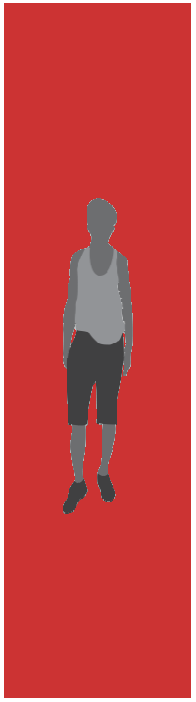

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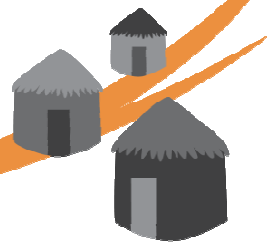

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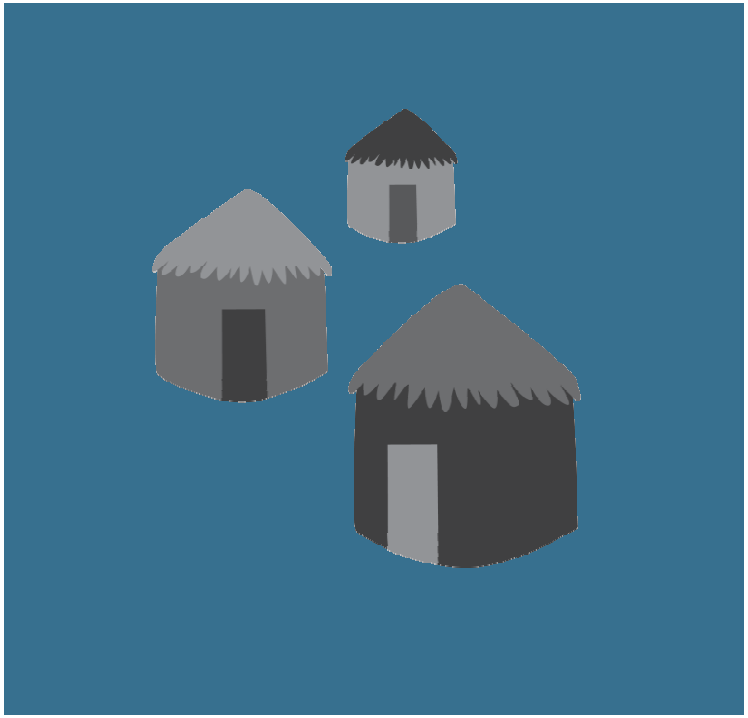

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Family Centred Care (FCC): A Social Collaboration to Improve Neonatal Health

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Prof & Head

Department of Neonatology

Dr. RML Hospital and PGIMER, New Delhi

Family Centered Care (FCC)

- FCC: At a Glance

Family Centered Newborn Care in India

Concept Genesis (2007)

Overcoming HR constraint in NICU : Engaging Parent in Care

Evidence Generation (RCT 2010-2013)

Capacity building of accompanying parent attendant of a sick neonate for delivery of care & effect on neonatal outcomes

Outcomes

1. **Feasible & Safe**
2. **↑ Breast feeding**
3. **↓Hospital stay**
4. **No ↑ in Infection**

EvidenceLive 13

March 25th & 26th 2013

The Examination schools

University of Oxford

BMJ Group | CEBM | BMJ Evidence Centre | University of Oxford

Translating and adapting principles of family centred care to decrease nosocomial infection in NICU - A randomized controlled trial

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AIM

To generate evidence for improved neonatal outcome in manpower resource constrained NICU setting of a developing country through capacity building & empowerment of parent-attendants accompanying their sick neonate.

Hypothesis: Translating and adapting principles of family centred care to deliver partial care would decrease nosocomial infection rate (NIR) in a tertiary level referral nursery by 50%

Methods and Results

Setting : Manpower resource constrained setting of a tertiary care referral neonatal unit of North India.

Eligible (n=319) neonates admitted to our NICU who had at least 2 family attendants willing to

Consent for Participation. Ethical clearance

Exclusion (n=24): Refusal (10), Twins/Triplet (9), Unstable (5)

Enrolled Population (n=295)

Randomized computer generated random numbers. Sequentially numbered, opaque, sealed envelopes. baby assigned to either group.

Control Group (n=147) routine care by nurses & doctors

Study group (n=148) received the intervention* in addition.

Primary Outcome: Diff. in C/S +ve NIR (culture positive episodes /1000 baby days) between groups.

Secondary outcome :

- Culture negative NIR
- Mortality
- Exclusive breast feeding rates at discharge
- Duration of hospitalization

Sample size : For 50% reduction in NIR (from 20 to 10), with 80% power at 5% alpha error, 2157 patient-days were required in each group.

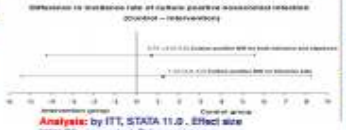
***Intervention Tool :** An indigenously developed operational & culturally sensitive module meant to deliver a package of limited supervised care to a sick neonate by their accompanying attendant.

Important Observations

Parent attendant Characteristics

- **Relation to baby:** Majority (37%) were fathers, 20% were grandparents, 22% initially & 30% later were mothers.
- **Gender :** More than half (61%) were males.
- **Literacy:** 25% were illiterate. 34% were primary/middle school level and only 2% were graduates.
- **Age:** 40% in 25-35 yrs, 41% were > 50 yrs old, rest, 19% being 36-50 yrs.
- **Average time spent bedside by attendant:** 14.7 (± 1.1) hrs

Mean weight & gest. in control & intervention gps: 2303 ± 67 & 2376 ± 65 g ; 36.8 ± 3.2 & 36.80 ± 3.1 wks respectively.



Analysis: by ITT, STATA 11.0 . Effect size (95%CI) computed. Primary outcome summarized by C/S +ve NIR.

Adverse events reported such as ET tubes or OG tube misplacement, IV site swelling events and mortality were similar in both groups.

Table 1. Baseline Characteristics n(%)

		Control gp n=147	Study gp n=148
Gestation	≤28 week	9 (6.0)	7 (4.7)
	29-34 week	25 (16.9)	21 (14.1)
	35-42 week	113 (76.8)	120 (81.0)
	SGA	33 (11.2)	27 (9.1)
Sex	Male n (%)	102 (69.4)	101 (68.2)
Delivery place	Home	95 (64.6)	96 (64.8)
Delivery mode	Vaginal	118 (80.3)	119 (80.4)
Birth order		31 (10.5)	27 (9.1)
Consanguinity	Single	22	21
Socioeconomic status	Multiple	10	8
Morbidity at enrolment	Severe hypothec.	1	6
	Fever	5	10
	Saturation <90%	20	16
	CRT>3Secs	14	8
	Hypoglycemia	10	4
	PICC line n, (%)	23, (15%)	27, (18%)
Exposure to invasive procedures	Umbil. cath.n,(%)	33, (22%)	34, (23%)
	Surgi.intervention	1	2
	Ventilated n, (%)	37, (24%)	31, (20%)

Table 2. summary of outcomes

NI episodes	Control n=147	Study n=148	P value
	16	17	>0.5
	22	21	>0.5
	14	16	>0.5
Primary : C/S +ve NIR	**Control n=147**	**Study n=148**	**Effect size , (95% CI)**
	10.48	9.09	1.13(-5.6 , 8.2)
	7.17	6.43	0.74(-4.21,5.69)
Secondary outcome s			
C/S -ve NIR	14.31	14.93	0.62(-6.1,7.3)
	9.86	10.56	0.70(-6.6,5.2)
	11 (11)	11.8 (10.79)	>0.05
	693	936	P value 0.0024 ,
	8 (5+1) (3)	4 (3+0) (1)	
Mortality n (%)	13 (8.8)	10(6.8)	P value 0.5
Bv Feed Rates at Disch.	80.4 %	88.7 %	P value 0.007*
Total IUR (C/S+ & C/S-)	control	intervention	P value
	36.7	26.83	0.7
	nil	nil	-
	17.0	10.8	0.06

Training Process : Module Preparation Implementation & Q-A

Module: An illustrative audio-visual & demonstrative structured training tool in local language.

Objective of module: To capacity build, train, educate, aware & empower parent, attending their sick baby in a NICU in following domains, while ensuring compliance with hand washing & personal hygiene practices, They were also trained to report specific adverse events such as ET and OG tube misplacements & IV site swellings.

Module Preparation: With technical input from experts & experiential learning for effective communication & comprehensibility, feasibility, a simple training tool was prepared over a 3 month period.

Content:

Part 1: Entry into nursery.
Part 2: Familiarization with nursery.
Part 3: Picking & reporting danger signs.
Part 4: Feeding & preparation for discharge.

Pre implementation pilot testing.

After corrections were incorporated, the tool was improvised and finalised for implementation.

Implementation

Blinding was not possible due to nature of intervention. Training was delivered by residents who themselves were well familiar with the module.

Done in groups of attendants who were initiated for training between 9 am to 4 pm when there were sufficient staff. Module was displayed regularly through screening.

Reinforcement

Training schedule

-It was ensured that attendants were shown video modules only in sequential manner within days after enrollment.

-Reinforcement and revision of the module was done each time they viewed next part.

Lateral / Horizontal Learning

Quality assurance:

-Tool was a pre-designed well-structured culturally sensitive comprehensive incorporating verbal, pictorial and video information, thus eliminating subjectivity or variability in imparting training.

-Pre implementation validation of training of parent attendant: On-going monitoring random compliance checks

-Adherence to protocol

-Enrolment withheld when saturation was >50%

-Reporting of adverse events were tallied with nurses' reporting

-There was a provision for planned remedies for anticipated problems.

DISCUSSION

Sub optimal staff-baby ratio leads to increase in Nosocomial infection

Empowering parent attendant in NICU to take care of their sick baby

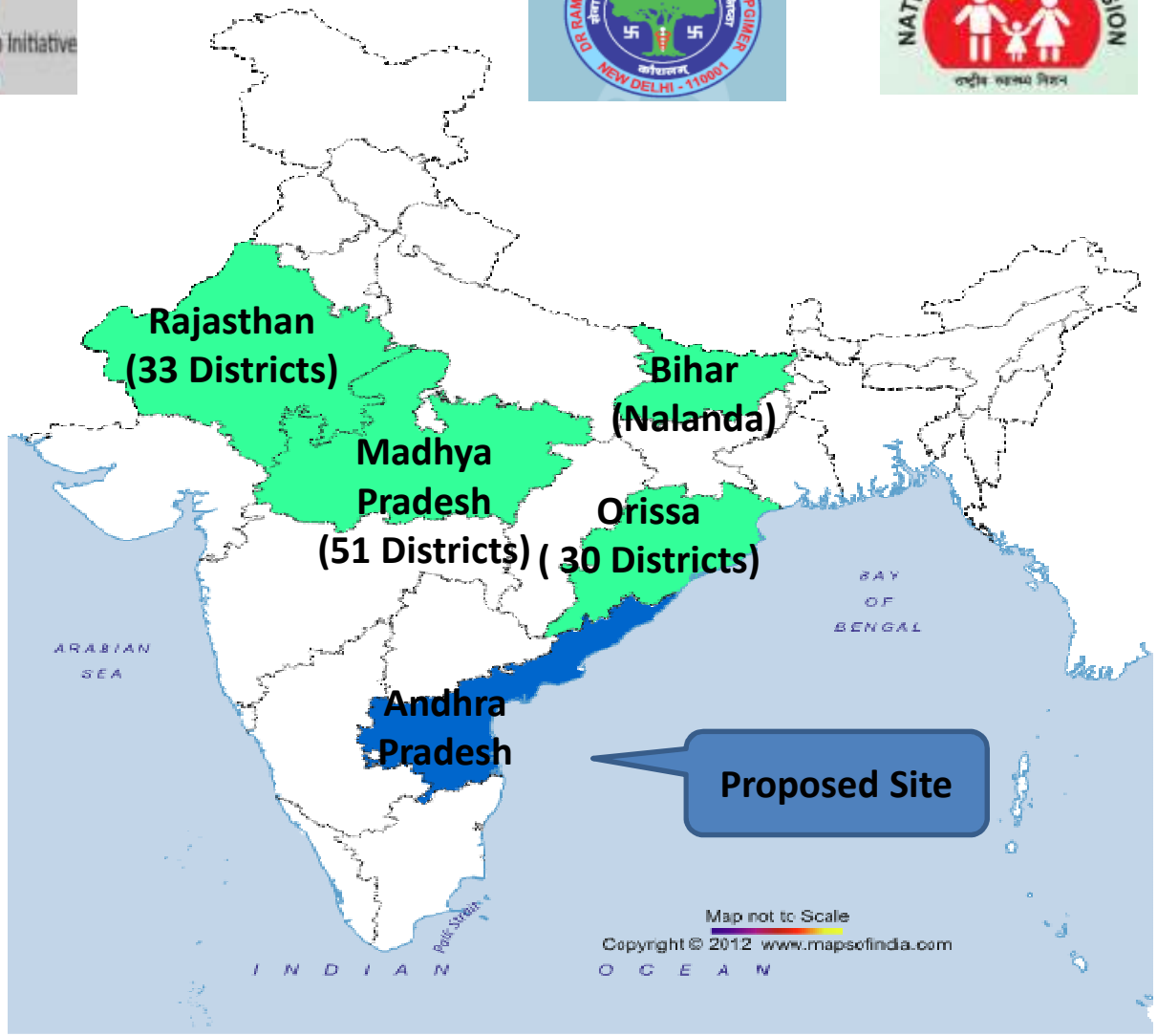
Shown in our study	Speculation	Scope for research
✓ ↑ breast feeding rate ✓ ↓ hospital stay ✓ ↓ pre D/S mortality	? Better bonding ? Better post D/S care at home ? Lesser morbidity ? Less burden on nursing staff	?? Perceptions of stake-holders ?? Stress, comfort & parenting confidence of attendants ?? Long term growth & developmental outcomes

- There have been concerns regarding risk of NI with parent-attendant involvement in neonatal care.
- This is the first RCT to study impact of parent empowerment on NIR in a tertiary level NICU.
- Few studies have evaluated impact of family centered care (FCC) on other outcomes.
- Intervention group in our study showed shorter duration of stay , higher exclusive breast feeding rates before discharge and no difference in mortality as compared to control group.
- Similar results have been shown with trials such as Creating Opportunities for Parent Empowerment (COPE), Stockholm Neonatal Family Centred Care Study and a study conducted at Aga Khan University Medical Centre wherein mothers were either allowed to stay in or involved in their sick babies' care.
- The main limitation of present study is inadequate sample size and thus insufficient power to show the real difference in NIR between the two groups.
- Strengths of the study include pertinent and contextual research question with strong implications for overcoming manpower constraints in delivery of neonatal care for better outcomes. Broad based inclusion & limited exclusion offer good generalizability. A robust study design, adherence to study protocol & inbuilt Q-A measures, with good internal validity are other strengths of this study.

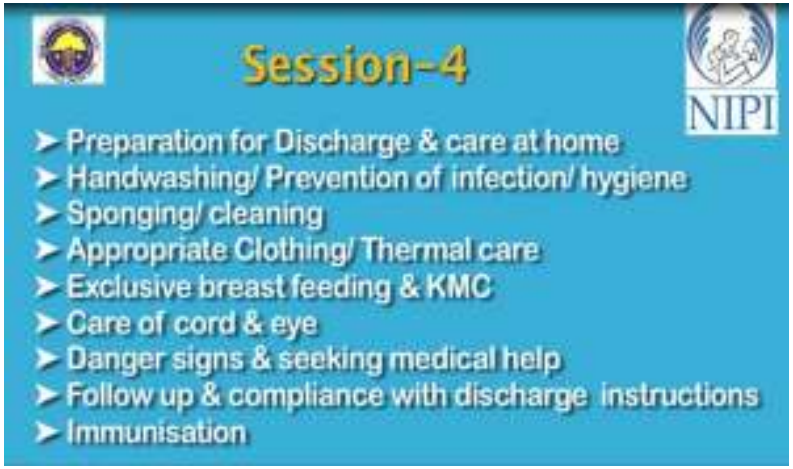
CONCLUSION

- Translating and adapting principles of family centred care to an operational and culturally sensitive module which empowers families to take care of their sick baby may result in decreasing nosocomial infection rate (NIR) in a tertiary level referral nursery.
- This intervention decreases length of stay of babies and improves exclusive breast feeding rates prior to discharge.
- This intervention is feasible & may have implications for overcoming manpower constraints in delivery of neonatal care.

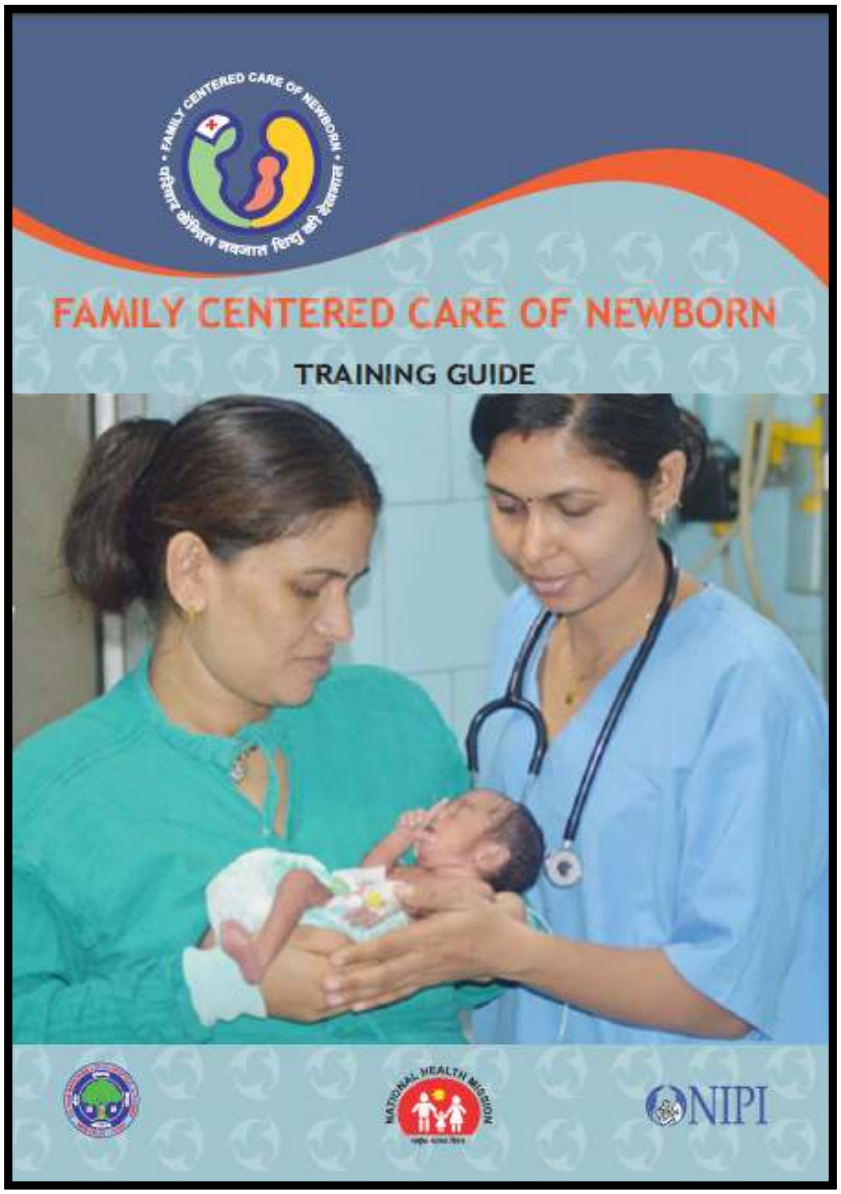
Translation in Public Health 2014- till date



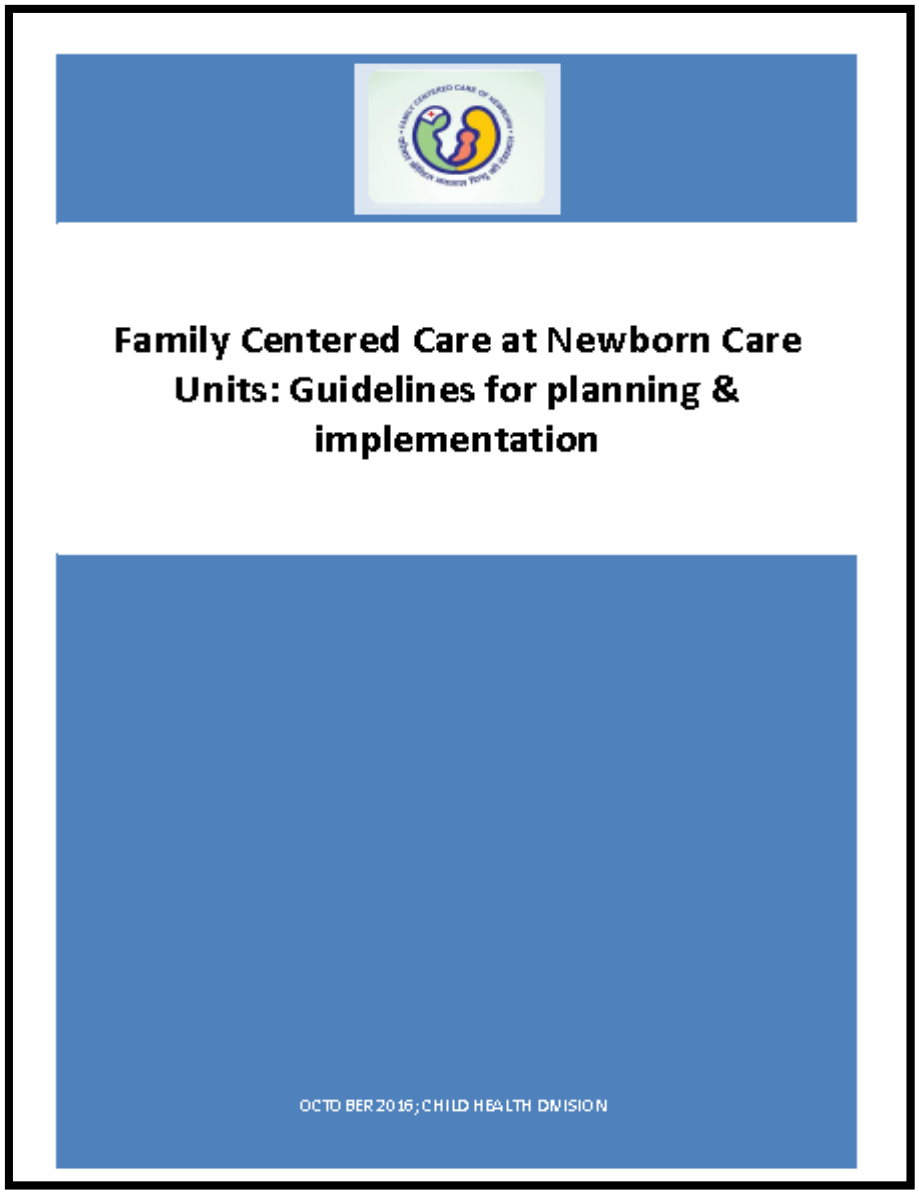
1. Audio Visual (AV) Modules



2. Training Guide



3. Operational Guidelines



Skill building process

- Induction at Admission (Sensitisation to FCC)
- Primary Care Provider Identified
- Daily Trainings Scheduled
- Skills imparted through demonstrations and practice

Skill building process contd…….

- Supervised Learning
- Peer To Peer Learning
- Independent Doing
- Discharge Counseling

Attributes & Indicators of Implementation : Feasibility

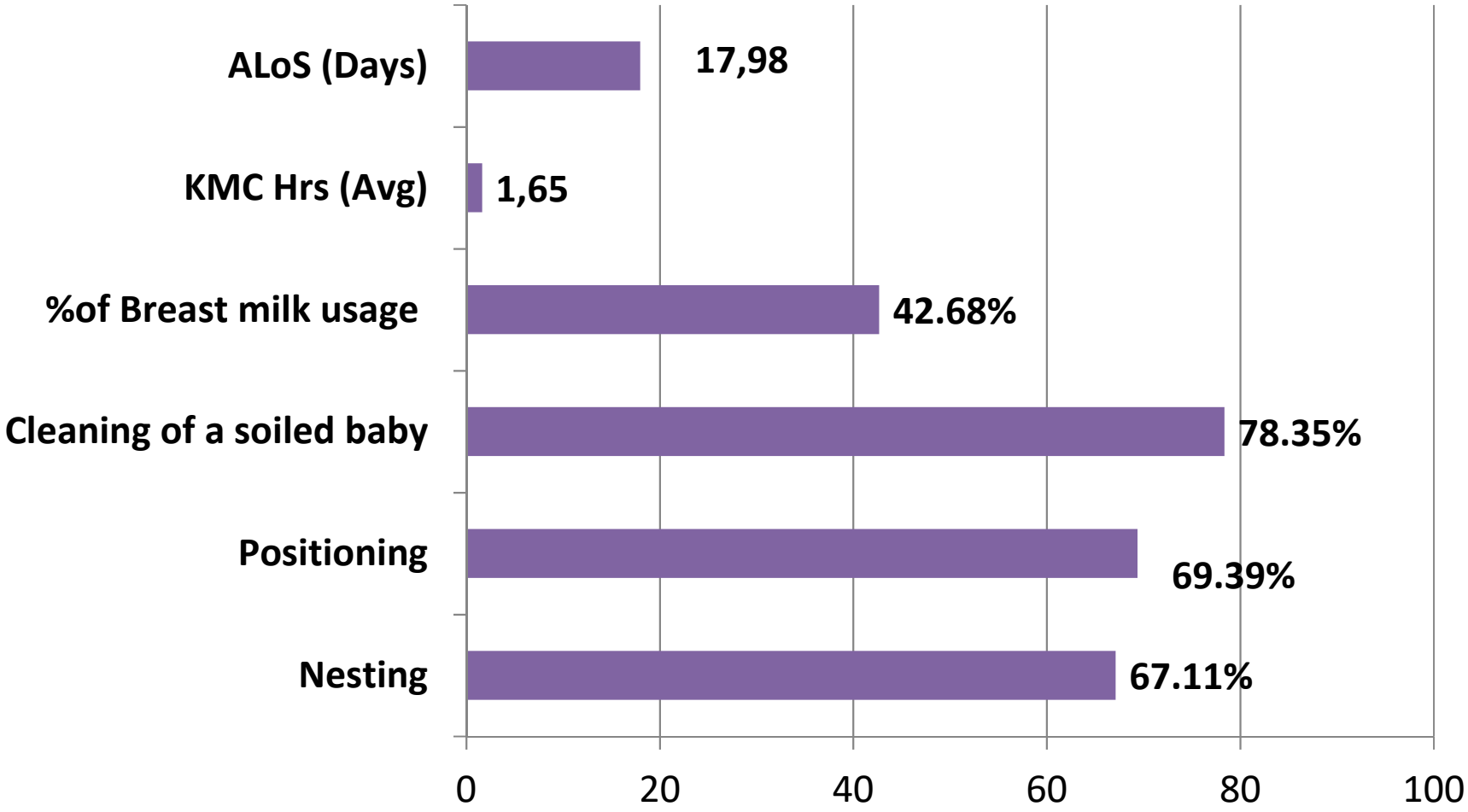
Parent- Attendant profile

- 3-20 % >50 years
- 23-61 % males (father, grandfather, uncles)
- 8 -20% grandparents
- 65-70% mothers
- 22 -25 % illiterate
- 110 % received the training
- *Average time spent* bedside by attendant was14.7 (± 1.1) hours/day

Attributes & Indicators of Implementation : Feasibility contd…

S. No.	Care Provider	Indicator	Value	
3	For Nurse-Doctor	% of Nurse-Doctor who ever received sensitization to FCC	June' 16	Dec'16
			76.9% (39)	50% (42)
4		% of sensitized Nurse- Doctor who ever participated in conducting training sessions	16.6% (30)	42.8% (21)
5		% of daily training session held	59.5% (84)	77.4% (93)

Involvement of Parent- Attendants in Processes of Care (June'16- December 16)



Attributes & Indicators of Implementation : Acceptability

A Qualitative Study* using In–depth interviews

Summary findings :

1. Positive attitudes toward FCC
2. Knowledge of essential newborn care giving practices
   among both parents and service providers.

3. Continuation of delivering essential newborn care by family beyond hospitalization.

***An Independent Research Team of University Research Co India Pvt Ltd**

FCC

ISN’T IT APPEALING?...

- Low cost
- Seemingly simple
- May supplement HR constraint
- Seems to have benefits for all stakeholders involved

IS IT THAT SIMPLE ?

IS IT FEASIBLE?

Challenges in Implementation

Challenges w.r.t. heath care providers

- To accept parent-attendant as a co-partner in care delivery!
- Feeling of diminished authority!
- Uneasiness because of being constantly watched!
- Tendency for task shifting to mothers beyond the prescribed scope of activities!!
- They are expected to deliver a standard of care that an empowered parent now is aware of and expects from him !!!

- Mother is already sold to the concept
- Selling the concept to doc/ nurse !!
- Much easier to define what mother is expected to do and she will do.
- Much harder is to expect the doctor not to task shift

Getting on board health care provider is the most important

- A module for health care provider
- What he should and what he shouldn’t do;
- Need of initial sensitisation and training of entire heath care team (Nurses, doctors, other staff).
- Monitoring must include parameters to assess nurses performance of tasks.
- Adverse events and Hospital acquired infections must be watched.

To Conclude:

- **Translating and adapting principles of Family Centred Care to capacity build the families for essential care giving skills through the captive period of hospitalisation of their sick neonate is feasible and acceptable.**

- **Health care providers have a pivotal role to play.**

- **The enhanced competencies and empowerment of mothers to provide continuum of care at home entrusts them with Social accountability for health of their infant**

- **Family Centered Care is a promising model of a Social Collaboration that is likely to have generational impact on neonatal health.**

Family Centered Care for Sick Newborn: video links

- Family Centred Care (FCC): At A Glance- https://youtu.be/ui7YcfTMd74
- FCC : Parents' experiences- https://youtu.be/BVaikd1nFaQ
- Scaling up of FCC across the communities- https://youtu.be/28OrApCzE0U
- Resource material:
- Session 1- Nursery Entry Protocol- https://youtu.be/S2_nvcDSkIY
- Session 2- Developmental supportive care- https://youtu.be/ALoGXC6-RQk
- Session 3- Kangaroo mother care- https://youtu.be/kKjNbYJ-R9w
- Session 4- Care after discharge at home - https://youtu.be/Hbd14bq1iy8
-

Requirements for FCC : A Checklist

I. Facility Checklist:

A. Facility layout checklist (to be filled after observation)

S.No.	Observational Points
1	Mothers Sleeping/ Retiring Area.
2	Provision of bathing/toilet facilities.
3	Provisions for food/diet for mothers
4	KMC room 1. With KMC Chairs 2. IEC material displayed. 3. Front Open Gowns.
5	EBM/Breast feeding room with privacy 1. IEC material displayed. 2. Refrigerator for storing expressed milk. 3. Provision of chairs. 4. Boilers and utensils. 5. A sink nearby for hand-wash / washing utensils. 6. Availability of Breast Pumps(optional)
6	At entry of Newborn Unit : Logo and Posters of FCC displayed
7	At Nursery Entry Area: I. Lockers for mothers where they can keep their valuables or accessories before entry. II. A nail cutter III. Chappal changing area with adequate supplies of chappals IV. Handwash / scrub area V. Drum with sterile wipes and a cheatles forcep or a hand dryer VI. Black dustbin for disposing wipes VII. Gowns in a drum for mothers. VIII. Hand wash area exhibited with the posters on handwashing (steps and importance), gowning etc.
8	FCC training session room (it can be adjoining the unit or with in the unit outside the SNCU area) 1. TV with USB port 2. Adequate number of chairs 3. A warmer / table for skill demonstration with • Mannikin • Sheets for making nesting • Consumables like Diaper, Cotton, paper, waste bag etc.
9	In SNCU: I. Bedside chairs for mothers. At exit point : there should be I. Hangers for gown II. Hooks nailed on the wall

Checklist contd….

C. To monitor Family Friendly practices

	Attitude		
1.	Practice of Counseling session at admission with the standard template		
2.	Practice of Counseling session at discharge		
3.	Practice of Daily appraisal sessions		

D. Orientation/Sensitization of the staff

(i) Training Sessions held for SNCU staffs-Y/N

(II) Human Resource

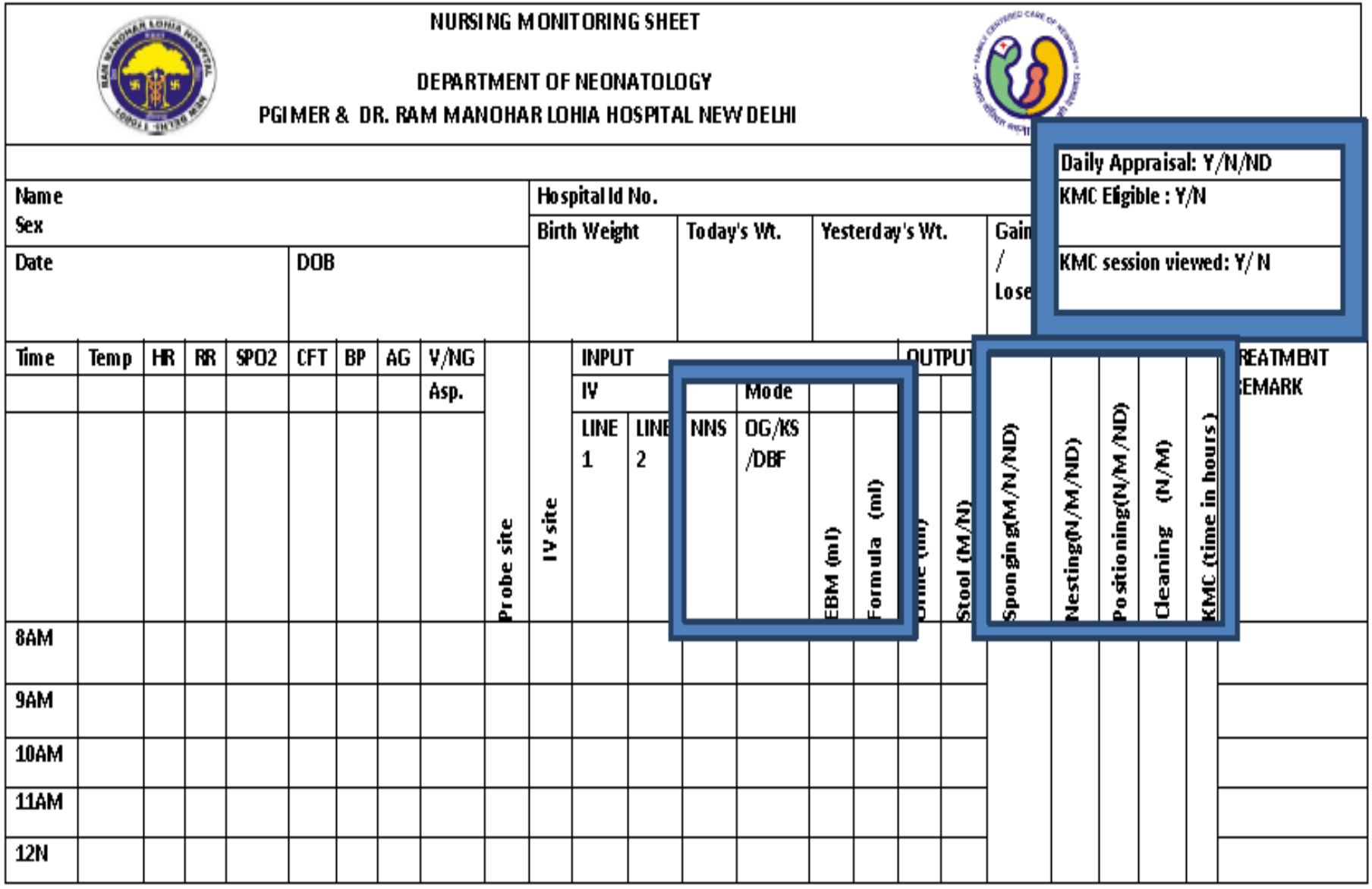
Staff category	Total number	Trained in FBNC (No.)	Trained in FCC (No.)
Doctors			
Staff Nurses			
ANM			
Any other staff (e.g.: Counselors; KMC Educators)			

FCC: Monitoring tool

Baby of		CR Number:	Gender
FCC Eligibility:		Date of birth	Birth weight
Date of admission	Time of admission	Admission Weight	Age at time of admission
Primary care provider	Phone no	Age	Educational status
1.			
2.			
Mother eligible(if Y/N)*	INDUCTION CONDUCTED ON	KMC eligible(if Y/N)**	HRC No-
Session 1(Date):		Session 2(Date):	Session 3(Date):

Date	Time	Nesting (Yes/No)	Positioning (Yes/No)	Cleaning Of Soiled Baby (Y/N)	Feeding 0=NPO 1=FORMULA 2=PARTIAL EBM 3=FULL EBM	Mode of feeding 0=TUBE FEED 1=KS FEED 2=DBF	Time Spent With Baby (Should Be Asked From Mother)	If Eligible No. Of Hours Of KMC Given (If Yes) If No -Reason

Nursing monitoring sheet



NURSING MONITORING SHEET

DEPARTMENT OF NEONATOLOGY

PGIMER & DR. RAM MANOHAR LOHIA HOSPITAL NEW DELHI

Name
Sex

Hospital Id No.

Date

DOB

Birth Weight

Today's Wt.

Yesterday's Wt.

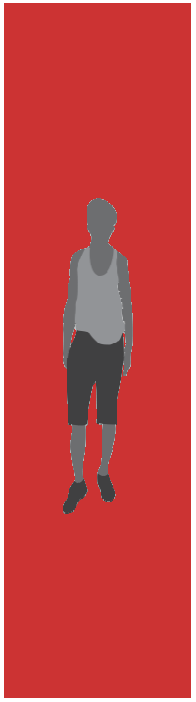
Gain / Lose

Daily Appraisal: Y/N/ND

KMC Eligible : Y/N

KMC session viewed: Y/ N

Time	Temp	HR	RR	SPO2	CFT	BP	AG	V/NG Asp.	Probe site	IV site	INPUT IV LINE 1	INPUT IV LINE 2	INPUT Mode NNS	INPUT Mode OG/KS /DBF	INPUT EBM (ml)	INPUT Formula (ml)	OUTPUT Urine (ml)	OUTPUT Stool (M/N)	Sponging(M/N/ND)	Nesting(N/M/ND)	Positioning(N/M/ND)	Cleaning (N/M)	KMC (time in hours)	TREATMENT REMARK
8AM																								
9AM																								
10AM																								
11AM																								
12N																								



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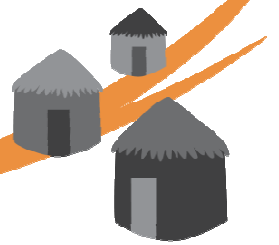

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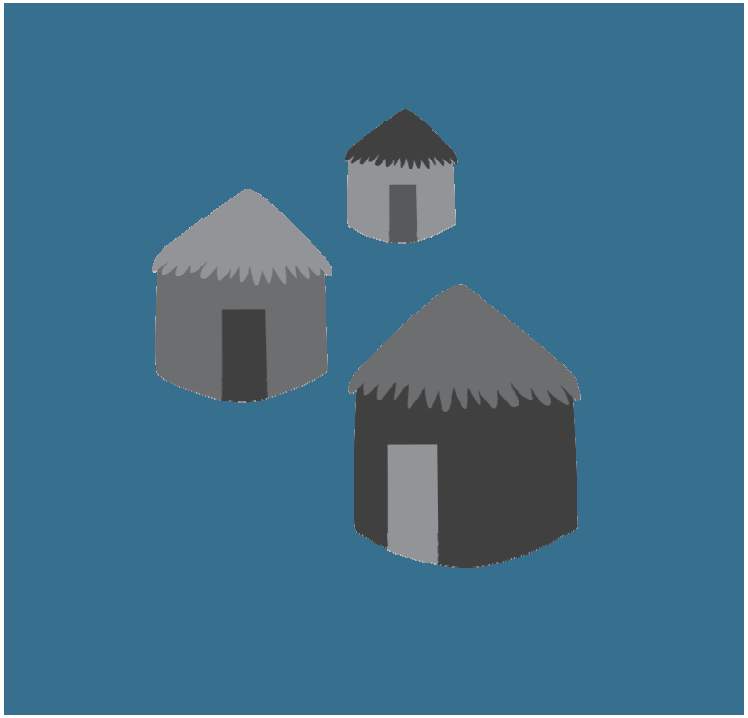

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