Internship Training at CARE India (CISSD), Bihar

By

Rahul Kanjilimadom

PGDHM

2012-2014

International Institute of Health Management Research

Internship Training

At

CARE India (CISSD), Bihar

Assessment of Readiness of New Born Care Corners in Labour Rooms of the Healthcare Facilities in District Madhubani, Bihar

By

Rahul Kanjilimadom

Under the guidance of

Dr. B. S. Singh

Post Graduate Diploma in Hospital and Health Management

Year 2012-2014

International Institute of Health Management Research

New Delhi

CARE INDIA
14, Patliputra Colony
Patna 800 013, Bihar
Tel +91-612-2274957, 2274389, 2270464
Fax +91-612-2274957
www.careindia.org

The certificate is awarded to **Mr. Rahul Kanjilimadom** in recognition of having successfully completed his Internship in the department of **Strengthening of Kala Azar elimination Project** and has successfully completed his Project on **Assessment of availability and functionality of New Born Care Corner at Primary health centers across District Madhubani, Bihar.**

Date: 01/05/2014

Organization: Care India Solutions for Sustainable Development

He comes across asa committed, sincere &diligent person who has a strong drive & zeal for learning.

We wish him all the best for future endeavors.

Jaimon Thomas
Program Manager
CARE India, Bihar

Certificate from Dissertation Advisory Committee

This is to certify that **Mr. Rahul Kanjilimadom,** a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. He is submitting this dissertation titled Assessment of Readiness of New Born Care Corners in Labour Rooms of the Healthcare Facilities in District Madhubani, Bihar at CARE India (CISSD), Bihar in partial fulfillment of the requirements for the award of the **Post-Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Dr. B S Singh
Associate Professor
IIHMR, Delhi

Jaimon Thomas
Program Manager
Care India

Certificate Of Approval

The following dissertation titled **Assessment of Readiness of New Born Care Corners in Labour Rooms of the Healthcare Facilities in District Madhubani, Bihar** at CARE India (CISSD), Bihar is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
① Dr S.B ARORA	07/05/2014
② Dr A.K.KHOKHAR	7.5.14.
③ Dr. Radhika S. Adholeya	Adholeya

TO WHOMSOEVER MAY CONCERN

This is to certify that Rahul Kanjilimadom, student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at CARE India (CISSD), Bihar from January 26, 2014 to May 1,2014.

The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements. I wish him all success in all his future endeavors.

08/5/2014

Dr. A.K. Agarwal
Dean, Academics and Student Affairs
IIHMR, New Delhi

Dr. B S Singh
IIHMR, New Delhi

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH, NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled Assessment of Readiness of New Born Care Corners in Labour Rooms of the Healthcare Facilities in District Madhubani, Bihar and submitted by

Rahul Kanjilimadom

Enrollment No. PG/12/069 under the supervision of Dr. B S Singh for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 26/01/2014 to 01/05/2014 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

FEEDBACK FORM

Name of the Student: **Rahul Kanjilimadom**

Dissertation Organisation: Care India Solutions for Sustainable Development

Area of Dissertation: Assessment of availability and functionality of New born care corners in PHCs of Madhubani district, Bihar

Attendance: 100%

Objectives achieved: Satisfied

Deliverables:

1) IRS monitoring in different blocks in the district
2) Community meetings conducted
3) Liasoning with the government stakeholders and other development partners
4) Microplan creation
5) HSC meetings
6) Training of field staff
7) Recruitment of field staff

Strengths: Communication and presentation skills, Punctual, hardworking, Innovative, Open for learning options

Suggestions for Improvement: Needs to improve his local language skills for better community mobilisation and ownership taking from village level.

Jaimon Thomas
Program Manager
Date: 02/05/2014
Place: Patna, Bihar

ACKNOWLEDGEMENT

We take this opportunity to express our profound gratitude and deep regards to our Mentor Mr. Jaimon Thomas for his exemplary guidance, monitoring and constant encouragement throughout the course of this Internship Training. The blessing, help and guidance given by them time to time shall carry us a long way in the journey of life on which we are about to embark. We would also thank our mentor at IIHMR Dr. B S Singh for giving us the opportunity to do Internship training at CARE India (CISSD). He was a constant support during our entire period of Internship training.

They inspired us greatly to work on the projects of this organization and their willingness to motivate us contributed tremendously to our report. We also would like to thank them for showing us the right way to go about and doing things which are very much required for our learning process.

This training report is just a small piece of our experience as a student who had immense chance to learn a great lot which is very much practical and the organization taught us a lot regarding the importance of innovation and empowerment in the field of public health. I would like to thank all those who had helped us a lot taking their time to guide us especially the Program Area team. What we had learned will be engraved into our heart for us to go a great distance in the journey about to come.

TABLE OF CONTENT

List of tables and Figures…..…… 1

List of Abbreviations…… 2

Introduction……..... 3

Review of Literature……..15

Rationale…….....18

Objectives……. 19

Methodology……..20

Findings…….21

Discussion…….27

Conclusion……28

Recommendation…….....28

Reference…….....29

Annexure……..…30

List of Tables and Figures

Table 1.1……..4

Table 1.2……..5

Table 1.3…….....6

Fig (a) 1.1…….....8

Fig 1……21

Fig 2……21

Fig 3……22

Fig 4……22

Fig 5……23

Fig 6……23

Fig 7……24

Fig 8……24

Fig 9……25

Fig 10……..25

Fig 11……..26

Fig 12……..26

LIST OF ABBREVIATONS

Sr.No	Abbreviation	
1	IMR	Infant Mortality rate
2	U5MR	Under 5 Mortality rate
3	NMR	Neonatal Mortality Rate
4	MDG	Millennium Development Goals
5	JSY	Janani Suraksha Yojna
6	FBNC	Facility Based Neonatal Care
7	SNCU	Special New born Care Unit
8	NBSU	New Born Stabilization Unit
9	NBCC	New Born Care Corner
10	HBNC	Home Based Neo Natal Care
11	ENCR	Essential New Born Care and Resuscitation
12	OT	Operation Theatre
13	PHC	Primary Healthcare centre
14	KMC	Kangaroo Mother care

1.0 INTRODUCTION

Bihar is one of India's largest and poorest states with over 100 million people. The state has one of the country's highest rates of maternal, neonatal and infant mortality. Underlying factors that contribute to these negative health outcomes primarily include extreme poverty, gender and social inequality among many others. Despite renewed interest of Government of Bihar and flow of funding from external donors as well as other institutions to improve the health infrastructure and outcomes, the state is far behind achieving the goals. Some of the problems hindering the progress are lack of staff at primary health centres, poor quality of frontline workers, problems in accessibility and availability of health services for the marginalized populations, lack of proper data, and lack of proper management at the facility level, poor training systems, and inadequate infrastructure at public health facilities and poor integration of interventions

The Infant Mortality is the major contributor in U5MR which is 57 for Bihar as per SRS 2012.The IMR is an important indicator of Child Health. As per SRS 2012, the IMR of Bihar is 43 per 1000 live births. Neo-natal mortality (NMR) for Bihar as per SRS 2012 is 28 and accounts for 66% of the IMR. The goal to reduce IMR will only be achieved if comprehensive facility based neo-natal care strategy is implemented in Bihar backed up by Home Care & Timely referral.[1]

TABLE 1 BIHAR MORTALITY INDICATORS

Indicator	Total	Rural	Urban
Under 5 mortality	57	58	39
Infant Mortality	43	44	34
Neonatal Mortality	28	29	12
Early Neonatal Mortality	23	25	8
Late neonatal mortality	4	4	4

Source: SRS Bulletin 2012 Table 1.1

1.1 BACKGROUND

Every year, four million newborn babies die in the first month of life—99% in low- and middle-income countries. India carries the single largest share (around 25-30%) of neonatal deaths in the world. Neonatal deaths constitute two-thirds of infant deaths in India; 45% of the deaths occur within the first two days of life. It has been estimated that about 70% of neonatal deaths could be prevented if proven interventions are implemented effectively with high coverage. It was further estimated that health Facility based interventions can reduce neonatal mortality by 23-50% in different settings. Facility-based new born care, thus, has a significant potential for improving the survival of newborns in India.

Three levels of neonatal care are envisaged. Newborn-care corners are established at every level to provide essential care at birth, including resuscitation.Level I care includes referral of sick new-borns from Primary Health Centres (PHCs) to higher centres and care at Neonatal Stabilization Units (NSUs) in the first referral units. Care in the NSUs includes stabilization of sick new-borns and care of low birth weight (LBW) babies not requiring intensive care. Level II care includes functioning of Special Care Newborn Units (SCNUs) at the district hospitallevel.[2]

Table 2 New Born Care Facilities At Different Levels

Health Facility	All Newborns at birth	Sick Newborns
Primary Health Centre/Sub Centre MCH level 1	New born Care corner in labour room	Prompt referral
Community Health Centre/Referral unit MCH level 2	New born Care corner in labour room and OT	Newborn stabilization unit
District Hospital MCH level 3	New born Care corner in labour room and OT	Special newborn care unit

Source: FBNC Operational guidelines Table 1.2

Newborn care corner provides an acceptable environment for all infants at birth. Services provided in the Newborn care corner include provision of warmth, early initiation of breastfeeding, weighing the neonate and quick baby-check.The configuration of the corner includes clear floor within the labour room, 20-30 sq feet in size, where the radiant warmer is kept, resuscitation kit should be placed in the radiant warmer, availability of oxygen source is desirable and the area should be away from draughts of air and should have appropriate power connection for plugging in the radiant warmer.[3]

One staff nurse or ANM is desirable in addition to the one conducting the delivery for providing appropriate care at birth. All staff posted at the labour rooms should be trained in providing essential care at birth and basic resuscitation. One doctor and one staff nurse should be designated to NBCC to ensure appropriate functioning of the corner. All doctors and nurses who are likely to attend deliveries must be trained in Navjaat Shishu Suraksha Karyakram (NSSK).If NBCC is established at the sub-centre and then the auxiliary nurse midwife (ANM) must also receive NSSK training.

A list of the Essential Equipments required for planning a New-born Care Corner is given below

A) Newborn care corner

Item No	Item Description	Essential	Desirable	Quantity
1	Open care system: radiant warmer, fixed height, with trolley, drawers, O_2 bottles	E		1
2	Resuscitator, hand-operated, neonate, 500ml	E		1
3	Weighing scale, spring	E		1
4	Pump suction, foot operated	E		1
5	Thermometer, clinical, digital, 32°-34°C	E		1
6	Light for examination, mobile, 220-12	E		1
7	Syringe hub cutter	E		1

source: FBNC operational guidelines Table 1.3

1.2 Organizational profile

CARE has been working in India for 60 years, focusing on ending poverty and social justice. They do this through well-planned and comprehensive programmes in health, education, livelihood and disaster preparedness and response. Their over goal is the empowerment of women and girls from poor and marginalized communities leading to improvement in their lives and livelihoods. They are part of the CARE International Confederation working in 84 countries for a world where all people live in dignity and security.

1.3 Program Profile

IFHI is a five year initiative (2011-2015) led by CARE India with initial focus on all 137 blocks of eight districts within Bihar whose population is 28,100,339 (Census 2011). This is followed by supporting the government in scaling up activities starting in 2013 to the remaining 30 districts of Bihar (refer map in Figure 5 below). IFHI partners include Janani (family planning), ABT Associates (public-private partnership), Columbia University – Averting Maternal Death and Disability/AMDD (maternal health), Emory University (nutrition), Save the Children/Saving New-born Lives/SNL (new born health).

The overall objective of IFHI is support the Government of Bihar in its goal to improve the health and survival of families with pregnant women and women with children less than two years.

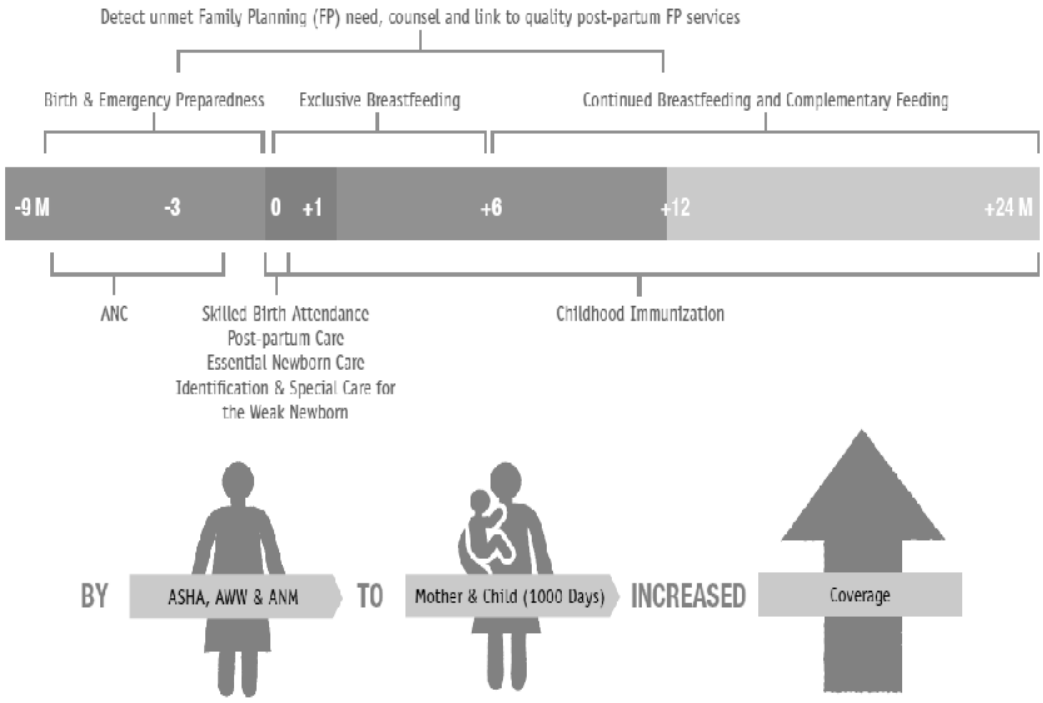

Fig (a) 1.1

The four main objectives of IFHI:

1. Increase delivery of high impact and cost-effective family health interventions.
2. Improve quality of key family health services and delivery processes.
3. Increase utilization of key services and uptake of health promoting behaviors.
4. Facilitate identification and consistent adoption of successful approaches throughout Bihar and communicate successes nationally.

Based on the above main objectives certain technical interventions have been developed. Of the technical interventions 75% were community based and 40% were innovations. The core interventions as part of the package were maternal care, new born care, nutrition, immunization, and family planning.

A) Maternal Intervention:

1) Counsel families for birth and emergency preparedness.
2) Quality management for routine deliveries at PHCs
3) Facility driven facilitative process to build BEmONC capabilities
4) Post-partum evaluation of the mother and new born, stabilization/referral for complications.

B) New born Intervention

1) Essential package of newborn care, including Skin to skin care, for all births (institutional and home).
2) Kangaroo mother care.
3) Community-based identification, referral and management of neonatal infections.

C) Immunization Intervention:

1) Fully immunized child by ensuring no left outs and reducing drop-outs.

D) Nutrition Intervention

1) Breastfeeding- a) early initiation, b) exclusive in first six months, c) breastfeeding for 24 months.
2) Appropriate complimentary feeding
3) Iron/Folic acid uptake and use during pregnancy

E) Family Planning Interventions

1) Community-based counseling: Integrate postpartum and post abortion Family Planning (FP) counseling and referral.
2) Facility-based counseling and services: Promote FP use in public sector through FP corners.
3) Expand access to quality services for family planning.
4) Improved uptake of birth spacing methods.

In order to achieve the above said goals and implement the interventions as well as ensure proper information flow and use IFHI developed a certain set of cross cutting solutions.

1) Strengthening data driven management.
2) Integrating service delivery.
3) Improving capabilities of and tools for frontline workers and facility staff.
4) Innovations and game changers.
5) Creating partnerships with private sector providers.

1) Strengthening data driven management:

a) Paper based mapping, enumeration and name based tracking:

It is important for the families to receive services universally, consistently and predictably through front line workers. In order to achieve this all the households are to be enumerated and all the pregnant women and women with children less than 2 years are to be identified. Only then can we ensure universal coverage of Integrated child development services. So to ensure this tracking and enumeration the district teams have developed certain tools like survey register, home visit registers and planners, child immunization due list, ANM supervisory tool. The team along with these tools after a detailed situational assessment supported the field level workers in mapping and enumerating all households in their catchment area and blocks. The main goal of this exercise was to identify excluded households. Once they are identified, they are tagged with existing anganwadi centres.

b) Self-driven Quality Improvement (QI) in facilities:

As per global evidence and situational analysis most perinatal deaths occur labor and delivery, or within the first 48 hours thereafter. Hence timing is very crucial in preventing maternal and neonatal deaths. Apart from addressing the delays, one more important factor to address is the availability of well-staffed, well equipped and a quality health center. So to improve the quality of facility based newborn and maternal care, a self-driven quality improvement process has been developed. It is being implemented in District hospital, PHC, FRU and Sub Divisional hospitals. A facility assessment tool to assess the basic functionality of service being delivered has been developed. QI teams have been formed at each facility. It helps in identifying gaps and developing action plans to fulfill those gaps.

c) Lot Quality Assurance Sampling (LQAS) – based household ‘surveys’:

To understand the coverage of services for IFHI outreach interventions LQAS surveys are conducted to generate results at the block level, district level and upwards. Handheld devices are being used to collect data on important summary indicators to provide results on a quarterly basis and for real-time data-driven management. The results are shared at the district and block levels to generate

discussions on specific outcomes, hence setting goals and to plan strategies to achieve outcomes.

d) Facility-based observation of deliveries to make decisions on program design and planning:
No data sources exist to measure facility based quality of care. As such, the project is testing the use of direct observations of delivery in facilities to assess the use of correct clinical protocols and associated rapid facility assessment to monitor infrastructure and supply related issues.

e) Longitudinal cohort studies to assess behavior changes post intervention:
The aim of this study is to identify the effect of IFHI interventions on effectiveness of FLWs-clients interaction, and measuring the effect of interactions on key determinants of behavior change. In this design, client-provider interactions are considered as 'program exposure', which is a combination of frequency, timeliness and quality of interactions between the FLWs and target population. The effect of the intervention on individual's overtime, starting from initial exposure until change or outcome is reached, will be measured. The study is initiated based on the maturity of the relevant community based intervention.

2) Integrating service delivery:

a) Health Sub-center (HSC) level platform for Auxiliary Nurse Midwife (ANM), Accredited Social Health Activist (ASHA) and Anganwadi Worker (AWW):
Currently an effective platform to bring the front line workers together is absent or if present is too large [Eg: 300 FLWs per block PHC]. Hence, the HSC is one single platform planned where all FLWs come together. It is a solution where the other stand-alone platforms such as ANM Tuesday meeting and Village Health Sanitation and Nutrition Day (VHSND) get structured and the FLWs come together for review, planning and capacity building. In all the thirty eight districts monthly health sub-center level platform meeting for supportive supervision, on-going capacity building, planning and review of reproductive maternal, new born and child health activities are conducted by ASHA and AWW by ANMs. Existing 137 block level supervisory and program

management platforms such as ANM Tuesday meeting, monthly block level meeting and ASHA Diwas are being strengthened. IFHI team aims to maximize participation of FLWs, build their capacity, motivation and leadership skills and through joint planning and coordination ensure better results and higher impact of services delivered.

3) Improving capabilities of and tools for frontline workers:

a) Paper based tools and job aids:

To enhance the capabilities of FLWs, resource materials including audiovisual content for health sub-center platforms, technical reference materials for front line workers have been created. These include ANM management tools, survey register, home visit register, home visit planner, ASHA,AWW analysis tool, IPC cards and job aid kits (uterus model, calibrated bowls and checklist).

b) Mobile nurse trainers and mini-skill labs:

To improve clinical skills of facility staff and drive quality improvement, mini-skill labs are set up in each identified facility. On-site support and training is provided through mobile nurse trainer teams in these skill labs for nurses in functional primary health center, sub divisional hospital and district hospital. On-the-job-training for medical, nursing and support staff, has been prioritized as a core solution by the IFHI project. Training is conducted using appropriate inexpensive equipment, mannequins or models of mothers and babies. Training curriculum and modules are developed, as per the Government of India guidelines.

4) Innovations and Game Changers

a) ICT - Continuum of Care Services (CCS):

This innovation will test whether or not frontline workers using ICT (mobile phone) enabled tools are able to achieve greater coverage and higher quality of services compared to traditional paper based tools. CCS pilot is designed by IFHI-CARE for case management by FLWs throughout the continuum of care.

The CCS application has been developed by Dimagi as per protocols devised by CARE team. Different multimedia job aids developed by BBC WST are also integrated in CCS to support Interpersonal Communication (IPC) activities. Formative work for this innovation included development of the application through extensive user testing. CARE with technical support of Dimagi has developed the CCS pilot which includes features such as schedulers, check-lists and automated due lists for all the components across the continuum of care with thorough pre-testing with front line workers. Mathematica is the MLE partner for the Randomized Control Trial (RCT) design and will conduct baseline and end-term evaluation of this pilot.

b) Team-Based Goals and Incentives (TBGI) for bundling of services across the maternal-infant continuum :

This innovation is for a team of front line workers instead of individuals. Team goals are being set for provision of bundled health services accompanied by team building and motivational activities. Finally the achievements of teams will be linked with non-financial incentives. Whether such an initiative has a positive impact on coverage of bundled services is being tested. This is being implemented with Georgia Institute of Technology in providing technical expertise. Mathematica is the MLE partner for the RCT design and will participate in baseline and end term evaluation of this pilot.

c) Improved uptake of birth spacing methods :

This innovation is focused on addressing barriers for high unmet need for spacing services among women of reproductive age. The key barriers include, low awareness on birth spacing choices and associated myths, poor quality of counseling, poor quality of clinical service, lack of follow up bias towards limiting methods due to motivator, provider and client incentives. The innovation will provide insights on improving uptake of spacing methods through availability of quality birth spacing services and implementing strategies for overcoming associated barriers.

d) Home Fortification of Complementary Foods:

Home fortification of complementary food with multiple micronutrients is recommended by World Health Organization (WHO) but not yet introduced in

programs in India. It is believed that locally generated evidence of effectiveness and feasibility will be an important factor influencing wider use in India. This pilot includes a RCT to examine the impact of the home fortification of foods on complementary feeding practices and anemia when implemented through the Integrated Child Development Services [ICDS] and health platforms at large scale. The lead technical partner for this innovation is Emory University. Further work will also explore optimal delivery platforms, and cost effectiveness.

e) Referral Package for maternal and neonatal emergencies:
Efforts to strengthen availability of definitive Basic Emergency Obstetric and Neonatal Care [BEmONC] and Comprehensive Emergency Obstetric and Neonatal Care [CEmONC] in public facilities will need to be supplemented by timely and effective referral of maternal and neonatal emergencies from lower to higher centers of care. This innovation will conduct formative studies to identify the factors contributing to and opposing effective referrals at household, community and facility levels. Based on the outcome, a set of interventions will be proposed that can potentially improve effectiveness of referrals at all levels, which can either be further tested or implemented at scale, as appropriate. The lead technical partner for this innovation is Columbia University - Averting Maternal Death and Disability.

f) Operational Effectiveness and Feasibility of Community-Based Identification, Referral Management and follow up of Neonatal Sepsis:
This innovation will test models of management of newborn infections through community based identification of infections by trained FLWs and following simple clinical algorithms to provide treatment and/or referrals. The lead technical partner for this innovation is Save the Children-Saving Newborn Lives. Formative work for this innovation includes studying the current service delivery platforms and designing various probable context specific models for identification and treatment.

g) Umbilical Cord Cleansing of neonates with 4% Chlorhexidine (CHX) for facility births:
The lead technical partner for this innovation is Save the Children - Saving Newborn Lives. IFHI has been in consultation with the main stakeholders to

obtain agreement on the design of a pilot. The pilot will test and generate sufficient evidence to advance the dialogue on national policy with regard to the use of CHX cord cleansing in facility and home births. This could be implemented at a sufficient scale to contribute and project impact on neonatal mortality.

1.4 District Profile

The district of Madhubani was carved out of the old Darbhanga district in the year 1972 as a result of reorganisation of the districts in the State. This was formerly the northern subdivision of Darbhanga district. It consists of 21 Development Blocks. Bounded on the north by a hill region of Nepal and extending to the border of its parent district Darbhanga in the south, Sitamarhi in the west and Supaul in the east, Madhubani fairly represents the centre of the territory once known as Mithila and the district has maintained a distinct individuality of its own.

The district has 21 blocks and 48 PHC with 4 SDH planned where 1 is fully functional, 7 FRUs are also planned where 2 are fully functional. A total of 702 HSC and APHC are 122 in number, The ANM numbers are in 555 in which 308 are regular and 247 are contractual staff.

2.0 REVIEW OF LITERATURE

A cross sectional facility based survey was conducted from Oct 2011 to March 2012 at six Bal Mahila Chikitsalyas (BMCs) in Lucknow district by Krishna Kumar Sahu et al. Conclusion drawn from this study were new born care corner was present in all the BMCs and adequate light was present in those new born care corner. 2 generators were functional whereas 4 were not functional due to defect or not availability of fuel. Nurses were available 24*7 in all BMCs, radiant warmer was present only in 3 BMCs and Self inflating resuscitation bag with mask was present in all BMCs. Oxygen facility was there in all the BMCs. Feeding tube was available in only 4 BMCs. In all BMCs Suction pump / mucus trap was present and functional. IV infusion set for new born was present in only 4 BMCs

Mechanical body weight scale was present and functional in all BMCs. Phototherapy unit was present and functional in 2 BMCs, Present but not functional in 3 BMCs & not present in one BMC. Drugs like dextrose normal saline, Ampicillin, Gentamicin, Aminophylline were available in all 6 BMCs but Adrenaline & Calcium gluconate was available in only in 2 BMCs. Vitamin K was available in only one BMC. [4]

A study on Quality of new born care: a health facility assessment in rural Ghana using survey, vignette and surveillance data was conducted by Linda Vesel et al in 2012. The study was conducted seven districts in BrongAhafo Region, Ghana in 64 different facilities. The conclusion drawn from above study was (52)81% got clean water supply, only (19)30% reliable electricity, (55)86% got fridge for storage, (60)94% got sink with soap. Bag and mask were available in (52)81%, (31)48% facilities got oxygen cylinder, (59)92% facilities got nasal suction.[5]

In 2013, a study on Current Neonatal Resuscitation Practices among Paediatricians in Gujarat, India was conducted by Satvik C. Bansal et al. In this study they took 126 paediatricians. Out of those, 74 (58.7%) were trained in neonatal resuscitation. Neonatal Intensive Care Unit with mechanical ventilation facilities was available for 68(54%) of respondents. Only 34 (27%) reported availability of oxygen blender. Self-inflating resuscitation bag with mask was available with 81.7% paediatrician. Only 73(57.9%)

reported to conduct resuscitation of high risk / unstable infants in the new born corner in the delivery room under radiant warmer. Only 46(36.5%) paediatrician applied plastic bags/ thermal rappers for extremely low birth weight new born. Many participants 78 (61.9%), adopted the current recommendations of endotracheal suctioning of non-vigorous new born in cases of meconium stained liquor. 35(27.8%) followed oral cavity suctioning before delivery of shoulder.[6]

In 2012, Alma M Martinez et al conducted a study on Barriers to neonatal care in developing countries: Parents and providers perceptions. This project involved collaboration between the University of California San Francisco and four hospitals in Southeast Asia. In this study they took interviews of 198 parents and 212 new born care providers. 39% reported that hospitals are too distant; almost 20% did not know where to obtain care. Parents cited lack of cleanliness (46%), poor availability of medications (42%) or services (36%), staff friendliness (42%), poor infant outcome (45%), poor communications with staff (44%) and costs of care (34%) as significant problems during prior new born care. Providers cited lack of equipment (74%), lack of staff training (61%) and poor infrastructure (51%) as barriers to providing neonatal care.[7]

In 2000-2002, Pattinson RC conducted a study on ‘’Why babies die – a perinatal care survey of South Africa’’. According to this study there were preventable delays associated with perinatal deaths in rural areas of South Africa. Out of which the followings are associated with new born care such as 4.9% of perinatal death occur due to inadequate facilities and equipment in neonatal units and nurseries. 3.5%

Perinatal death occur due to non-existent or poor antenatal care. 3.2% perinatal death due to poor intra-partum foetal monitoring. 0.8% of perinatal death due to delay in medical personnel calling for expert assistance. 0.8% perinatal death due to inadequate neonatal management plan.[8]

A study was conducted by Sutapa B Neogi in 2013, on Setting up a Quality Assurance Model for Newborn Care to Strengthen Health System in Bihar, India. The first quarter data (from 37 districts and 420 NBCCs) was collected in the month of January 2012 and the second set (38 districts, 463 NBCCs) in April 2012. The data

collection process continued for one month. The conclusion drawn from this were as follows 12%, 63%, and 25% units were categorized as good, average and poor based on infrastructure. For equipment, 68% of units performed poorly; for stock maintenance 64% and 35% of NBCCs fell under good and average categories respectively; most (54%) NBCCs had average scores for aseptic measures; 30% fell in the poor category.[9]

In April 2009 to March 2010, SumitMalhotra et al conducted a study on Assessment of Essential New born Care Services in Secondary-level Facilities from Two Districts of India. In this study they include Nagaur district in Rajasthan and Chhatarpur district in Madhya Pradesh were included. Six secondary-level facilities from the districts—two district hospitals (DHs) and four community health centres (CHCs) were evaluated, where maximum institutional births within districts were taking place. Two CHCs in Chhatarpur did not have suction device. The average knowledge score amongst service providers in resuscitation was 76%. At the time of this assessment, both the DHs at Nagaur and Chhatarpur did not have separate functional units for new-borns but, within the paediatric ward, each of the two beds with radiant warmer was used for providing new-born care. In two out of three facilities in Nagpur, NCCs were not used and maintained poorly. Only in half of all facilities, the NCC was kept draught-free. Medical thermometer were available in about half of the facilities but none of the facilities was equipped with room thermometers. Other basic physical facilities relating to new-born care, such as cord-tie, cord-cutter, and infant- weighing scale were available at most facilities, except in one of the CHCs in Nagaur. Hand gloves was brought by the mother or other attendants was common. Other items for asepsis, such as disinfectants, disposable syringes and needles, gowns, and slippers were available and being used in most facilities. Equipment for new born resuscitation were available and functioning in most of the study facilities. Resuscitation bags with masks were available in four out of six facilities. However, masks of different sizes were not available. Oxygen supply was present in most facilities, and suction devices were present and functional in all facilities, except the two CHCs in Chhatarpur. A locally-prepared suction device, made by cutting intravenous (IV) tube, was in use. Laryngoscopes and endotracheal tubes for infants were available at the DH in Nagaur but not in Chhatarpur. At the CHC level, even if available, these were not being used. Radiant warmers were available in only three facilities (all in Chhatarpur) but were functional only in two. The warmers were also available and functional in both district hospitals in their paediatric

wards. Regular inspection and maintenance of these equipment were not carried out, and delay in reporting of repair workers was a frequent problem. Cups and spoons for feeding the new-born were not available in any of the facilities, and nasogastric tubes for feeding sick infants were available only at the district hospitals. Almost all assessed facilities did not have a phototherapy unit. The one available in the Chhatarpur District Hospital was not in working condition. Drugs like ampicillin, gentamicin, adrenaline, aminophylline & vitamin k were available in all facilities. All the facilities git trained personnels.[2]

3.0 Rationale:

As per the norms of the government of India a New born care corner is mandatory is each and every government facility where deliveries are conducted. The major issue is not just the availability of new born care corner, but its functionality. The current infant mortality rate in Bihar is 43/1000 live births, neonatal mortality rate is 35/1000 live births and under 5 mortality rate is 57/1000 live births

The major causes for neonatal deaths in India are Prematurity and low birth weight, neonatal infections, birth asphyxia and birth trauma, pneumonia and diarrheal diseases. So in order to achieve the MDG-4 we need to improve institutional deliveries. Interventions combining resuscitation of newborn baby, breastfeeding, prevention and management of hypothermia and kangaroo mother care (KMC) can reduce NMR by more than half. NBCC is a space within the delivery room in any health facility where immediate care is provided to all newborns at birth. This area is mandatory for all health facilities where deliveries are conducted.

This study was thus designed to assess the availability of various equipment, infrastructure, manpower and neonatal management practices with regards to immediate care, infection control and bio medical waste.

4.0 Objectives

a) General objective:

To assess the availability and functionality of new born corners in primary health centers of Madhubani district of Bihar.

b) Specific objectives:

1) To check the availability of new born corners at PHC level

2) To assess the gaps in each new born corner

3) To suggest a road map to full-fill these gaps.

5.0 Methodology

Study type: Cross-sectional study conducted in 21 PHCs where NBCC is required.

Study area: Madhubani district of Bihar, where there is 21 blocks in which 21 fully functional PHCs functioning which also takes care of APHCs and SCs which have been upgraded to MCH centres.

Study Sample: 1 Block Health Manager and 1 Auxiliary Nurse Midwife of each facility

Sampling method: Convenient Sampling

Methods of Data collection: A structured Facility assessment tool designed by CARE India, was used to collect the relevant data.

6.0 Findings

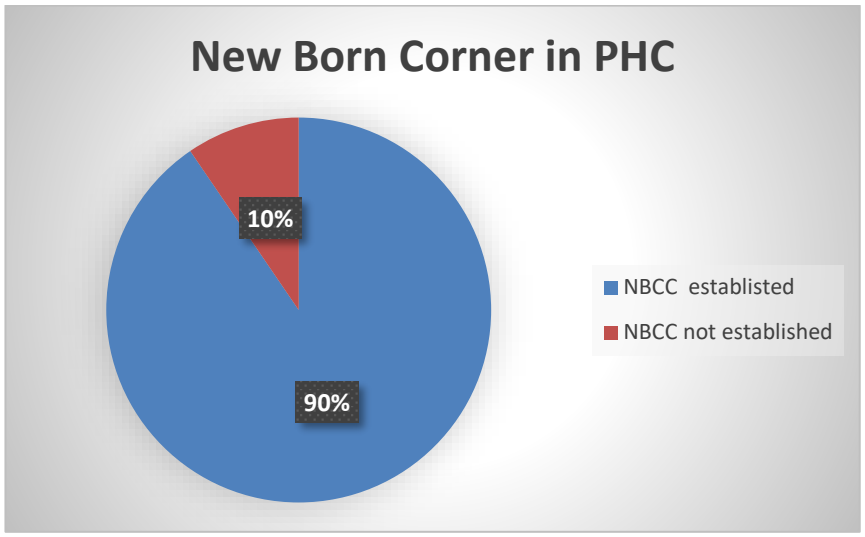

Figure 1 Establishment of New born Care Corner in labour room in Primary Health centres

As shown in the Figure, New born care corners are established in 90% of the health facilities visited and needs to be established in 10% of the facilities as per the Facility Born new born care operational guidelines

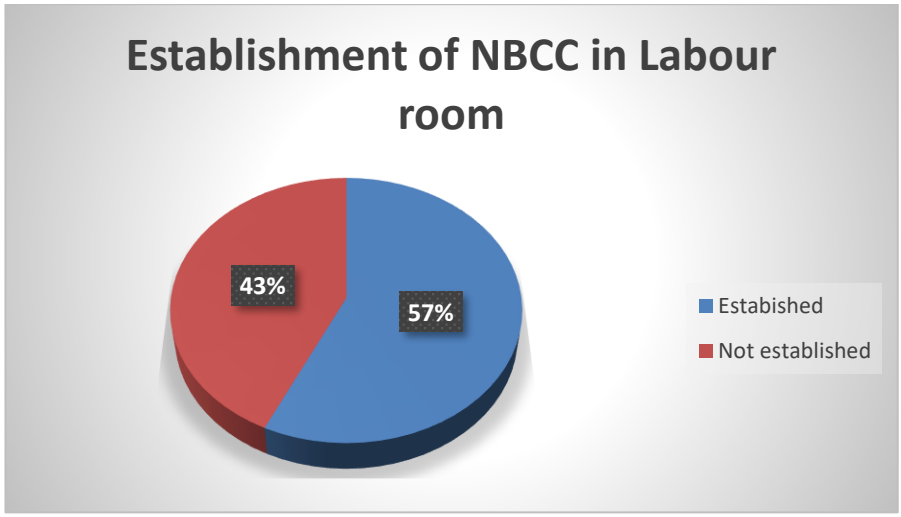

Figure 2 Establishment of new born care corner in Labour room of Primary health centre

As shown in the figure, Out of the 90% facilities where New Born Care Corners are established, 57% New born care corners are established in the labour rooms

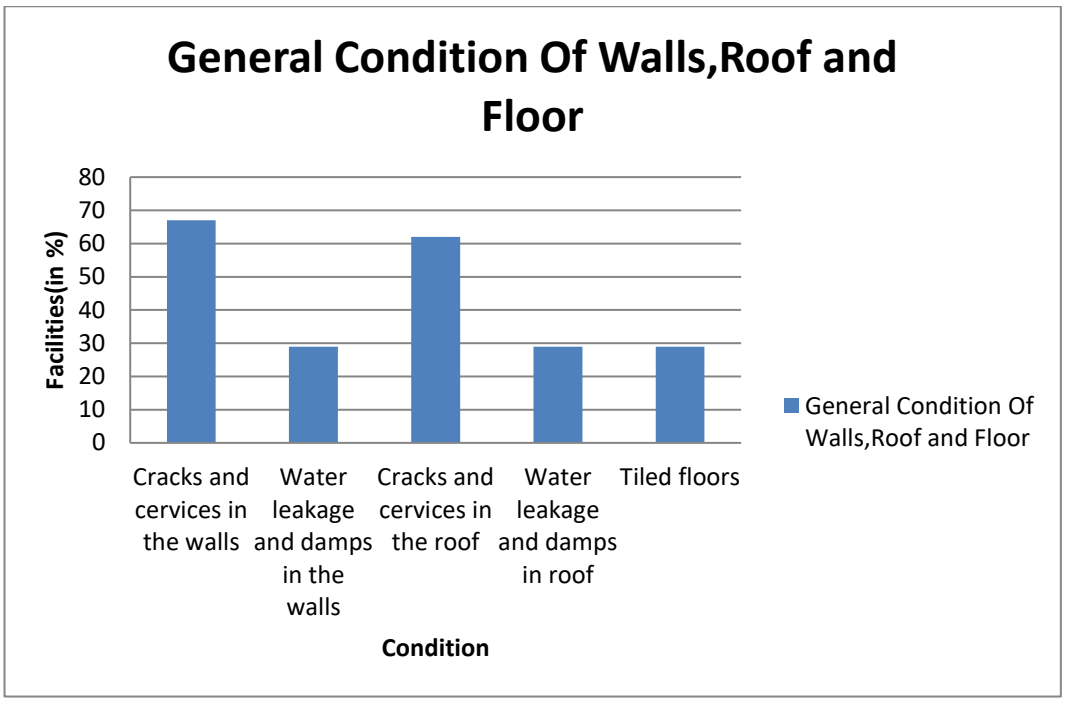

Figure 3 General condition of Roof, Walls and Floor of the labour room

The figure depicts that 67% of the NBCC setups are having cracks and cervices in the wall, 29% have water leakage or dampness in the walls, 62% have cracks in the roof and 29% have water leakage and dampness in the roof and only 27% have tiled floors.

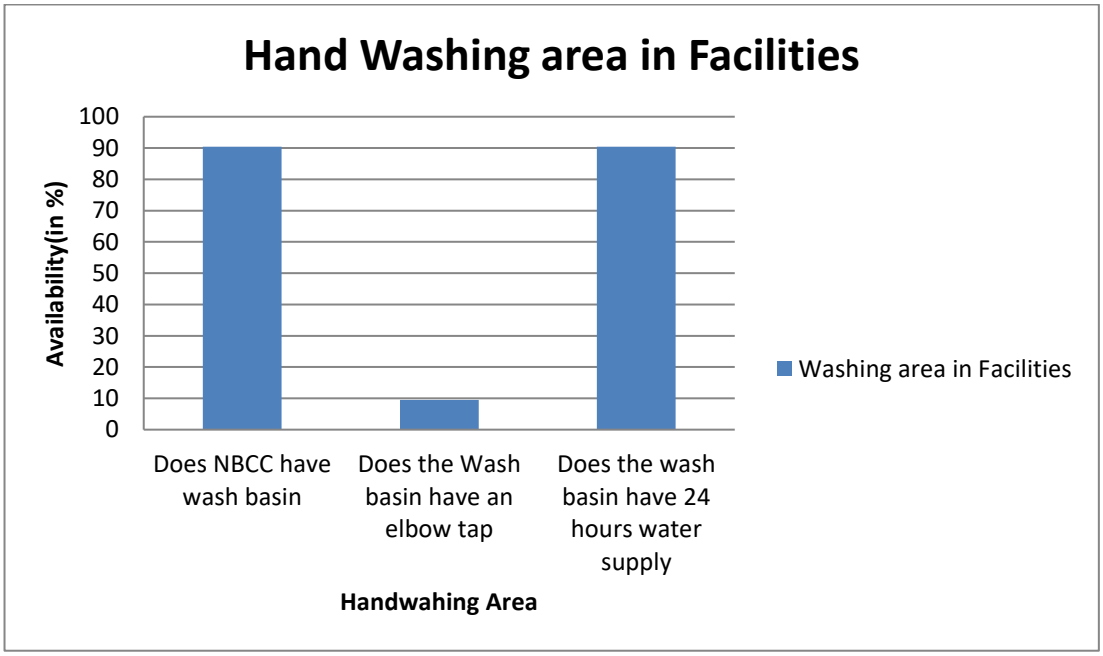

Figure 4 Hand Washing area in the labour room of the healthcare facilities

As shown in the figure, 90% of the facilities have washbasin and water supply for 24/7 in the labour room however only 9.6% have an elbow operated tap

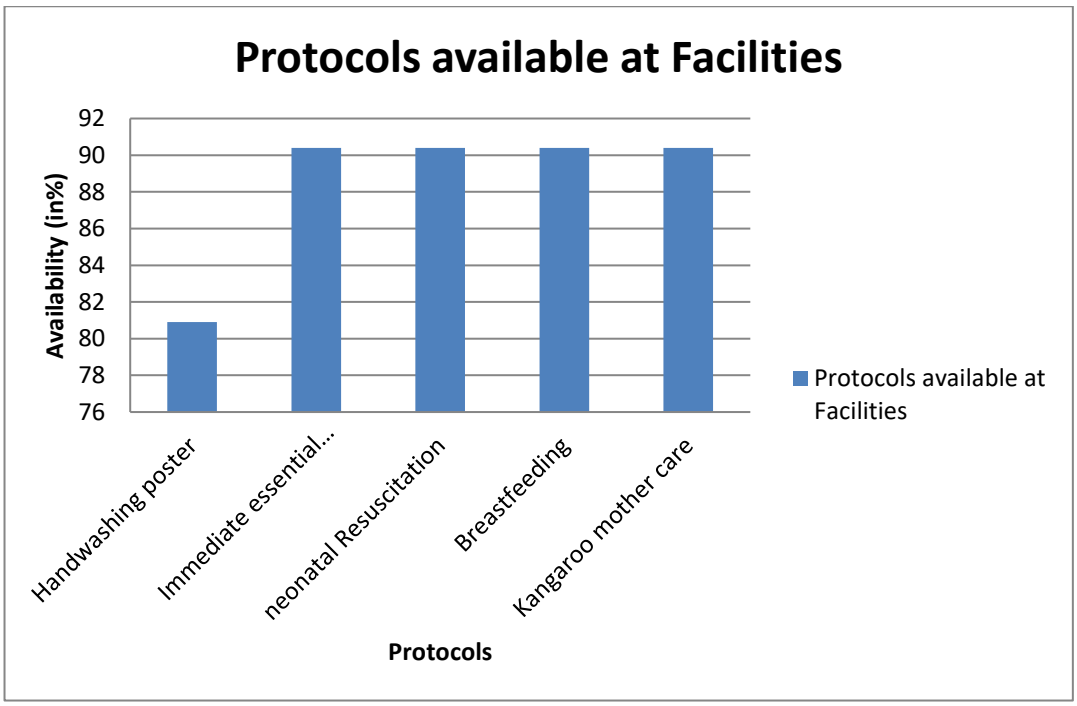

Figure 5 Availability of protocols at the healthcare facilities

The protocols available and displayed in these NBCC setups are also important as per the FBNC guidelines, in which 81% of the facilities have hand washing protocols available, immediate essential new born care at 91%, Neonatal resuscitation at 91%, Breastfeeding at 91% and KMC at 91% protocols

\

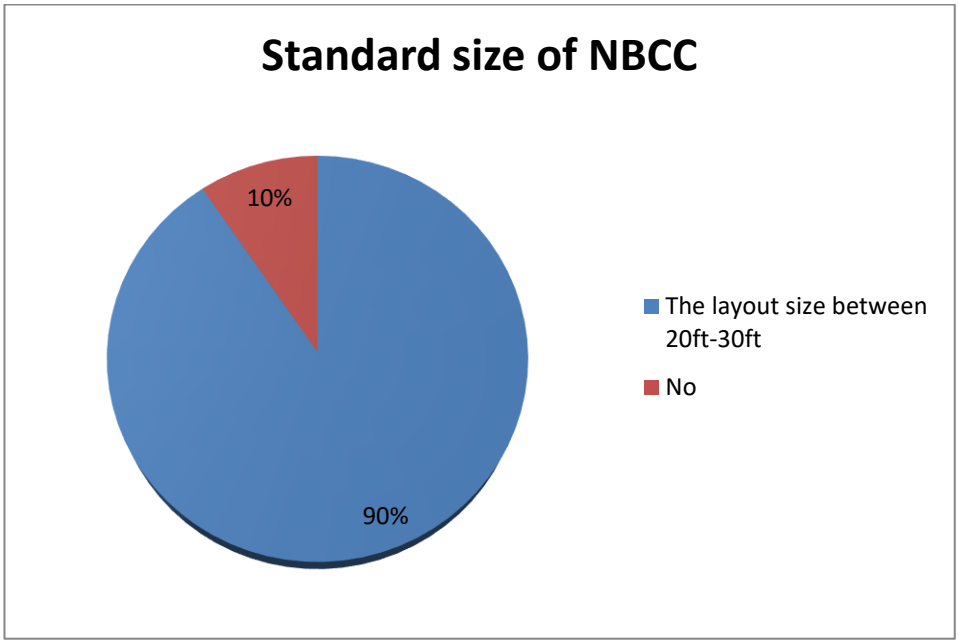

Figure 6 Standard size of the Newborn care corner as per FBNC operational guidelines

The layout of the NBCC is also important, as per the FBNC guidelines the layout size should be at least 20 feet and not more than 30 feet and 90% of the New born care corners are made as per the guidelines

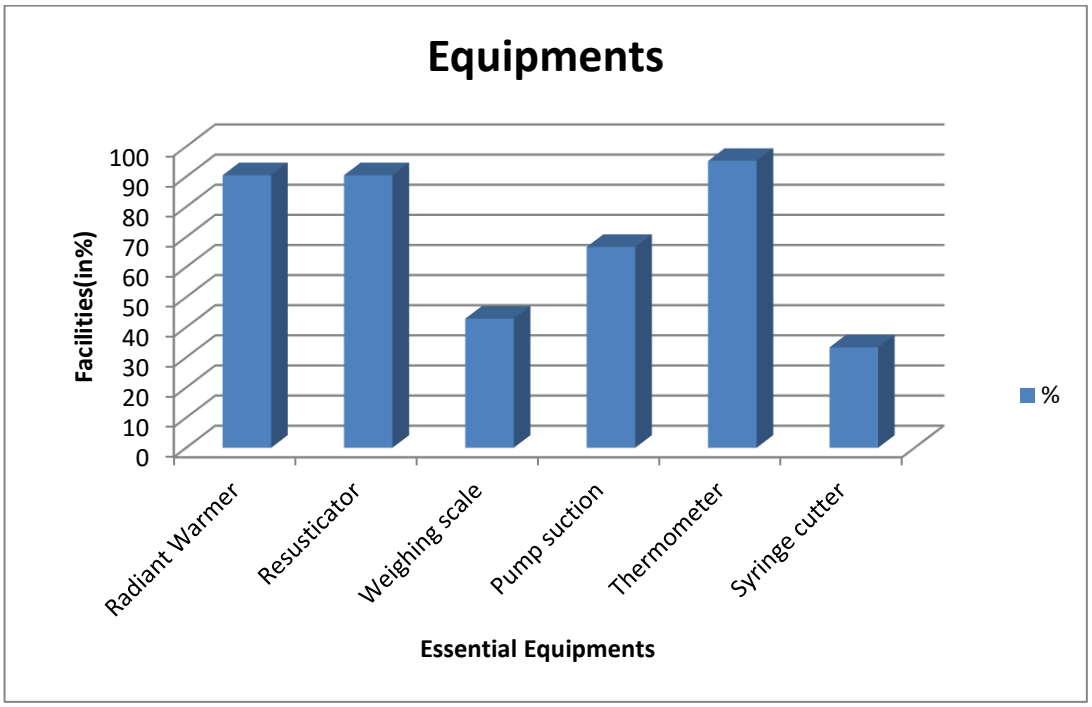

Figure 7 Availability of essential equipments in the healthcare facilities

The Equipment available at the NBCC setups are Radiant warmer (90%), Resuscitator (90%), weighing scale (43%), Pump suction (67%), Thermometer (95%), Syringe cutter (33%).

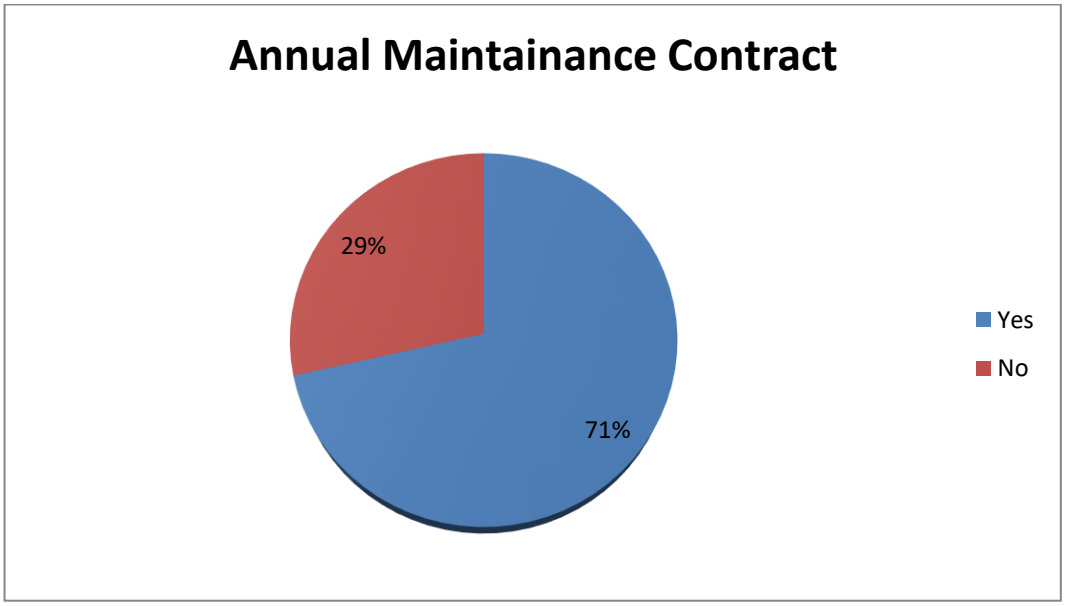

Figure 8 Availability of Annual Maintenance contract for the equipments of labour room

The annual maintenance contract of the PHC equipment are an important aspect as these equipment are very expensive and timely maintenance of these equipment ensure proper functioning and avoid shutdowns at odd times. In 21

PHC in which 71% annually maintain their contract on all the lifesaving equipment and Generator sets.

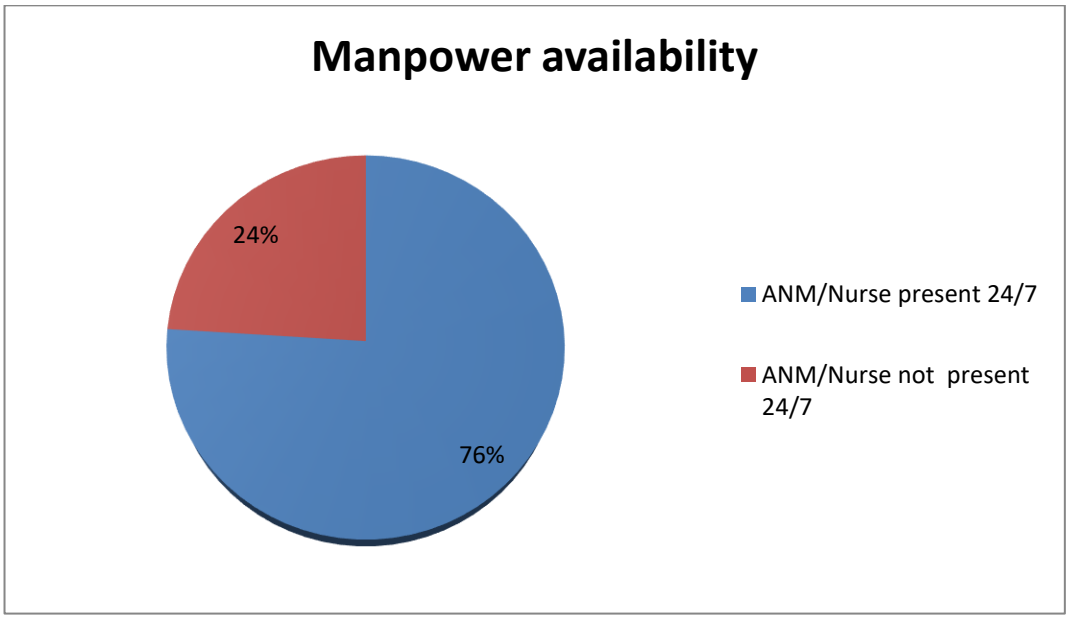

Figure 9 Availability of the Manpower

The more vital component to any system is the experienced and the skilled staff available at the right time, the PHC where round the clock at least 1 ANM or Nurse available are 76%.

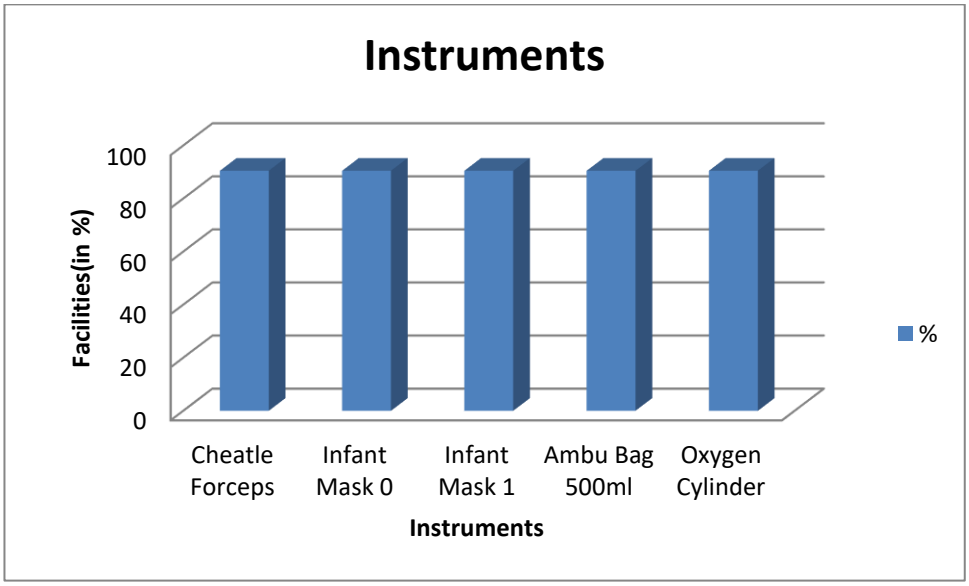

Figure 10 Availability of instruments

The availability of instruments are an essential component to New born care corner as these are vital components to delivery of healthcare to the needy.As shown in the figure over 80% facilities had the desired instruments for providing newborn care services

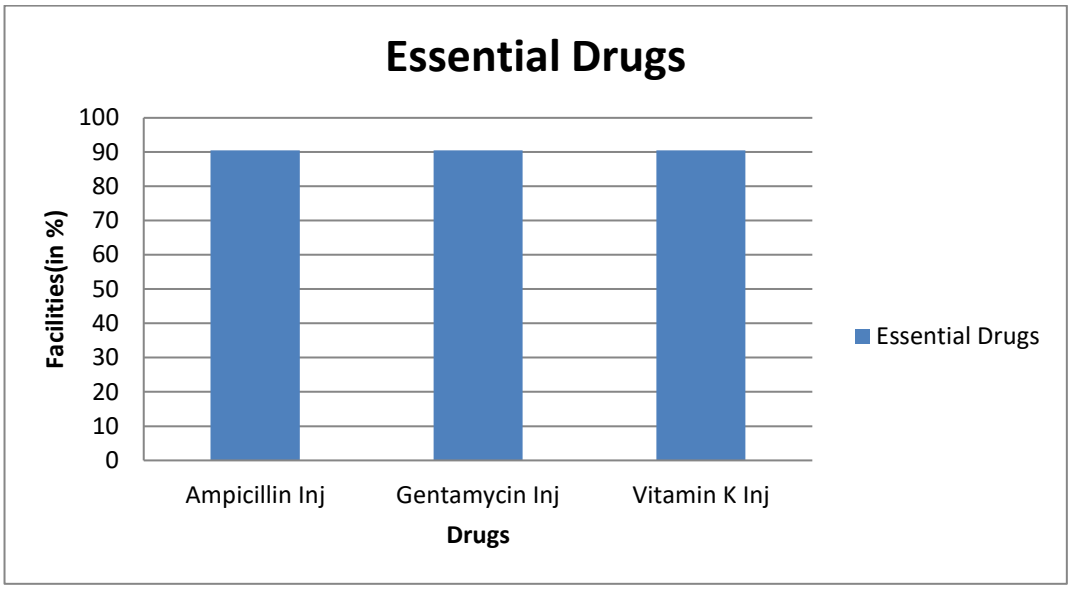

Figure 11 Availability of the essential drugs

The availability of essential drugs in these PHCs where NBCC are setup are 94% in which Inj. Ampicillin, Inj. Gentamycin and Inj. Vitamin K are available.

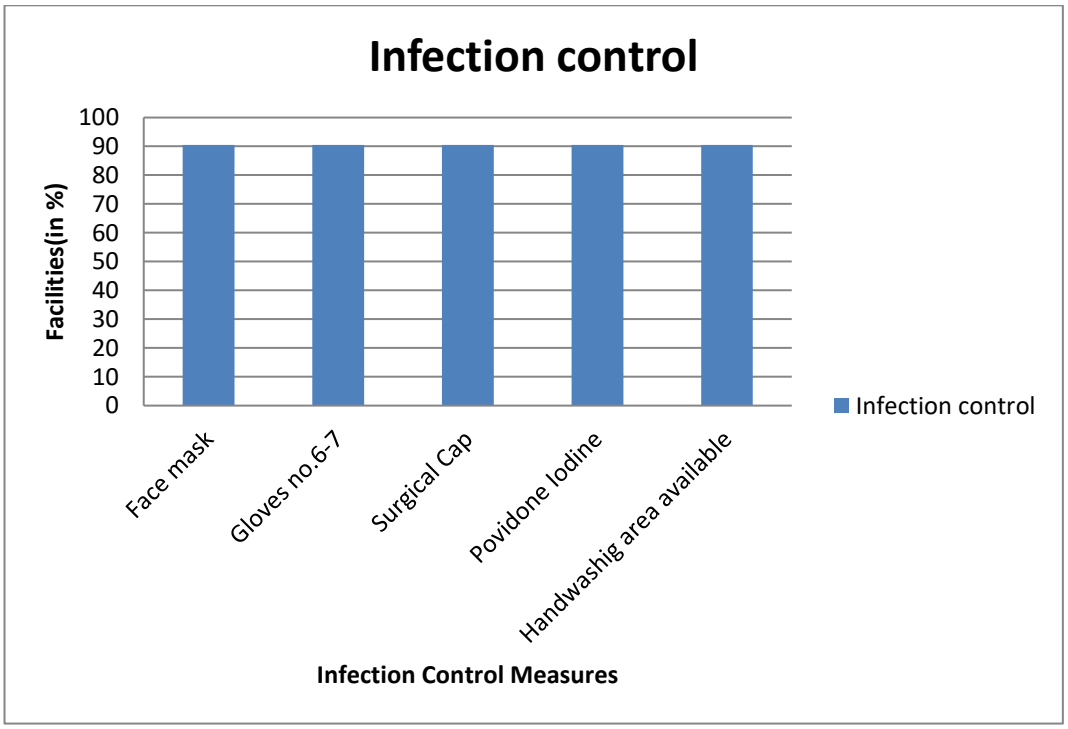

Figure 12 Availability of Infection control measures

Infection control is a very major issue to be addressed in the NBCC setup as the chances of neonates getting infections are very high if not practiced new born care in the right manner, the availability of Face mask(91%), Gloves size no. 6-7 (91%), Surgical caps (91%), Povidone iodine (91%), hand washing area available (90%).

7.0 Discussion

According to the Facility based Newborn care corner operational guidelines, Ministry of Health and Family welfare 2011, New born care corner should be established within the labour room of all the health facilities and should be equipped with all the essential equipments.[3] However, as per the study conducted, 90% of the facilities were equipped with all the essential equipment and 90% of the facilities were equipped with all the essential and desirable equipment. The essential equipment which were lacking was mechanical baby weighing scale.

According to the Pattison RC 2002 study, the number of deaths of the newborn babies were due to the inefficiency and the broken equipment including the radiant warmers, the suction apparatus, the resuscitation equipment, it can be visible from the findings that the availability of equipment are more than 90% in almost all facilities and the more major aspect to be noted is the readiness of these equipment which is also ensure through the annual maintenance contract which is being maintained by almost 71% of the facilities.

Sumit Malhotra et al, april 2009.Which is discussing about the assessment of the facilities for all the aspects related to the NBCC and the new born care, here in this study they discuss the importance of the layout and the physical setup to be equally healthy as the technical components and the equipment, it can be deducted from the findings that the 67% of the facilities have cracks and cervices in the walls, about 29% have water leakage and dampness also present, in case of roof almost 62% have cracks and cervices are present and almost 29% have even water leakage and dampness, it has also been found from the findings that 29% of the facilities have tiled floors. And it is also very essential to display and have protocols in the NBCC setup facilities, in 91% of the facilities it has been found to display immediate essential new born care, neonatal resuscitation, breastfeeding, kangaroo mother care and in 81% facilities they have hand washing protocols displayed and available.

8.0 Conclusion

The availability of essential new born care equipment is almost 90%, availability of protocols 90%, the hand washing area is 90%, the essential drugs are also available in 90% facilities, it is very important to assess the real reason for hampering the quality of new born care in these facilities and if the availability of equipment are also there the inefficiency may be due to other sources which need to enquired with help of a different set of tools.

9.0 Recommendations

1) Micro-planning to assess each facility to the fullest with the help of observational tools such as practices and equipment functionality

2) Periodic assessment of the tools to assess the facility gaps on a timely basis, to create roadmaps to achieve the goals on a faster time.

3) To ensure proper training of the staff on a regular basis, not only on the new born care but also on the importance of keeping the new born care corner clean.

4) Periodic checking of the equipment and the lighting equipment to ensure the proper functioning of these equipment for better efficiency and untimely breakdown of machines.

9.0 REFERENCE

1. SRS Bulletin Report,2012 Retrieved from http://censusindia.gov.in/vital_statistics/SRS_Bulletins/Bulletins.html
2. Sutapa Bandyopadhyay Neogi et al, Assessment of Special new Born Care Units in India,2011: Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3225112/
3. Ministry of Health and Family welfare, Government of India:Facility Based New born care operational guidelines 2011: Retrieved from http://www.statehealthsocietybihar.org/rch/FNBC_Operational_Guideline.pdf
4. Krishnakumar sahu et al Assessment of health care facilities for maternal and child health care at Bal Mahila chikitsalyas in Lucknow district, India. Retrieved from http://ijbar.ssjournals.com/index.php/journal/article/view/615
5. Vesel L et al 2013 ,Quality of newborn care: a health facility assessment in rural Ghana using survey, vignette and surveillance data, Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/23667161
6. Satvick C bansal et al Current Neonatal Resuscitation Practices among Paediatricians in Gujarat, India;International Journal of Pediatrics,Volume 2014 (2014), Article ID 676374, 7 pages. Retrieved from http://dx.doi.org/10.1155/2014/676374
7. Alma M Martinez 2012,Barriers to neonatal care in developing countries: Parents and providers perceptions Retreived from http://angkorhospital.org/wp-content/uploads/2012/12/Barriers%20to%20neonatal%20care_J%20Paeds%20and%20Child%20Health%202012.pdf
8. Pattinson RC 2002,'Why babies die – a perinatal care survey of South Africa. Retrieved from http://www.who.int/pmnch/media/publications/aonsectionIII_3.pdf
9. Sutapa B Neogi, 2013, Setting up a Quality Assurance Model for Newborn Care to Strengthen Health System in Bihar, India. Retreived from http://www.indianpediatrics.net/feb2014/136.pdf

10.0 ANNEXURE

1.1 New Born Care Assessment

1. Does this facility have a new born corner?	A) Yes B) No If no then do not fill the form
2. Does this facility have a new born corner inside the labor room?	A) Yes B) No
3. If new born corner is outside the labor room, what is the distance from labor room(in metres)?	

4. General Condition
5. Walls

6. Are the walls completely plastered?	A) Yes B) No
7. Are the walls without cracks and cervices?	A) Yes B) No
8. Do the walls have tiles?	A) Yes on all walls up to roof B) Yes on all walls not up to roof C) No If A then Shift Q.10
9. Are the walls Whitewashed?	A) Yes B) Yes but needs repainting C) No
10. Is there a problem of water leakage/dampness from the walls during anytime of the year?	A) Always B) Occasionally C) Never

11. Roof

12. Is there a false ceiling?	A) Yes B) No
13. Is the roof without cracks and Cervices?	A) Yes B) No
14. Is the roof whitewashed?	A) Yes B) No
15. Is there a problem of water leakage/dampness from the walls during anytime of the year?	A) Always B) Occasionally C) Never

16. Floor

17. Does the have tiles?	A) Yes B) No
18. Is the floor without cracks and cervices?	A) Yes B) No

19. Doors and Windows

20. Does the new born corner have a door that can be shut to ensure privacy?	A) Yes B) No
21. Does the door have an automatic door closure?	A) Yes and functioning B) Yes, but not functioning C) No
22. Can the door be locked?	A) Yes and functioning B) Yes, but not functioning C) No
23. Does the new born corner have window(s)?	A) Yes B) No If No then skip to Q27
24. Can the windows be completely closed?	A) Yes B) No
25. Do the windows have missing/broken glass panes?	A) Yes B) No
26. Do the doors and windows have mosquito screens?	A) Yes without holes B) Yes with holes C) No

27. Layout and Usage

28. Does the new born corner have condemned articles lying around?	A) Yes B) No
29. Does the new born corner have cobwebs?	A) Yes B) No
30. What is the size of the new born corner? (Length*width*height in feet)?	

31. Electricity

32. Does the new born corner have inverter connection?	A) Yes B) No
33. Does the new born corner have generator connection?	A) Yes B) No

34. What are the various equipment's in the new born corner that runs on electricity?
35. List equipment available

36. Radiant warmer	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes, 5 amp 2 pin
37. Low pressure electric suction machine	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes, 5 amp 2 pin
38. Mobile lamp with stand	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes , 5amp 2 pin
39. Phototherapy machine	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes, 5 amp 2 pin

40. Oxygen concentrator	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes, 5 amp 2 pin
41. Digital Weighing scale for baby	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes, 5 amp 2 pin
42.	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes, 5 amp 2 pin
43.	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes, 5 amp 2 pin
44.	A) Yes, 15 amp B) Yes, 5 amp 3 pin C) Yes, 5 amp 2 pin

45. How many functioning sockets are available in the new born corner?

46. Details of the electric socket	Required	Available
47. 3-pin 15 amp		
48. 3-pin 5 amp		
49. 2-pin 5 amp		

50. Is there need to relocate any switchboards or install new switchboards for greater convenience?
51. Do any Switchboards need replacement?
52. If yes then the number of switch boards that need replacement?
53. How many functional illumination sources (from the below) are available in new born corner?

54. Tube Lights	Number-
55. Electric Bulbs	Number-
56. CFLs	Number-
57. Does the new born corner have at least one high capacity torch with rechargeable batteries?	A) Yes B) No
58. Does the new born corner have open/exposed/hanging electric wires?	A) Yes B) No

59. Air Conditioner/ Fans/ Heating

60. Does the new born corner have an air conditioner?	A) Yes and functioning B) Yes but not functioning C) No

	If No then Skip to Q 65.
61. For each air conditioner as the following information	
62. Type of air conditioning?	A) Window B) Spilt
63. Capacity in tonnage	
64. Frequency of cleaning the filter	A) Weekly B) Once in fifteen days C) Once in a month D) Never
65. Does the new born corner have fans?	A) Yes and functioning B) Yes but not functioning C) No If No then skip to Q72.
66. If yes how many fans are available?	
67. Ceiling/Wall mounted?	
68. Pedestal/Table?	
69. Exhaust	
70. How frequently are the fans cleaned?	A) Weekly once B) Monthly once C) Not fixed
71. Is there dust on fan blades?	A) Yes B) No

72. Hand washing area

73. Does this corner have a wash basin?	A) Yes, Separate for new born corner B) Yes, common between labor room and new born corner C) No If the answer is no then skip to 85
74. How far is wash basing from new born corner? (In feet)	
75. Which type of washbasin is available in new born corner?	A) Ceramic Washbasin used regularly in bathroom B) Constructed Washbasin (masonry) C) Surgical type of washbasin
76. Does this washbasin have an elbow tap?	A) Yes and functioning B) Yes and not functioning C) No
77. Does this washbasin have 24 hours water supply	A) Yes B) No
78. What is the size of the Wash basin (Length*width*Depth)? In Cm	
79. Distance (in CM) between the floor and top edge of the washbasin?	

80. Distance (in cm) between the top edge of the washbasin snout of the tap?	
81. Is there a hand washing poster on top of the washbasin	A) Yes B) No
82. Is there a timer available(to know the exact time taken for hand washing)	A) Yes B) No
83. Is there a facility for warm water during winters?	A) Yes B) No
84. Is there any leakage from the wash basin?	A) Yes B) No

85. Human Resource

86. How many of the following are given newborn corner duty?	During Day	During Night
87. Grade A Nurses		
88. Auxiliary Nurse Midwife(ANM)		
89. Mamta		
90. Sweepers		

91. Either ANM or Grade A nurse available for round the clock duty in labor room?	A) Yes B) No

92. Equipment's
93. Does the new born corner have the following equipment?

94. Watch/Clock with a second's hand?	A) Yes and functioning B) Yes and not functioning C) No
95. Infant/pediatric stethoscope?	A) Yes and functioning B) Yes and not functioning C) No
96. Baby Weighing machine/Scale (spring type)?	A) Yes and functioning B) Yes and not functioning C) No
97. Room thermometer?	A) Yes and functioning B) Yes and not functioning C) No
98. Low pressure electric Suction machine?	A) Yes and functioning B) Yes and not functioning C) No
99. Foot operated suction machine?	A) Yes and functioning B) Yes and not functioning

	C) No
100. Cheatle forceps?	A) Yes B) No
101. Radiant warmer?	A) Yes and functioning B) Yes and not functioning C) No If no skip to Question 109
102. How many radiant warmers are available in the new born corner?	

103. Check for the following in each radiant warmer

104. Mobile new born resuscitation table/Trolley?	A) Yes B) No
105. Mattress on it	A) Yes B) No
106. Fixed Height radiant warmer	A) Yes B) No
107. Skin temperature probe	A) Yes B) No
108. Air temperature probe	A) Yes B) No
109. Phototherapy machine	A) Yes B) No If no skip to Question 114

110. Check for the following in each phototherapy machine

111. Is there a fluxmeter in the phototherapy unit?	A) Yes B) No
112. If, yes what is the reading on the fluxmeter?	
113. When was the tube lights last changed?	

114. How many mobile lamps with stands are available in this new born corner?	
115. How many functioning IV stands are available in the new born corner?	
116. Does the new born corner have new born tray?	A) Yes B) No If No skip to question 121

117. For each new born tray check the availability of the following items. Enter the number available, if not enter 0.

118. Stainless steel tray	
119. Towels-2	
120. How many complete new born trays are available?	

121. Surgical instruments for new born care

122. Check availability of following equipment's for new born resustication

Equipment		Required	Available
123.	Infant mask, Size 0	1	
124.	Infant mask, Size 1	1	
125.	Infant mask, Size 2	1	
126.	D- Ambu bag – 500 ml	1	
127.	Infant laryngoscope	1	
128.	Infant laryngoscope blade, size 0	1	
129.	Infant laryngoscope blade, Size 1	1	
130.	Infant laryngoscope , Spare bulb	2	
131.	Infant Laryngoscope, spare batteries	2	
132.	Oxygen cylinder	1	
133.	Oxygen cylinder pressure meter	1	
134.	Oxygen cylinder flow meter	1	
135.	Oxygen cylinder Humidifier	1	
136.	Oxygen cylinder key	1	
137.	Oxygen concentrator	1	

138. Equipment maintenance

139. Does this facility have annual maintenance contract for the maintenance of the following equipment's?

140.	Radiant warmer	A) Yes B) No
141.	Photo therapy machine	A) Yes B) No
142.	Suction machine	A) Yes B) No
143.	Oxygen concentrator	A) Yes B) No

144. Consumables

145. Does the facility have following consumables in the new born corner?

146.	Soap	A) Yes B) No
147.	Detergent	A) Yes B) No

148. Drugs and surgical items

149. Does the facility have the following drugs in the new born corner?

150.	IV Fluids	A) Yes B) No If no Skip to Question 153
151.	Dextrose 5%	A) Yes B) No
152.	Dextrose normal saline	A) Yes B) No
153.	Antibiotics	A) Yes B) No If no skip to question 156
154.	Ampicillin (Injection)	A) Yes

	B) No
155. Gentamicin (Injection)	A) Yes B) No

156. Emergency Drugs

157. Adrenaline (epinephrine) (Injection)	A) Yes B) No
158. Aminophylline (Injection)	A) Yes B) No
159. Atropine (Injection)	A) Yes B) No
160. Calcium glacunate (Injection)	A) Yes B) No
161. Dexamethasone (Injection)	A) Yes B) No
162. Glucose 25% (Injection)	A) Yes B) No
163. Glucose 50% (Injection)	A) Yes B) No
164. Hydrocortisone (Injection)	A) Yes B) No
165. Vitamin K (Injection)	A) Yes B) No

166. Surgical items

167. Does this facility have following surgical items in the new born corner?

168. Cap	A) Yes B) No
169. Face mask	A) Yes B) No
170. Gloves 6.0	A) Yes B) No
171. Gloves 6.5	A) Yes B) No
172. Gloves 7.0	A) Yes B) No
173. Gloves 7.5	A) Yes B) No
174. Gloves 8.0	A) Yes B) No
175. Hypodermic needle 23G	A) Yes B) No
176. Hypodermic needle 25G	A) Yes B) No
177. Intra Venous Cannula 22G	A) Yes B) No
178. Intra Venous Cannula 24G	A) Yes B) No
179. Intra Venous Set (preferably micro set)	A) Yes B) No

180. Syringe (2ml)	A) Yes B) No
181. Syringe(5ml)	A) Yes B) No
182. Syringe(10ml)	A) Yes B) No
183. Mucus extractor, 20ml, sterile, disposable	A) Yes B) No
184. Suction catheter 10F	A) Yes B) No
185. Suction catheter 12 F	A) Yes B) No
186. Disposable uncuffed tracheal tubes, Sizes 2.5	A) Yes B) No
187. Disposable uncuffed tracheal tubes, Sizes 3.0	A) Yes B) No
188. Disposable uncuffed tracheal tubes, Sizes 3.5	A) Yes B) No
189. Umbilical catheter	A) Yes B) No
190. Naso Gastric feeding tube for new born 7 F, 40 cm length, disposable	A) Yes B) No
191. Cord clamp	A) Yes B) No

192. Dressing materials

193. Thread (cord tie)	A) Yes B) No
194. Adhesive tape	A) Yes B) No
195. Gauze Piece	A) Yes B) No

196. Disinfectants and antiseptic solutions

197. Chlorhexidine gluconate + cetrimide (Savlon)	A) Yes B) No
198. Ethanol/spirit	A) Yes B) No
199. Gentain violet paint	A) Yes B) No
200. Povidine iodine	A) Yes B) No

201. Protocols

202. Does this facility have the following protocols?

203. Immediate essential new born care	A) Yes B) No

204. Neonatal resuscitation	A) Yes B) No
205. Breastfeeding	A) Yes B) No
206. Kangaroo Mother care	A) Yes B) No

207. Biomedical Waste management

208. Does the facility have the following items in the new born corner?

209. Heavy duty gloves	A) Yes B) No
210. Bleach or bleaching powder	A) Yes B) No
211. Dis infective solution	A) Yes B) No
212. Yellow color puncture proof container	A) Yes B) No
213. Red color puncture proof container	A) Yes B) No
214. Blue color puncture proof container	A) Yes B) No
215. Yellow color bags	A) Yes B) No
216. Red color bags	A) Yes B) No
217. Blue color bags	A) Yes B) No
218. Needle cutter/burner	A) Yes B) No
219. Scissor	A) Yes B) No
220. Container for the non-infectious waste	A) Yes B) No
221. Buckets are overflowing?	A) Yes B) No
222. Waste cleared within 48 hours?	A) Yes B) No
223. Bins are cleared regularly?	A) Yes B) No
224. Waste is transported in closed containers?	A) Yes B) No
225. Waste is transferred in predefined route	A) Yes B) No
226. Needle cutter is in working condition?	A) Yes B) No
227. Barrel and plunger detached before disinfecting syringe	A) Yes B) No
228. Blood bags are punctured before disinfection	A) Yes B) No
229. Disinfection is done before disposal	A) Yes B) No

230. Liquid waste is treated with disinfectant before disposal	A) Yes B) No
231. The cloth used for wiping liquid waste was not reused without disinfecting	A) Yes B) No
232. The cloth used for wiping liquid waste was not used for any other purpose	A) Yes B) No
233. Gloves used while dealing with infectious waste	A) Yes B) No
234. Anatomical waste disposed in a deep burial pit	A) Yes B) No
235. Red/White bucket wastes are disposed in sharps pit	A) Yes B) No
236. Is there a bio medical waste disposal poster on top of containers	A) Yes B) No
237. Is there a Non infectious waste disposal poster on top of containers	A) Yes B) No
238. In the new born corner, do you collect different categories of bio medical waste in different color containers?	A) Yes B) No

239. Infection control

240. Do you keep the cheatle forceps in the savlon bottle	A) Yes B) No
241. How often do you change the savlon from the cheatle forceps bottle	
242. How frequently do you empty the suction jar?	
243. How frequently do you clean the radiant warmer	