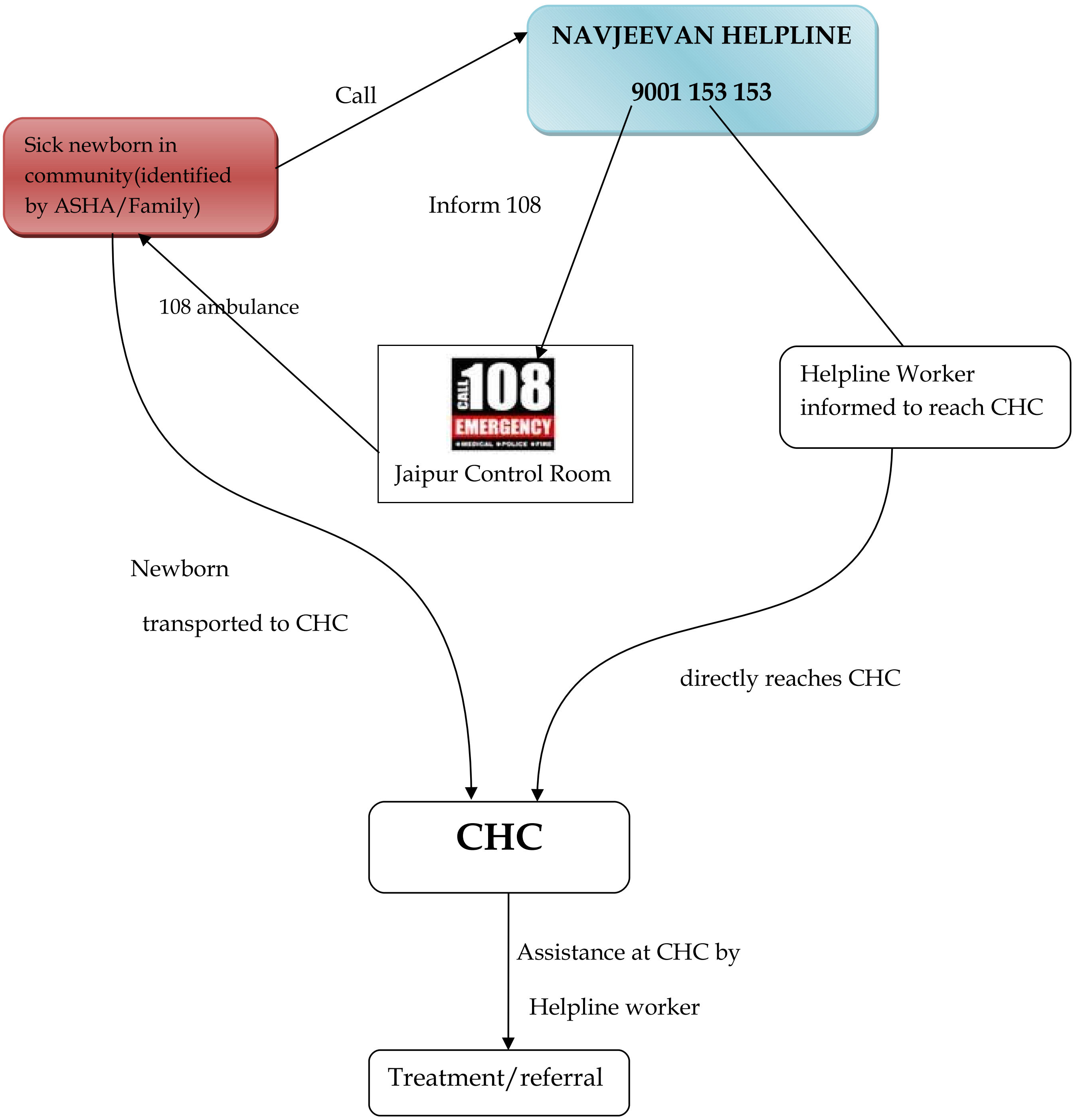
- **Training of helpline workers**:
  Five days training was completed in Jan – Feb, 2011 for helpline workers which included sessions on:
  a) Community mobilization (Participatory Rural Appraisal, Social and resource mapping)
  b) Functioning of NRHM
  c) Neonatal care
  d) Care during transport
  e) CHC structure and health facilities available
  f) Functioning of Panchayati Raj
  g) Referral mechanism for neonates
  h) Field visits and mock helpline referrals
  i) Two refresher training courses have been conducted in July and September, 2011 for helpline workers.

- **Community Mobilization and publicity of helplines***:* Regular visits to all villages are being made by helpline workers in order to publicize helpline and create awareness about health care seeking for sick newborns. This includes conducting meetings with ASHAs, anganwadi workers, local administration, village representatives, self help groups and families of newborns and sensitizing people to refer sick newborns by utilizing helpline service.

➤ **JSSK referral transport and collaboration with Navjeevan Helpline:**

After the launch of JSSK in September, 2011, 108 and CHC ambulances are being utilized for providing referral transport to mothers and newborns. Efforts are being made at the state level through Department of Medical, Health and Family Welfare services in order to collaborate Navjeevan helpline with 108 ambulance for providing referral transport to sick newborns in the intervention CHC clusters.

Option for collaboration of JSSK and Navjeevan Helpline



IMNCI Refresher training for ASHAs:

A refresher training course on IMNCI (3 days for intervention clusters) was carried out for ASHAs at block CHCs in Oct-Nov, 2010. The training was organized in consultation with Chief Medical and Health Officer (CMHO) and NRHM (National Rural health Mission) officials. During the trainings, Block CMHOs, CHC incharges, Block Programme Managers for NRHM and block ASHA facilitators participated.

Out of 441 ASHAs, 350 were being trained during this period. The following table summarizes status of ASHAs in involved clusters along with IMNCI training details (till March, 2012):

Status of ASHA IMNCI training in Intervention Clusters

S.No	**Intervention CHC**	**Number of Villages**	**Total Anganwadi Centers**	**ASHAs appointed**	**ASHAs who recd initial IMNCI training**	**ASHAs who recd IMNCI refresher**
1	Devgarh	61 (with wards)	71	55	0	46
2	Chota Dungra	79	71	71	71	52
3	Gangapur	43	58	53	53	48
4	Kapasan	49	52	46	46	46
5	Ganoda	42	66	66	0	53
6	Partapur	58	68	65	0	42
7	Abu Road	35 (with wards)	41	38	38	28
8	Choti Sadri	57	55	47	30	35
	Total	425	482	441	238	350

EVALUATION

The project evaluation team consists of 8 Research Assistants collecting data from 16 CHCs on a daily basis on status of newborn care services provided. They are being supervised by a Senior research Associate through monthly visits to all CHCs.

It involves standardization and improvement of MIS for capturing maternal and newborn morbidity and mortality indicators from CHCs in order to obtain project outcomes and status of newborn care services at CHCs.

The number of sick newborn admissions in NBSUs has increased after the establishment of NBSUs and clinical training of doctors and nurses. The following tables depicts the performance of intervention CHCs from Jan, 11 to March, 12 (as collected from CHC records) regarding admission status of sick newborns in NBSU (outborns and inborns) and the outcomes of their treatment at CHCs.

Status of Sick newborn (Inborn) Admissions (Jan11 to March 2012)									
CHC	Total Births	Still birth	Live birth	% Low birth weight	%Inborn admitted	Inborn admitted (numbers)	Referral Higher facility	Died at CHC	Healthy Discharge
Abu road	2622	79	2543	25.5%	2.0%	52	21	7	24
Deogarh	1288	44	1244	13.5%	5.8%	72	9	1	62
Gangapur	2092	41	2051	11.9%	10.0%	205	46	5	154
Kapasan	1871	41	1830	12.6%	3.6%	66	25	2	39
Choti sadri	1519	33	1486	16.7%	2.5%	37	10	0	27
Chota dunga	2154	87	2067	18.6%	3.4%	71	5	13	53
Partapur	1978	45	1933	33.8%	7.9%	126	30	7	89
Ganoda	1614	32	1580	23.6%	4.4%	69	17	12	40
Total	15138	402	14734			698	163	47	488
%		2.7%			4.7%		23.4%	6.7%	69.9%

Outborn admissions in NBSUs (Jan11 to March 2012)				
CHC	Outborn admitted (numbers)	Referral Higher facility	Died at CHC	Healthy Discharge
Abu road	7	4	0	3
Deogarh	19	6	0	
Gangapur	45	14	0	31
Kapasan	4	2	0	2
Choti sadri	17	3	0	14
Chota dunga	7	1	1	5
Partapur	27	2	3	21
Ganoda	4	3	0	1
Total	130	35	4	77

Total sick newborn admissions in NBSUs (Jan11 to March 2012)				
	Total admitted	Referral Higher facility	Died at CHC	Healthy Discharge
Abu road	59	25	7	27
Deogarh	91	15	1	75
Gangapur	250	60	5	185
Kapasan	70	27	2	41
Choti sadri	54	13	0	41
Chota dunga	78	6	14	58
Partapur	153	32	10	111
Ganoda	73	20	12	41
Total	828	198	51	579