Internship Training

At

CARE INDIA

(Jan 22 – May 01, 2014)

ASSESSMENT OF AVAILABILITY AND OF NEW BORN CORNERS IN AT PRIMARY HEALTH CENTERS OF Nawada, BIHAR

By

Rajeev Sagi

PG/12/071

Under the Guidance of

Vanishree M.R

Post Graduate Program in Hospital & Health Management

(2012-14)

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH NEW DELHI

TO WHOMSOEVER MAY CONCERN

This is to certify that Rajeev Sagi 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 from 27-01-2014 to 01-05-2014.

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.

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The certificate is awarded to ***Rajeev Sagi*** in recognition of having successfully completed his internship in the department of ***Strengthening of Kala Azar elimination Project.*** He has successfully completed his Project **on** ***Assessment of availability and functionality of New Born Care Corner at Primary health centers across District Nawada.***

Date of completion: 01/05/2014

Organization: Care India Solutions for Sustainable Development

He comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning. We wish him/her all the best for future endeavors.

Sharad Chaturvedi
(Program Manager)
Care India, Bihar

FEEDBACK FORM

Name of the Student: Rajeev Sagi

Dissertation Organisation: CARE, INDIA.

Area of Dissertation: Assessment of availability and functionality of new born corners in primary health centres of Nawada, Bihar.

Attendance: 100%

Objectives achieved:

Facility assessment done using the Facility Assessment tool. Gaps identified with the help of standard guidelines. Suggestions given to fulfil these gaps.

Deliverables:

1. IRS monitoring in different blocks of Nawada.
2. Conducted community awareness meeting regarding Kala-Azar at village level in different blocks, Nawada.
3. Involved in drafting the Micro plan for the district for the IRS activity.
4. Participated in Monthly review meetings at the District health society, Nawada
5. Conducted training of the Block Managers regarding the usage of facility assessment tool.
6. Participated in various HSC meetings in different blocks of Nawada.
7. Liaisoning with various government stakeholders and other development partners working in Nawada.
8. Participated in Block Level Task Force meeting regarding Immunization by UNICEF & Health Department.

Strengths:

Good communication skills & presenting skills, punctual, hardworking, deadline oriented, innovative and open for learning

Suggestions for Improvement:

Needs to improve his local language skills for better communication with the local communities.

Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation)

Date: 02-05-2014

Place: **Bihar**

Certificate of Approval

The following dissertation titled **Assessment of availability and functionality of new born corners in primary health centers of Nawada, Bihar** is hereby approved as certified study in management carried out and presented in a manner satisfactory 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	Name of the Student
1)	DR. S. B. ARORA	Rajeev Sagi 07/05/2014
2)	Dr A. K. KHOKHAR	7.5.14.
3)	Dr. Radhika S. Adholeya	Adholeya

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

08/5/2014

Dean, Academics and Student Affairs
Professor
IIHMR, New Delhi

Kusta Udapa

IIHMR, New Delhi

ACKNOWLEDGMENT

We take this opportunity to express our profound gratitude and deep regards to our Mentor Mr. Sharad Chaturvedi and Dr. Sarwar Khan for their exemplary guidance, monitoring and constant encouragement throughout the course of this Dissertation. 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 Director Dr. L.P.Singh, Dean Dr. A.K.Aggarwal and our mentor at IIHMR Dr. Vanishree M.R for giving us a constant support during our entire period of dissertation.

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 Dissertation 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 Operations and Human resource team. What we had learned will be engraved into our heart for us to go a great distance in the journey about to come.

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LIST OF ABBREVIATONS

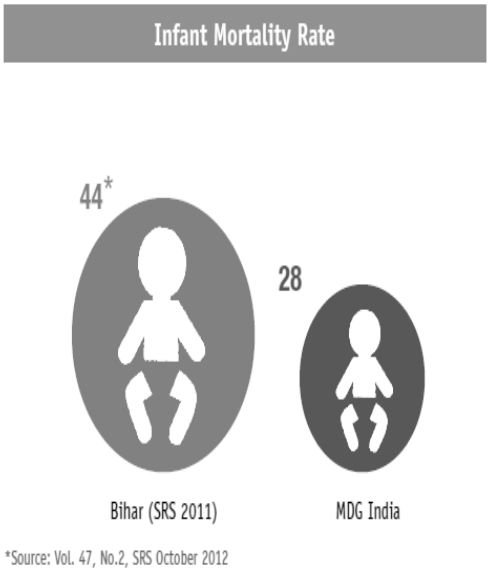
Sr.No	Abbreviation	
1	IMR	Infant Mortality rate
2	U5MR	Under 5 Mortality rate
3	NMR	Neonatal Mortality Rate
4	MDG	Millennium Development Goals
5	JSY	Janani Suraksha Yojna
6	FBNC	Facility Based Neonatal Care
7	SNCU	Special New born Care Unit
8	NBSU	New Born Stabilization Unit
9	NBCC	New Born Care Corner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

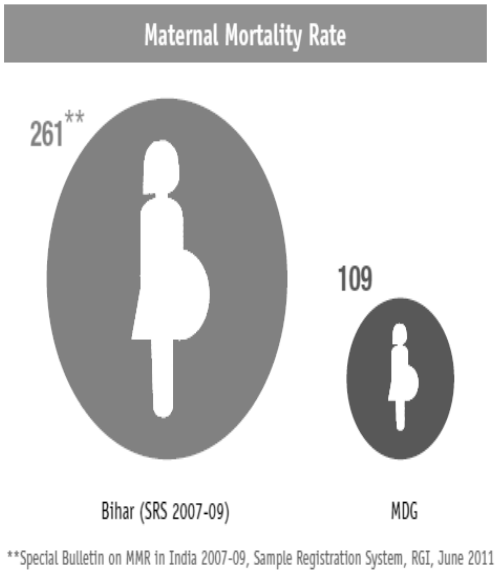
1.0 Introduction

1.1 Background:

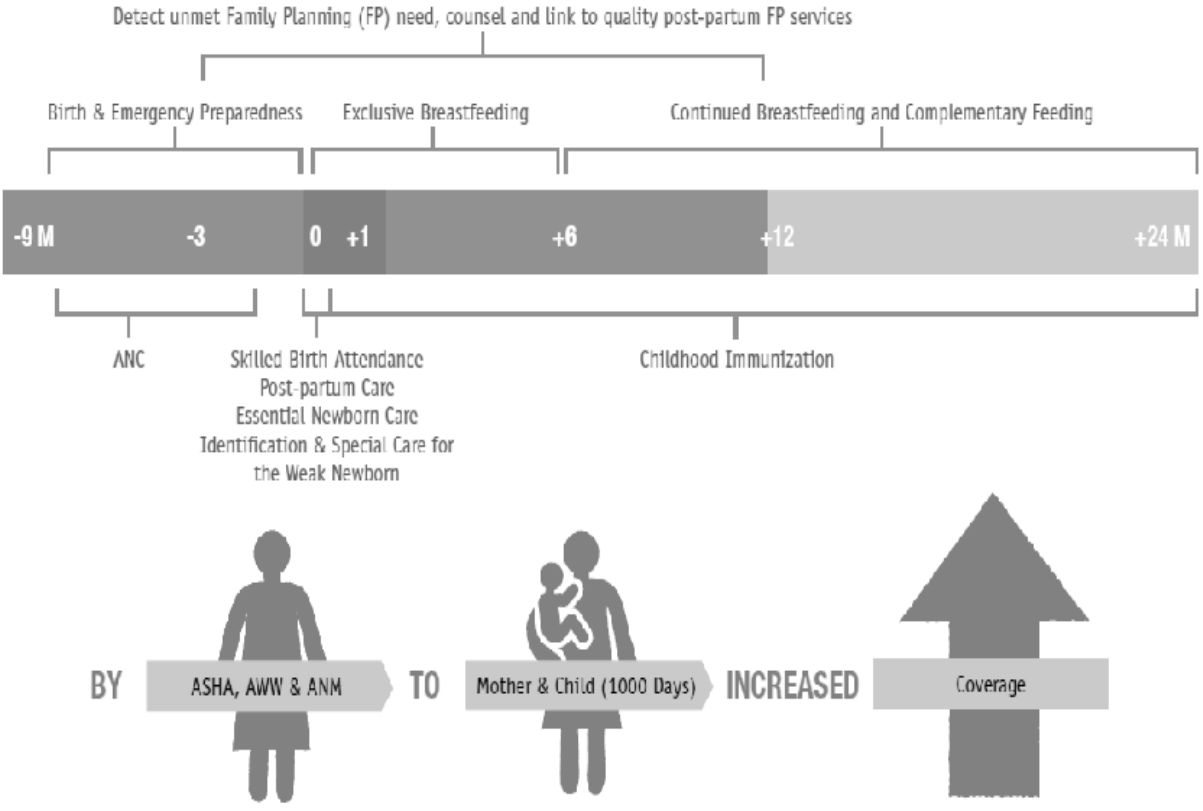
Bihar is one of India's largest and poorest states with over 100 million people. The state has one of the country's highest rates of maternal, neonatal and infant mortality. Underlying factors that contribute to these negative health outcomes primarily include extreme poverty, gender and social inequality 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 centers, 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.

With the time running out and considering we are still far behind from achieving the Millennium Development Goals, Care India with support from the Bill and Melinda Gates Foundation started a program titled Integrated Family Health Initiative (IFHI). As part of this program Care India will support the Government of Bihar to improve health outcomes, build leader and ownership towards these services. The main of this approach is to accelerate the progress towards the achievement of MDG 4 to reduce child mortality and MDG 5 to improve maternal health.





Integrated Family Health Initiative (IFHI) is a multiyear initiative lead by Care India with initial focus in eight districts within Bihar, now in a scale up mode to all the 38 districts in Bihar. IFHI partners include Janani, Columbia University, Emory University and Save the children/ Saving new born lives. 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.



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.

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.

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.

Immunization Intervention:

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

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

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.**

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.

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.

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.

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.

Creating partnerships with private sector providers

a) Increase access and quality of services through private providers:

A network of selected private health care facilities with adequate delivery case load and having qualified health care providers has been identified and IFHI has signed a memorandum of understanding with them. The quality improvement process is being implemented through training of relevant facility staff to improve the quality of care of Comprehensive Emergency maternal Obstetric Neonatal Care (CEmONC) and family planning services at these network facilities. The impact of the intervention is measured through DOD.

New Born Corner:

This is a space within the delivery room where immediate care is provided to all newborns. This area is MANDATORY for all health facilities where deliveries take place.

India accounts for 30 per cent of the neonatal deaths globally. In India, the neonatal mortality rate is 37/1,000 live births. Most of these deaths occur within the first days of life: 46.2 per cent occurring in the first two days of life and 73.3 per cent taking place within the first week of life.

Thus, serious, concerted efforts have to be made to address the needs of a newborn in its first days in order to reduce neonatal mortality in India.

Newborn care corner provides an acceptable environment for all infants at birth. Services provided in the Newborn care corner include;

- Essential Care at birth
- Resuscitation
- Provision of warmth
- Early initiation of breastfeeding
- Weighing the neonate

Item No.	Item Description	Essential / Desirable	Quantity
1.	Open care system: radiant warmer, fixed height, with trolley, drawers, O2-bottles	E	1
2.	Resuscitator, hand-operated, neonate, 500ml	E	1
3.	Weighing Scale, spring	E	1
4.	Pump suction, foot operated	D	1
5.	Room Thermometer	E	1
6.	Light examination, mobile, 220-12 V	D	1
7.	I/V Cannula 24 G, 26 G	E	
8.	Extractor, mucus, 20ml, ster, disp Dee Lee	E	
9.	Towels for drying and wrapping the baby	E	
10.	Sterile equipment for cutting and tying the cord	E	
11.	Tube, feeding, CH07, L40cm, ster, disp	E	
12.	Oxygen cylinder 8 F	D	
13.	Sterile Gloves	E	

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 labor 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-center, and then the auxiliary nurse midwife (ANM) must also receive NSSK training.

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

Rationale:

As per the norms of the government of India a New born care corner is mandatory in 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 77/1000 live births. In Nawada district the IMR is 49, NMR 31 and U5MR 61 per 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.

Review of Literature:

- Krishna Kumar Sahu et al conducted a cross sectional facility based survey from Oct 2011 to March 2012 at six Bal Mahila Chikitsalyas (BMCs) in Lucknow district. 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. [1]
- Linda Vesel et al in 2012 conducted a study on Quality of new born care: a health facility assessment in rural Ghana using survey, vignette and surveillance data. The study was conducted seven districts in Brong Ahafo 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. [2]
- 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. [3]

- 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. [4]
- 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. [5]
- Sutapa B Neogi in 2013 conducted a study 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. [6]

- In April 2009 to March 2010, Sumit Malhotra 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 thermometers 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 were 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 was 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 personnel's. [7]

- Leif Eriksson et al in 2008 conducted a study on Evidence-based practice in neonatal health: knowledge among primary health care staff in northern Viet Nam. The study was conducted in 18 hospitals and 187 community health centres. This study shows according to Guidelines of reproductive health (2003) by the Ministry of Health in Viet Nam availability of infrastructure were as follows: Soap 100% (18) hospitals & 94% (175) CHCs, Clean gloves 100% (18) hospitals & 97% (181) CHCs, Clean water 100% (18) hospitals & 81% (151) CHCs, Alcohol for disinfection 94% (17) hospitals & 95% (178) CHCs, Iodine for disinfection 100% (18) hospitals & 92% (172) CHCs, Antibiotics 100% (18) hospitals & 99% (185) CHCs, Forceps 44% (8) hospitals & 2% (3) CHCs, Vitamin K 67% (12) hospitals & 11% (21) CHCs, Radiant heater 89% (16) hospitals & 11% (21) CHCs, Towels for new born 78% (14) hospitals & 38% (71) CHCs, Thermometer 100% (18) hospitals & 99% (185) CHCs and Face mask and ambo for new born 89% (16) hospitals & 10% (18) CHCs. [8]
- In September 2013, VIMARSH consultancy group conducted study on EVALUATION OF COMPREHENSIVE CHILD SURVIVAL PROGRAMME UNDER NRHM IN UTTAR PRADESH. The study was conducted in 17 districts of UP. The total sample covered for the study was 8256. The sample comprised of 7491 Eligible Women, 340 ASHA, 340 ANM, 34 MOICs, 17 ACMO (RCH)/Nodal Officer CCSP, 17 DPM (NRHM) and 17 District Level Trainers (paediatricians). According to this study only 58.4% of total respondents have been counselled by ASHAs on Kangaroo Mother Care whereas for immunization it is 92.7% of the respondents interviewed told that they were counselled by ASHA regarding immunization of new born. 98.5% respondent stated that mother's milk is the best food for baby. In response to breastfeeding practices, 79.5% women reported that they have given colostrums to new born and 79.3% stated that they exclusively breastfed infants for first six months or are exclusively breastfeeding their

babies. Nearly, 52% respondents informed that their infants fell sick during first two months. It is important to state here that only 12.3% infants have been treated at government run hospitals, private hospitals in this regard accounted for 74.4%. For remaining 13.3% infants, treatment was reportedly given at home. 79.1% cases ASHA's provide home base new born care. It was reported by some of the ASHAs that many health facilities are running with poor infrastructure. They reported that there is no regular supply of electricity, lack of safe drinking water, lack of proper sitting arrangements, unhygienic toilets, dirty room & galleries etc. Some health facilities are running in rented buildings, which are in poor condition & need repair. Poor infrastructure is one of the major reasons why people do not prefer to get treatment done at government run health facilities, as reported by ASHAs. NBCC are established in majority of the BHPC/CHC. It is observed during the visits to BHPC/CHC that though NBCC are established, these are not fully functional. There are only few equipment and some medicines available. In few cases it has been observed that 20 items required as per guidelines for NBCC have not been received. Radiant warmers in few BHPC were found to be non-functional; instead 200 watts bulbs were being used. Moreover it is further observed that height of the bulb had been kept very low as against norm of 60 cms height. As per CCSP Protocol, no records of sick children treated in these NBCC are available. No records are being kept for which life support services (resuscitation) have been provided. Referral cases are not being recorded or followed up at BHPC/CHC. Availability of trained staff is another big issue at BHPC/CHC. In few BHPC/CHC, MOICs were not aware of the basic requirements for NBCC. At few BHPC/CHC, it has been also observed that material received for NBCC had been lying unpacked. [9]

- Zakir Husain, 2011; in association with the Population Research Centre, Institute of Economic Growth, Delhi on Health of National Health Rural Mission. Data from the health ministry reveals that 11% of the PHCs do not have a doctor (this is 17% in high focus states). At the CHC level, only 49% of the required specialist posts have been sanctioned so far, and 25% positioned. Less than a third of the required number of staff nurses has been positioned. None of the PHCs surveyed in Shrawasti (UP) had oxygen cylinder, infant warmer, baby cradles and laryngoscope. Shortage of baby cradles & laryngoscope seen in Sidhi district of MP. [10]

Objectives

a) General objective:

To assess the availability and functionality of new born corners in primary health centers of Nawada district in 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 fulfill these gaps.

Methodology:

STUDY AREA:

The study was conducted in Nawada district of Bihar, having population of 2,059,179.

STUDY DESIGN:

A Cross-Sectional study was conducted in between 1st February 2014 to 30th April 2014.

Up till 20th March a thorough review of literature was done with the help of various national and international studies and a quantitative questionnaire was designed using close ended questions regarding the general conditions of infrastructure in new-born care corner, electricity & illumination of NBCC, hygiene practices in facilities, protocols followed in facilities, human resource in facilities, Essential Surgical Equipments, Essential Equipments, IV Fluids & Antibiotics, Essential Drugs, Biomedical Waste Disposal.

Data was collected between 24th March 2014 to 10th April 2014 and after that data was compiled and analysed with the help of facility assessment tool developed by CARE, INDIA.

STUDY SAMPLE:

There are 14 PHCs available in Nawada district. For this study all those 14 PHCs were taken as sample.

SAMPLING TECHNIQUE:

For collecting the sample convenient sampling was used because the major constraint while collecting the data was the election time & ongoing IRS round so it was bit difficult to leave the district and go to other district for data collection. Though it was difficult for travelling from one block to other at that time but 9 PHCs were covered that is present in Nawada district.

STUDY RESPONDENTS:

ANM, BHM, MOIC

METHODS OF DATA COLLECTION:

A structured pre tested facility assessment tool was used to collect the data.

TOOL:

-For Primary data collection a quantitative questionnaire was used using closed ended questions. The questionnaire covered the information on infrastructure of the NBCC, equipment's of NBCC, hand wash facilities in NBCC, emergency drugs availability in NBCC, biomedical waste management & infection control. A minimum of 20 minutes time was spent on each respondent and before filling the questionnaire consent was taken with the respondents that their identity and name will not be disclosed.

-Secondary data taken from internet source & other related studies done before in 8 Intervention districts & Nawada district regarding IFHI by CARE, INDIA. The data collected by secondary sources was to know more about the NBCC. This mainly covers the instruments needed for NBCC, drugs required for the NBCC, infectious & non-infectious waste material disposal, hygiene practices in the NBCC, breastfeeding & kangaroo mother care, IV fluids & essential drug availability in NBCC etc.

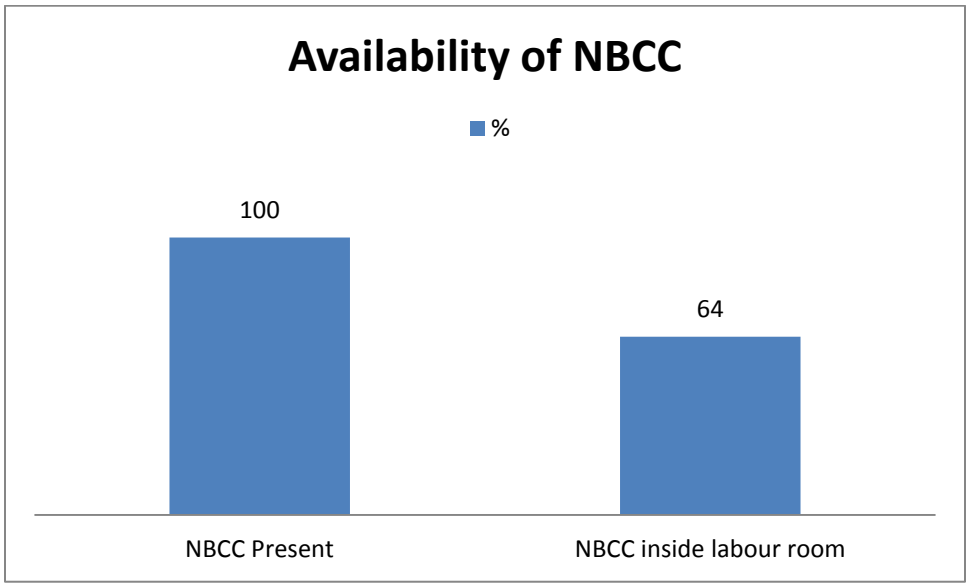
-Data Analysis was analyzed with Facility Assessment Tool & Microsoft Excel sheet.

STUDY PERIOD:

27th January 2014 to 30th April 2014.

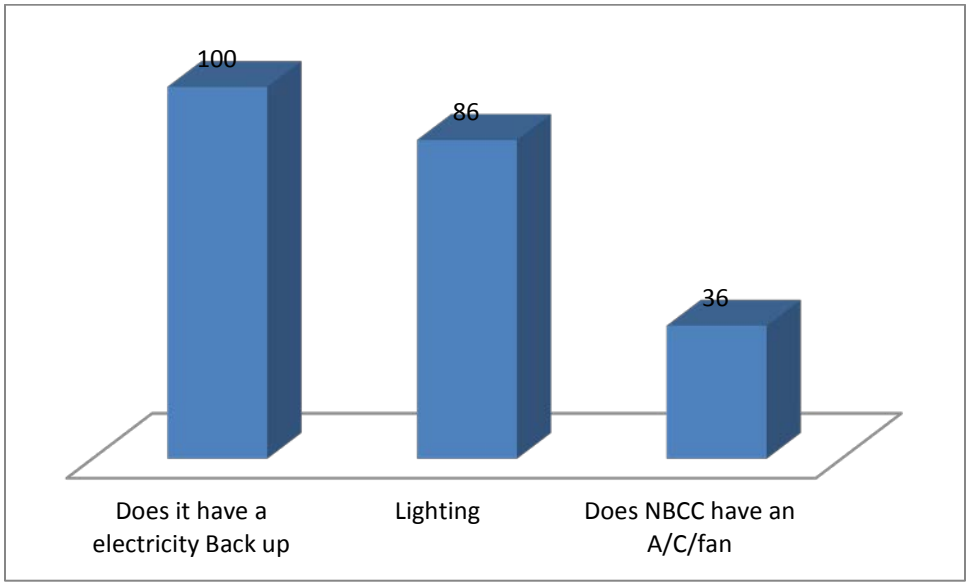
Data Analysis and Interpretation

Availability of New Born Corner Facility



All the PHC have the newborn care corner out of which 60% i.e. 9 out of 14 have it inside the labor room.

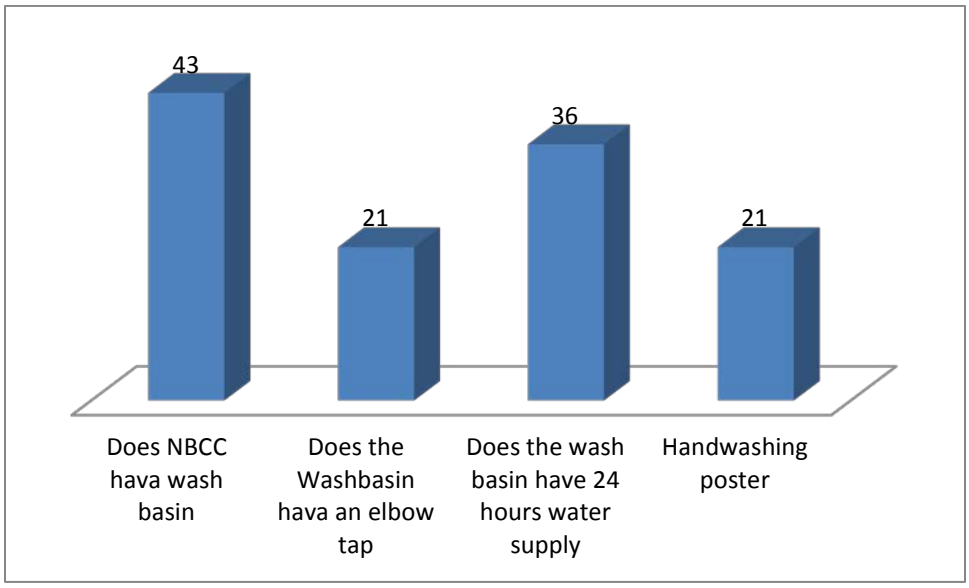
Backup, Ventilation and Lumination



All the facilities have some form of back either in the form of an generator or inverter, the lightning sources that have assessed is either they have a CFL or a Blub or a Tube light. For

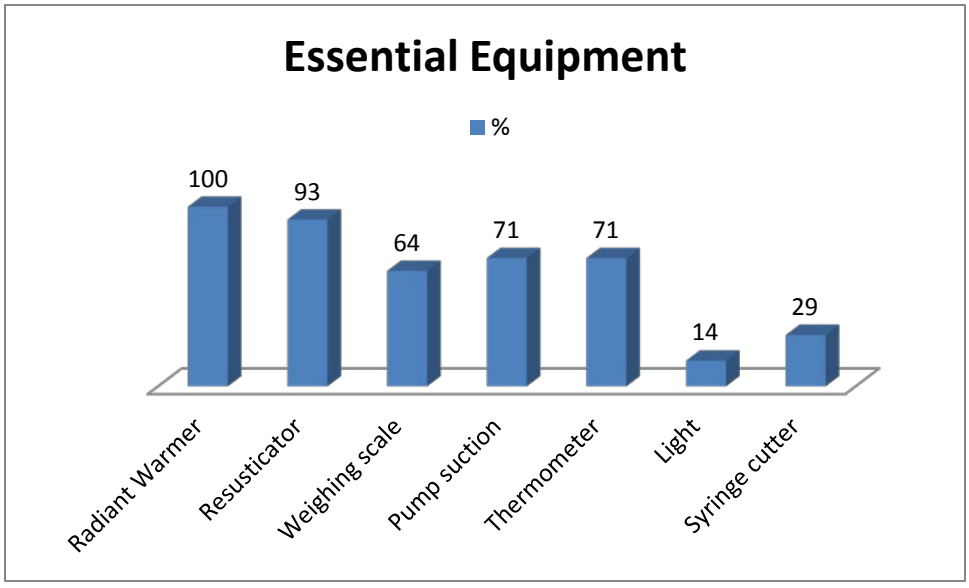
ventilation we assessed if there is an A/C or a Fan or both. 86 percent facilities have one source of lighting, whereas only 36% facilities have a fan or an A.C.

Hand Washing Facility



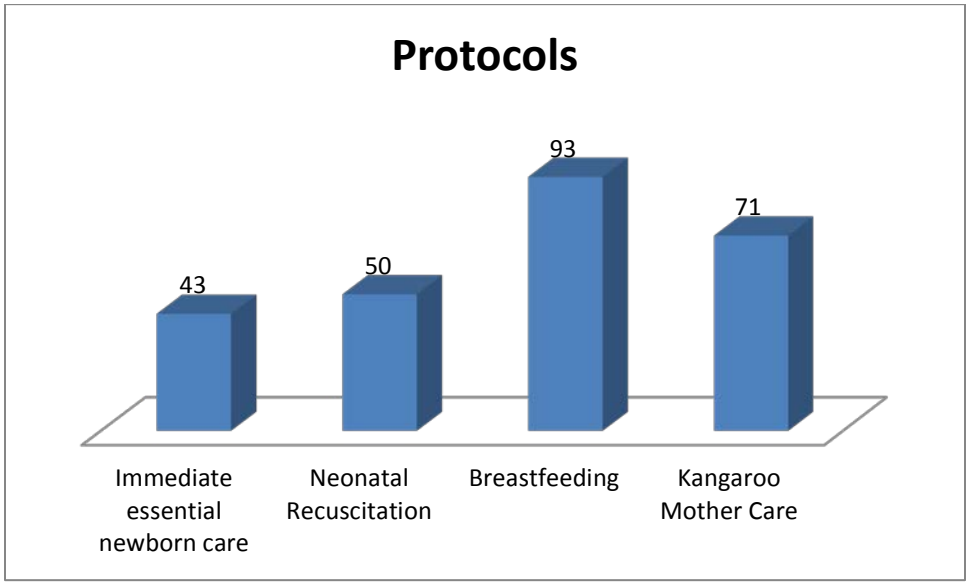
For the hand washing indicators we assessed is there was a wash basin, if there was 24 hours water supply, and if they have hand washing poster. Only 21 percent wash basins had an hand washing poster and the same is with the elbow tap

Essential Equipment



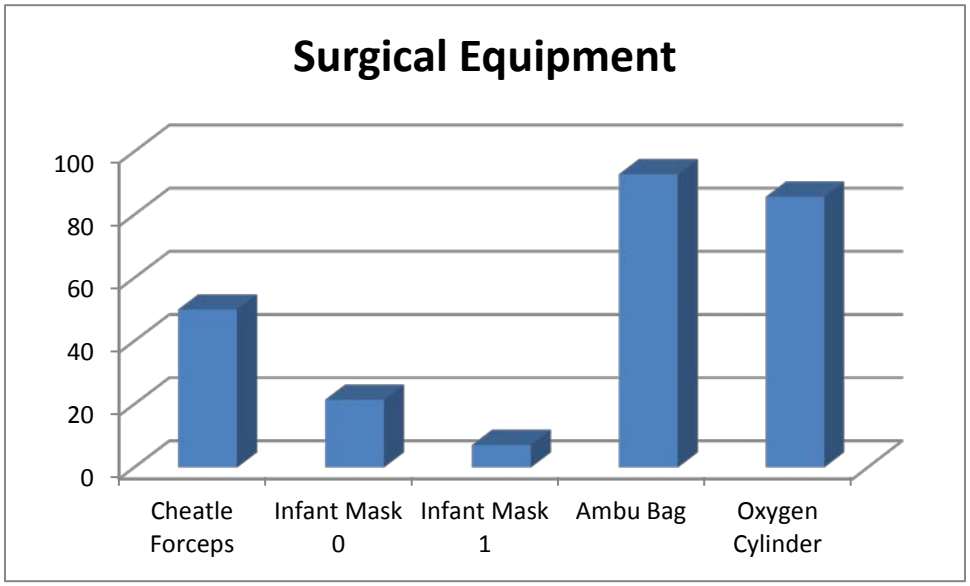
The essential equipment list was taken from the new born corner guidelines by the USAID. Most of the facilities lack the facility of light and syringe cutter. Radiant warmer was present in all the facilities; Ambu Bag is present in all but one facility. Light for examination is present in only 14 percent and syringe hub cutter is preset in only 29 percent facilities.

Protocols



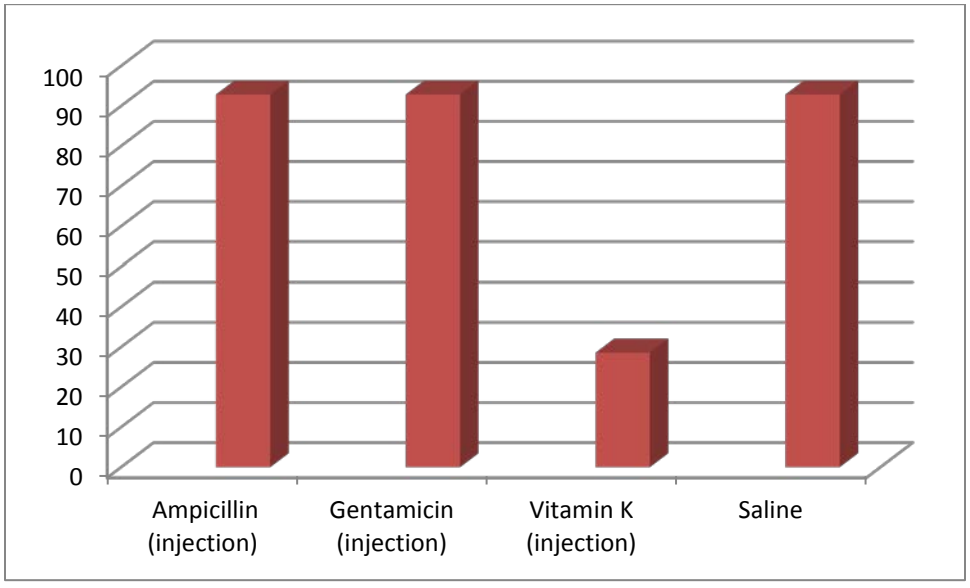
The 4 protocols that were assessed were the immediate essential new born care, neonatal resuscitation, Breastfeeding and Kangaroo Mother Care. Breastfeeding is the most commonly available protocol, where immediate essential newborn care is the least available one.

Surgical Equipment



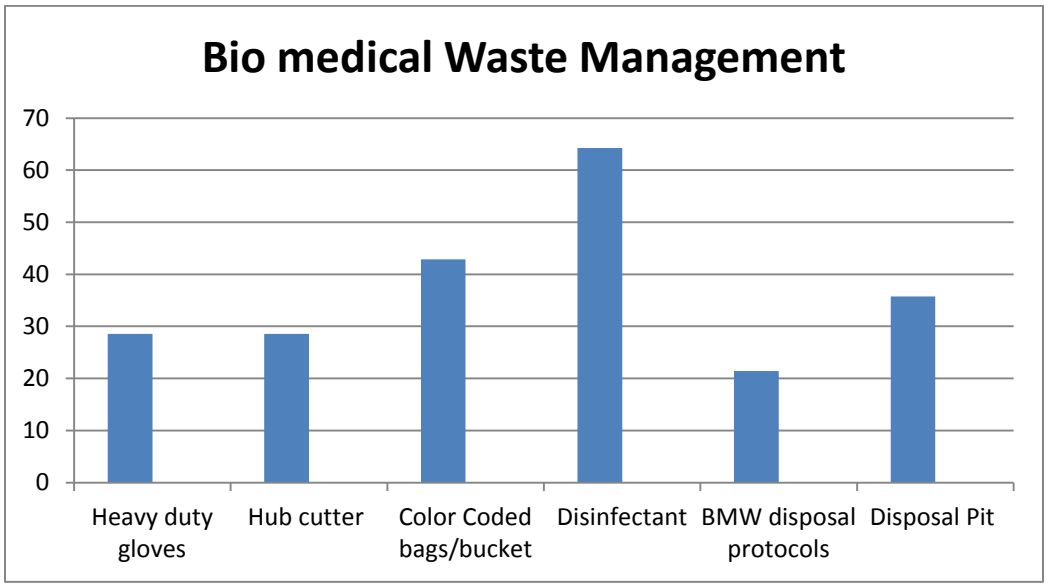
Most of the facilities lack infant mask and cheatle forceps. AMBU bag was present in all the facilities. Oxygen Cylinder is also present in all the facilities.

Emergency Drugs



With exception of Vitamin K almost all the facilities have the remaining essential emergency new born drugs.

Bio medical Waste Management



Bio medical waste handling and knowledge was assessed and plotted on the above graph. There were no heavy duty gloves, hub cutter, protocols and disposal pits.

Findings

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 labor room of all the health facilities and should be equipped with all the essential equipment. However, as per the study conducted, only 67 percent facilities have a new born corner inside the labor room.

Wall SN et al conducted a study on reducing intra partum-related neonatal deaths in low- and middle-income countries which stated that in many resource-poor or low-income countries, especially in sub-Saharan Africa, the lack of these essential supplies poses a major barrier to performing effective newborn resuscitation, therefore this issue needs to be addressed urgently. The study also stated that the success of newborn resuscitation depends upon the knowledge and clinical skills of birth attendants as well as access to basic equipment and it was found that a large proportion of the Nurses had comparatively better knowledge than Doctors in all the health facilities. Even in this study we can see the lack of basic essential equipment in most of the PHCs, there was a lack of established protocol for biomedical waste management and infection control.

As stated by Deorar AK et al in their study , training of the healthcare providers in neonatal resuscitation practices has led to a shift to more rational practices which have ultimately led to a decline in asphyxia related neonatal mortality. However as the study most of the PHCs lack the protocols for immediate essential new born care and other emergency procedures.

In a study that was conducted in rural Ghana it was found that there was reliable electricity in 30% of the facilities and 48% have oxygen cylinder, on the contrary in Nawada, all the facilities have reliable electricity back up and 80% of the facilities have a oxygen cylinder.

In a 2013 study conducted by S.B.Neogi et.al in Newborn corners across bihar it was found that only 12% of the PHCs were good in infrastructure, 68% performed poorly for equipment. The similar findings were found in Nawada. The district mirroring the state in the matters of new born care.

According to the study on Assessment of Essential New born Care Services in Secondary-level Facilities from Two Districts of India; conducted by Sumit Malhotra et al. 76% NBCC got resuscitation, thermometers were present half of the NBCC but room thermometer was absent in all NBCC. Infant- weighing scale was available at most facilities. Disinfectants, disposable syringes and needles were available in almost all the NBCC. Resuscitation bags with masks were available in four out of six facilities. Different sizes of masks were not available. Oxygen supply was present in most facilities, and suction devices were present and functional in all facilities. Drugs like ampicillin, gentamicin, adrenaline, aminophylline & vitamin k were available in all facilities. In nawada resuscitators were present on 93% of the facilities, whereas the findings were similar, with availability of oxygen cylinder and essential and emergency drugs uniformly across the PHCs.

"A study on Evidence-based practice in neonatal health: knowledge among primary health care staff in northern Viet Nam" conducted in the year 2008 by Leif Eriksson et al report that availability of infrastructure were as follows: Alcohol for disinfection 94% (17) hospitals & 95% (178) CHCs, Iodine for disinfection 100% (18) hospitals & 92% (172) CHCs, Antibiotics 100% (18) hospitals & 99% (185) CHCs, Forceps 44% (8) hospitals & 2% (3) CHCs, Vitamin K1 67% (12) hospitals & 11% (21) CHCs, Radiant heater 89% (16) hospitals & 11% (21) CHCs, Thermometer 100% (18) hospitals & 99% (185) CHCs and Face mask and ambo for new born 89% (16) hospitals & 10% (18) CHCs.

Similarly forceps were present in 44% of the facilities; Radiant warmer was present in 90% of the facilities. While on the flipside disinfectant was present only in 45% of the facilities, Vitamin K in only 30% of the facilities and thermometer in only 45% of the facilities.

Limitations:

1. Lack of time, as it was only three months, in which a lot of time was spent in getting acclimatized to the place.
2. Ongoing IRS round, as we have to monitor the ongoing IRS round, hence has to divide time between both.
3. Lack of budget and resources
4. Election time in the state, due to phase wise elections and neighboring districts having the elections in different dates there was a problem with the transport and other locomotory issues.

RECOMMENDATION

- A rate contract to be made for the equipment that is not present and tenders to be floated and the equipment to be acquired on high priority basis.
- For the equipment that is not functioning repairs and maintenance to be undertaken
- Annual maintenance contract to be renewed and be in place to reduce the downtown of the equipment.
- RKS funds and untied NRHM funds can be utilized to meet urgent needs such as medicines; surgical equipment's & other needed entities.
- Competency base training of all staff can be done. This is a cost effective way of training and it will reduce overall cost of the training.
- Inventory control and supply chain management should be done and the BHM should be trained in these fields, to prevent stock outs
- Stock sharing and equipment sharing should be in place inside the district, for this a centralized database is to be maintained
- Infection control and biomedical waste management should be taken care of
- An external agency can be hired to train the staff in bio medical waste management, infection control and quality management.
- Micro plan to be developed for the things that are to be implement and a stricit timeline to be adhered to.
- This GAP analysis is to be repeated on a periodic basis to see the progress and to come with new gaps.

CONCLUSION

Newborn care corners are the small spaces inside the labor room, that are essential for providing care to the new born effected by Asphyxia, or the babies who have not yet started crying. It is a very low cost setup, and does not need heavy manpower too. It needs a Radiant warmer, a phototherapy machine, resuscitator, a weighing scale, Thermometer. The essential medicines that were required were Ampicillin, gentamycin and Vitamin K. There is a requirement of either a ANM or a Grade A nurse to be present round the clock. An electric backup is required round the clock to run the equipment.

The main concept of this new born corner is that the Golden Minute and the Golden Hour can be saved so as to ensure that the neonate is saved. This is of major importance as NMR contributes to 2/3 of the IMR; hence saving the life's here will help India achieve its MDG5. As it is a low cost facility and very reliable, efforts should be taken to establish it across all the facilities where deliveries will take place. Apart from the equipment and manpower another major part of NBCC is the availability of protocols for Essential immediate new born care, Kangaroo mother care and breast feeding. This will also help in reducing the Neonatal Mortality Rate.

As it is evident form the study even though all the PHCs have a new born corner only 67 percent have them inside the labor room. Having a NBCC inside the labor room is of outmost importance as saving the golden hour and golden minute is of the highest priority. Hence it is one major area to concentrate on.

Of all the essential equipment required only radiant warmer is the one that is present uniformly. Weighing scale, syringe hub cutter and light were absent in most of the PHCs. A lot of PHCs even do not have Annual Maintenance contract. Of the essential drugs that were required for the new born care Vitamin K was absent in most of the PHCs.

On the manpower front, even though all the PHCs have a Grade A nurse or a ANM, the question to ponder over here is whether they are skillful enough to handle the equipment, drugs and protocols. Protocols were not being followed in all the PHCs, emphasis should be made and documented protocols to be made available at all the PHCs and care to be taken to see that the protocols are being implemented properly.

So, in spite of having a NBCC in all the PHCs, due to lack of equipment, essential drugs and skilled manpower the care required was not being provided. There was no infection control practice and the protocols for biomedical waste management are also not being followed in the PHCs.

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Annexure:

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	