Assessment of NBCC in Public Health Facilities of Kasganj District

By

Sucheta Sharma

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2018-2020

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Dr Sucheta Sharma

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Table of Content

7. **CHAPTER 7: Challenges**

8. **CHAPTER 8: Recommendations**

Abbreviations

BPHC	**Block Primary Health Center**
CHC	**Community Health Centre**
FRU	**First Referral Unit**
NBCC	**New Born Care Corner**
NBSU	**Newborn Stabilization Unit**
SNCU	**Sick Newborn Care Unit**
FBNC	**Facility Based Newborn Care**
NSSK	**Navjaat Shishu Suraksha Karayakaram**
F-IMCI	**Facility Integrated Management of Childhood Illness**
HBNC	**Home Based Newborn Care**
INAP	**Indian Newborn Action Plan**
LBW	**Low Birth Weight**
IMR	**Infant Mortality Rate**
NMR	**Neonatal Mortality Rate**
U5MR	**Under 5 Mortality Rate**
HR	**Human Resource**
SN	**Staff Nurses**
MO	**Medical Officer**
MOIC	**Medical Officer Incharge**

State Profile of Uttar Pradesh

FIGURE 1: Map of Uttar Pradesh

History:

Uttar Pradesh is the Northern province of India. It was made in first April 1937. The kingdom is isolated into 18 divisons and seventy-five districts with the capital being Lucknow. It covers 243,290 square kilometers (ninety-three, 933 square meter), equivalent to 7.34% of the absolute region of India, and is the fourth-largest Indian kingdom by means of territory.

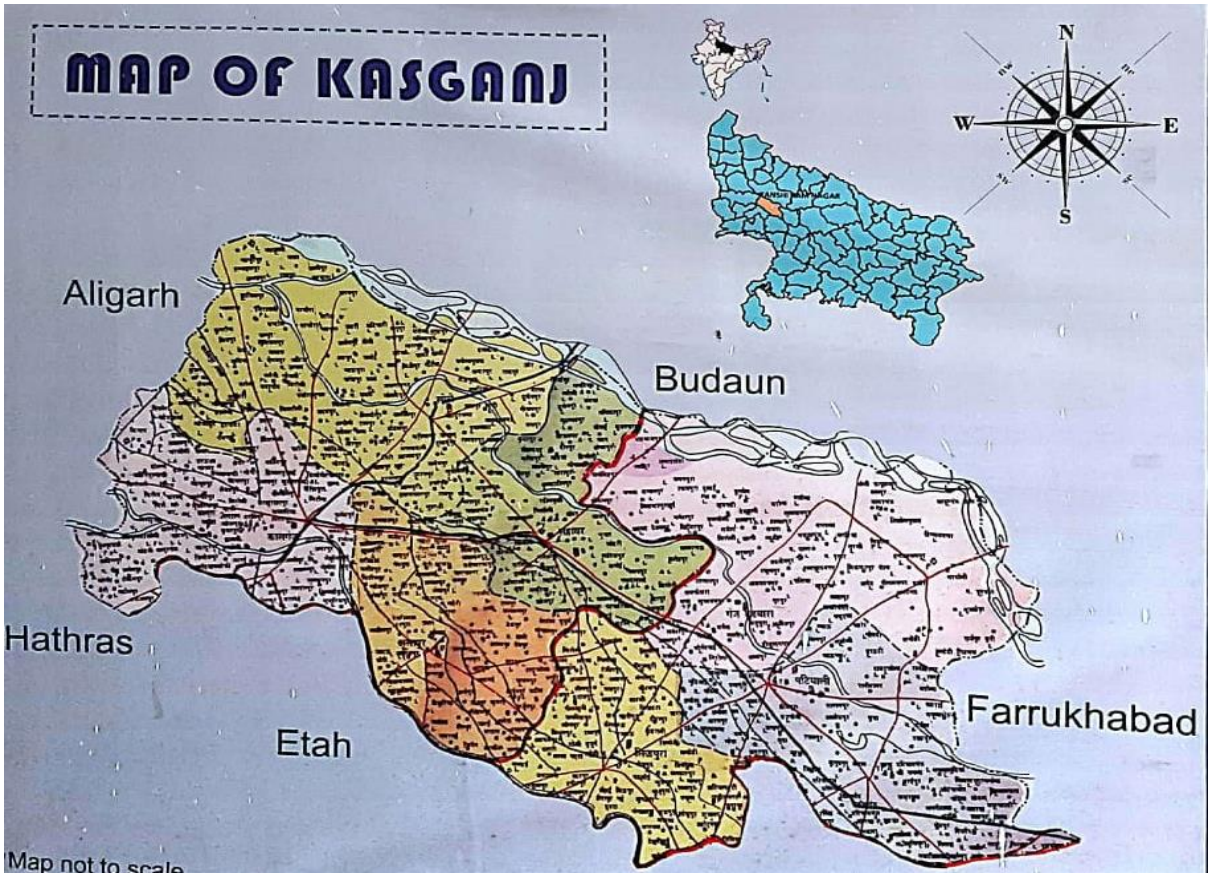
Health status of Uttar Pradesh:

Around 42 percent of pregnant ladies, more than 1.5 million, deliver infants at domestic. Around 66% (61 percent) of labors at home in Uttar Pradesh are unsafe. State has the maximum noteworthy kid mortality markers, from the neonatal demise charge (NNMR) to the below-five death tempo of 64 kids who kick the bucket consistent with 1,000 stay births earlier than five years antique, 35 chunk the dust internal a month of beginning, and 50 don't end a time of life. 33% of the rustic populace within the nation has been denied of vital human services framework, as indicated through the standards of the Indian Public Health Standards

Table 1: Health Indicators of India and U.P.

Health Indicators	**India**	**U.P.**	**Source**
IMR	41 per 1000 live births	64 per 1000 live births	NFHS 4
NMR	23 per 1000 live births	30 per 1000 live births	SRS Bulletin 2017
ENMR	18 per 1000 live births	23 per 1000 live births	SRS Bulletin 2017
U5MR	50 per 1000 live births	78 per 1000 live births	NFHS 4
MMR	122	216	SRS Special Bulletin on Maternal Mortality in India (2015-17) released on November 2019
Birth rate	20.6 per 1000 population	25.9 per 1000 population	SRS Bulletin 2017
Death rate	6.3 per 1000 population	6.7 per 1000 population	SRS Bulletin 2017

About Kasganj District:



Kasganj (Map source: District Hospital Kasganj) region is a locale of the Indian state Uttar Pradesh. It is situated in the division of Aligarh and comprises of Kasganj, Patiali and Sahawar tehsils. Its base camp is at Kasganj. The kasganj Block is set up in 26/01/1956. The Soron Block is set up in 02/10/1958. The Patiyali block is built up in 02/10/1957. The Ganjdundwara is built up in 01/04/1959. The Sidhpura block is built up in 02/10/1959. The Amanpur block is set up in 01/04/1960

CHAPTER 1

INTRODUCTION

1.1 ABSTRACT

Neonatal mortality in India is high (25-30% of worldwide NMR) and stale. There has been an expanded accentuation on institutional conveyances, which request in progress in office based infant care and customer fulfillment. (S B Neogi et/al,2011) Public offices give infant care at each purpose of labor. Infant Care Corner (NBCC) at each purpose of labor, Newborn Stabilization Unit (NBSU) at network wellbeing focuses, Sick Newborn Care Unit at region medical clinics. SNCU and NBSU are not accessible at each office to give brief consideration to the infant. The point of the examination was to survey the preparation of NBCC in general wellbeing offices of Kasganj locale of U.P. (FBNC Guidelines and MNH Toolkit).

The examination was led in the general wellbeing offices (PHC, CHC, CHC-FRU, DWH) of Kasganj locale, U.P. Boundary chose for study were foundation, accessibility of medications and consumables, accessibility and usefulness of equipment's, survey of records, human asset and contamination control. Information was gathered in the organized perception instrument.

According to the information, the study was directed in the Kasganj locale of U.P. Considering eight offices the investigation uncovers that 12.25% offices were having devoted MO for NBCC. 25% MO and 12.8% SNs are NSSK prepared. Brilliant hotter isn't working in 38% of offices. Just 25% offices have Isolyte P medicate accessible in NBCC. half of the offices are having autoclave accessible. Out of 8 offices just 2 offices are autoclaving the hardware's on regular routine. 6 offices were having NBCC register accessible. Inherent confirmation rate is around 30%. More prominent number of male children are conceded than female infants. 65-75% of confirmations in NBCC were of LBW chased after by birth asphyxia 25% and perterm 10%. Documentation record register isn't kept up in Sidhpura and Patiyali squares.

NBCC is the basic speculation to decrease neonatal death rate in India. It isn't about foundation of NBCC, it is critical to keep up their presentation. Evaluation of NBCC shows that it is critical to fortify the NBCC of Sidhpura and Patiyali squares.

1.2 BACKGROUND

"An expected 130 million children are brought into the world every year" comprehensively and out of that in the neonatal period around, 4 million of them kick the bucket. "Neonatal passings are expanding as an extent of youngster passings. A large portion of the neonatal passing happen in Low-and Middle-salary nations proportion is about 99% (Lawn JE et.al, 2005). 90% inclusion has been evaluated by the "blend of effort and network care mediations" and it stay away from 18 to 37% of global passings.

In India, 26 million infants brought into the world consistently and out of that 940,000 neonates kick the bucket before finishing their one month of life. The neonatal period is 28 days with a neonatal death rate (NMR) of 30/1000 live births (SRS Bulletin 2017), neonatal demise add to around 66% of newborn child passings (Infant Mortality Rate) 41/1000 live births (NFHS4) and "about portion of the considerable number of passings in kids more youthful than 5 years" old enough (Under 5 death rate) 50/1000 Live births (NFHS 4). Baby Mortality Rate has declined in India from 58/1000 live births in 2004 to 41/1000 Live births in 2020 However, there is moderate advancement in decrease of NMR which declined from 37/1000 live births in 2004 to 23/1000 live birth. Decrease in death in the main seven day stretch of life has indicated least advancement. U.P is a condition of northern India with most noteworthy populace with IMR 64/1000 live birth, NMR 30/1000 Live births. Preventable morbidities, for example, hypothermia, asphyxia, disease and respiratory trouble keep on being the fundamental driver of mortality in neonatal period.

In the wake of propelling of the "National Rural Health Mission (NRHM) in 2005, the infant care became focal concentration to the youngster wellbeing procedure of the administration". Some mediation under National Health Mission concentrating on infant, for example, Janini Suraksha Yojanan (JSY) and Janini Shishu Suraksha Karyakram (JSSK) lead to increment institutional conveyances. The turn out of Home-Based Newborn Care (HBNC) has likewise prompted expanded contact with infant at their family units and improved identification and referral of debilitated babies to wellbeing offices. Uniting this all has brought about expanded number of wiped out babies introducing to referral clinics. Administration conveyance of infant care including fundamental and wiped out infant care has discovered ailing in region and sub area level. FBNC has huge power for improving infant endurance." It has been anticipated that intercession in wellbeing office can diminish neonatal mortality by as much as 25-30%.

NMR among the infants, who was conceded diminished by 14% in the primary year and after SNCU became practical NMR decreased by 21% in the subsequent year. At the populace level this was evaluated to prompted decrease in NMR by ~ 10% in the area in 2 years. (Sen An et.al,2009).

Primary driver revealed for neonatal mortality was preterm (40.8%), intra partum entanglements (27%), innate confusion (10.6%), sepsis (8%), others (7.3%), pneumonia (4.8%), lockjaw (1%) loose bowels (0.3%) (Oza et al, 2016). Very nearly 3 million children can be spared by office based or locally established infant care. On the off chance that every single demonstrated intercession are actualized adequately than 70% passings could be forestalled with high inclusion.

In India, general wellbeing offices gives Facility Based Newborn Care (FBNC) under NHM by building up "NBCC Newborn Care Corner" at each conveyance purpose of labor, NBSU "Infant Stabilization Unit" at referral unit, SNCU "Debilitated Newborn consideration Unit at locale Hospitals and NICU "Neonatal Intensive Care Unit" at each tertiary level for careful intercessions.

In the event of institutional conveyances remain of mother and child is 48 hours, it is normal that care for the infant during this period must give in the foundation. Following 48 hours when child come back to home, the infant has crossed the basic first day, however there is as yet the token of the main week and month during which neonatal mortality could be as high as 54% and for which care must be given. As this period is basic any disease during this period bring about the infant passing at home except if the child is given fitting consideration or alluded to an office that is prepared to treat wiped out new brought into the world Home Based Newborn Care should be accessible as huge extent of mother after conveyance like to get back with in scarcely any hours (HBNC Guidelines).

"Fortifying of the clinical administrations inside the medicinal services framework accordingly a truly necessary and dismissed part of thorough mediation for diminishing neonatal demise.

CHAPTER 2

LITERATURE REVIEW

India shares a solitary biggest portion of 25-30% of neonatal passings on the planet and with in the initial 2 days of life half neonatal demise happens. Around 4 million infants pass on every year worldwide in the principal month after birth and India alone records for 0.76 billion neonatal passings. Significant reasons of neonatal demise are birth asphyxia, sepsis, LBW and rashness. The worldwide predominance of LBW neonates is 15.5% and in India 27% of live births are LBW. LBW involves 1/third of confirmation, half of perinatal and 1/third of neonatal passings (Shaziya et al, 2016). The best accomplishment of life sparing mediation happen when, medical clinic and network based exercises are interlinked. Whenever demonstrated mediations are actualized around 70% of passings can be forestalled adequately with high inclusion. These mediations included elite bosom taking care of, warmth and avoidance of contamination. 90% inclusion has been surveyed by the "mix of effort and network care mediations" and it stays away from 18-37% of neonatal passings. These intercessions incorporate family care of infant, basic infant care, revival of infant, care of LBW and crisis infant care.

On eighteenth sept 2014, India Newborn Action Plan was propelled in light of worldwide infant activity plan.

"INAP spreads out a dream and an arrangement for India to decrease preventable infant passings, quicken progress and scaleup high effect yet practical mediations. INAP has an unmistakable vision bolstered by objectives, vital intercession bundles, need activities and a checking structure." It is normal that all partners progressing in the direction of improving infant wellbeing in India and achievement of the objective of single digit NMR by 2030 and single digit despite everything birth rate by 2030. For accomplishing this objective GoI center around reinforcing of office based infant care, government give infant care focuses in all the conveyance focuses for example NBCC is required for all wellbeing offices where conveyances are led.

In the event that we explore the history, the consideration of powerless and debilitated infants in the offices started in the mid 1960's in scarcely any showing clinics and built up their neonatal nurseries; nonetheless, the extension of these administrations was postponed until 1980s (Mehrban Singh et.al,1997). During 1990 to 2000, nation perceived the significance in general wellbeing offices. Under a national program, the mediation for basic infant care including bosom taking care of, warmth, neatness and cleanliness was presented at various degree of wellbeing framework. This bundle was extended at both network level and institutional level under NRHM in 2005 (Siddhartha Ramji et.al, 2013). In 2003 the primary unit was built up in Purulia area of West Bengal. With the assistance of neighborhood staff

and authorities of UNICEF the main unit was built up and known as Sick Newborn Care Unit (Sen An et.al, 2015).

One investigation detailed deficiency of equipment's, fundamental medications and poor contamination avoidance in open clinics of congo and demonstrated lack of staff in open hospitals of congo (Sara E casey et.al, 2009).

CHAPTER 3

INTRODUCTION OF NBCC

NBCC is the space inside the conveyance room in any wellbeing office where quick consideration is given to all the infant during childbirth. This zone is compulsory for all the wellbeing offices where conveyances are led.

Anticipated that administrations should be given at NBCC are Prevention of disease, Provision of warmth, Resuscitation, Early inception of bosom taking care of, gauging the infant, breastfeeding and taking care of help, Identification and brief referral of 'in danger' and 'debilitated infant' and Immunization administrations.

For setting up of NBCC a region of around 20-30 sqft in size inside the work room is set up. For FRU's and District medical clinics, NBCC additionally arrangement in activity theater where C-areas are led. Basic gear's required for building up NBCC are Baby plate, Pediatric stethoscope, Baby scale, Radiant hotter, Self-swelling sack and veil size 0 and 1, oxygen hood neonatal, Laryngoscope, 2 arrangement of pencil batteries, Mucous extractor, Foot worked pull machine, Blanket, 2 spotless and dry towels, taking care of cylinders, void vials for blood assortment, Alcohol hand rub and thermometer.

Cost for setting up for NBCC 105000 rupees, which incorporate 85000 rupees one-time cost and 20000 running expense.

For NBCC one committed SN and One devoted Doctor is allocated for legitimate working of NBCC. All specialists and medical caretakers who are directing conveyances must be prepared in Navjaat Shishu Suraksha Karayakaram (NSSK). On the off chance that NBCC is set up at sub focus the ANM (Auxillary Nurse Midwife) should likewise get NSSK preparing.

NSSK preparing is basic for SNs, specialists, ANM who are leading conveyances since Birth Asphyxia is an immediate significant reason for neonatal demise alongside preterm birth and serious diseases. NSSK is a program in fundamental infant revival, anticipation of hypothermia, counteraction of contamination, early commencement of bosom taking care of and outfits the staff with fitting information and ability to give basic infant care in essential consideration settings.

Record keeping of each conceded infant is recorded in a standard configuration. Standard case definition would be utilized for recording the clinical condition among conceded infant cases. Utilization of standard definition would guarantee that the information is substantial dependable and tantamount. In light of the case record unit will produce the report, utilizing a standard announcing configuration and submit to the area. The area will send the grouped report, to applicable state wellbeing specialists and to the state communitarian focuses. The information gathered by all the regions will be sent by state to RCH division at the focal level. (Office Based Newborn Care Operation Guide, Guideline for Planning and Implementation 2011)

CHAPTER 4
RESEARCH QUESTION, OBJECTIVE and METHODOLOGY

4.1 Research Question:

What gaps are to be full filled to strengthen the existing Newborn Care Corners in public health facilities of Kasganj district of U.P.

4.2 Objectives for assessment of Newborn Care Corners:

4.2.1.1 General Objective:

- To assess the NBCC in Kasganj district of U.P.

4.2.1.2 Specific Objectives:

- To assess the human resource of NBCC.
- To assess the availability of essential equipment's in NBCC.
- To check the record register of NBCC.
- To assess the availability of drugs in NBCC.
- To make recommendations to strengthen NBCC in Kasganj district of U.P.

4.3 RESEARCH METHODOLOGY

4.3.1.1 Study Design:

A cross sectional study involving the functional NBCC in 7 blocks of Kasganj district of U.P was done.

4.3.1.2 Study Area:

TABLE 2: Study Area

Level	Health Facility	Newborn care facility
District	District Women Hospital	NBCC
Block	CHC-FRU Kasganj	NBCC
Block	CHC Soron	NBCC
Block	CHC Ganjdundwara	NBCC
Block	BCHC Sidhpura	NBCC
Block	BCHC Amanpur	NBCC
Block	CHC Sahawar	NBCC
Block	CHC Patiyali	NBCC

4.3.1.3 Duration of Study:

Study was conducted for 3 months period of dissertation 3rd Feb 2020 to 3rd May 2020.

4.3.1.4 Tools and Techniques of Data Collection:

Primary data collection was collected using a structured questionnaire from all the public health facilities of Kasganj district.

4.3.1.5 Sample Size:

Study has been conducted in all eight NBCC facilities namely district hospital, CHC-FRU, CHCs and BPHCs.

4.3.1.6 Method of Data Collection:

Data collection was carried by observation technique and interviewing SNs and MOICs of the health facilities through structured questionnaire.

CHAPTER 5

STUDY FINDINGS

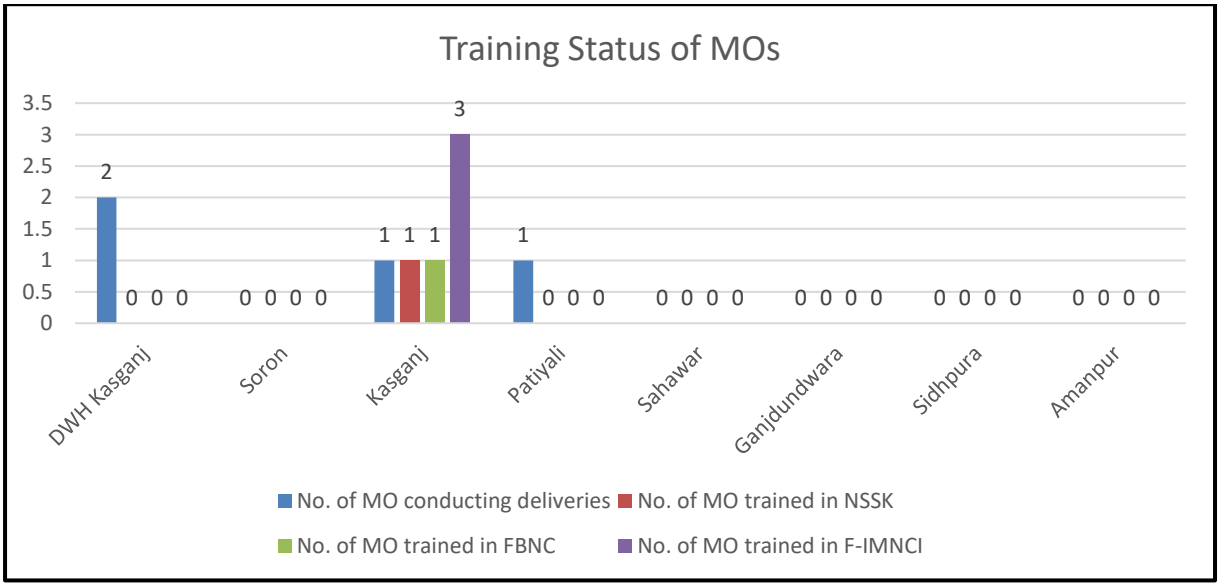
5.1 ASSESSMENT OF HUMAN RESOURCE IN NBCC:

TABLE 3: Human resource in NBCC

	Number as per standard	Availability	Gap
Medical Officer	1 per facility, Total 8	1	7
Staff Nurse	1per facility, Total 8	0	8

According to FBNC guidelines one doctor and one staff nurse should be designated to NBCC to ensure appropriate functioning of NBCC. But on assessment it was found that out of 8 facilities only 1 facility is having designated MO for NBCC and out of 8 facilities none of the facilities have designated SN for NBCC. Out of 8 facilities in Kasganj district only 1 facility i.e. CHC-FRU Kasganj have one designated doctor for NBCC.

5.2 ASSESSMENT OF TRAINING STATUS OF MEDICAL OFFICERS:

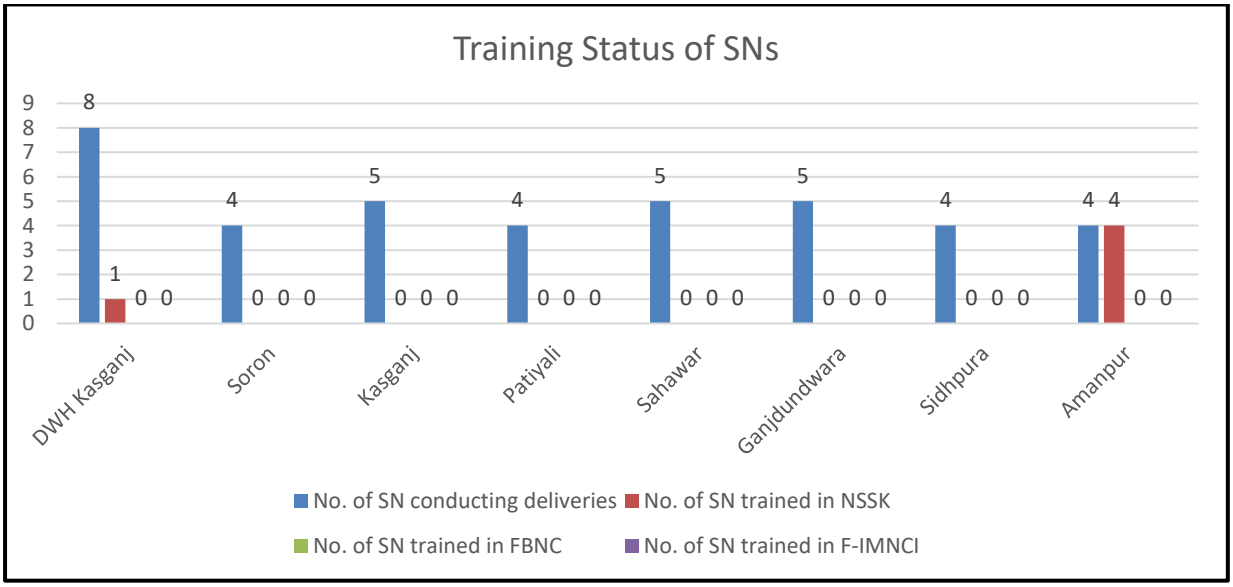


GRAPH 1: Training Status of Medical Officers

According to FBNC guidelines all the MO who are likely to attend deliveries must be trained in NSSK. In DWH Kasganj two medical officers are conducting deliveries but none of them is trained in NSSK. In CHC-FRU Kasganj all the medical officers are in NSSK along with

FBNC and F-IMNCI. In CHC Patiyali one medical officer is conducting deliver but she is not trained in NSSK.

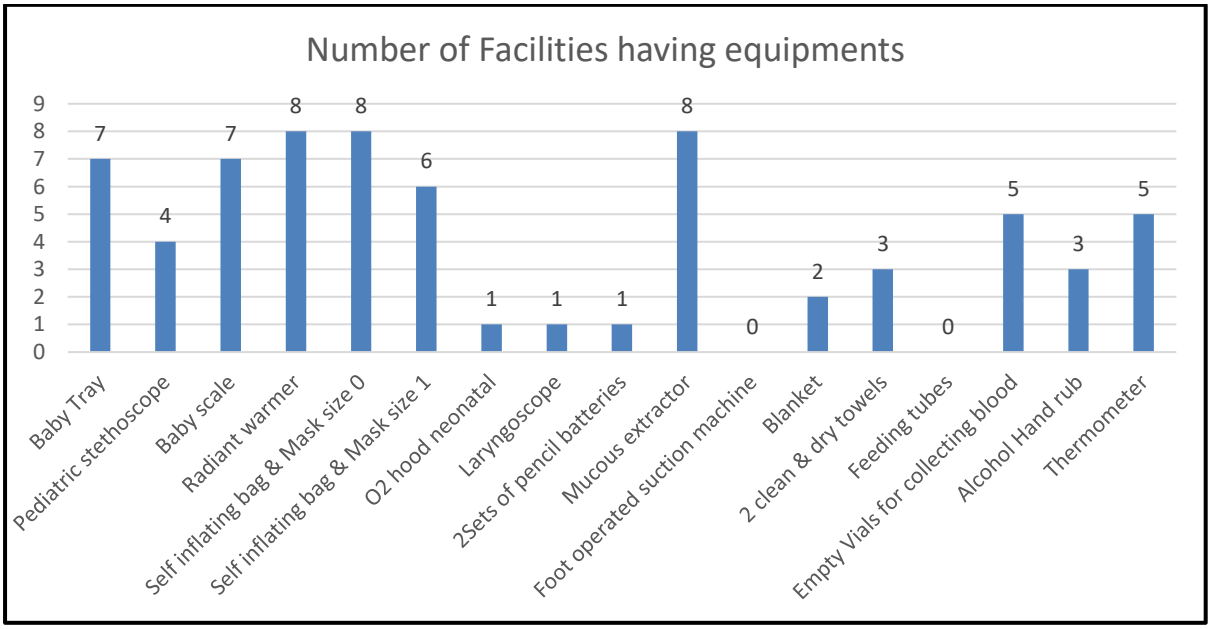
5.3 ASSESSMENT OF TRAINING STATUS OF STAFF NURSES:



GRAPH 2: Training Status of Staff Nurses.

On assessment it was found out that in DWH Kasganj out of eight staff nurses who are conducting deliveries, only one staff nurse is trained. In Soron, Patiyali, Sahawar, Sidhpura and Kasganj blocks none of the staff nurses are trained in NSSK. In Amanpur block all the staff nurses are trained in NSSK.

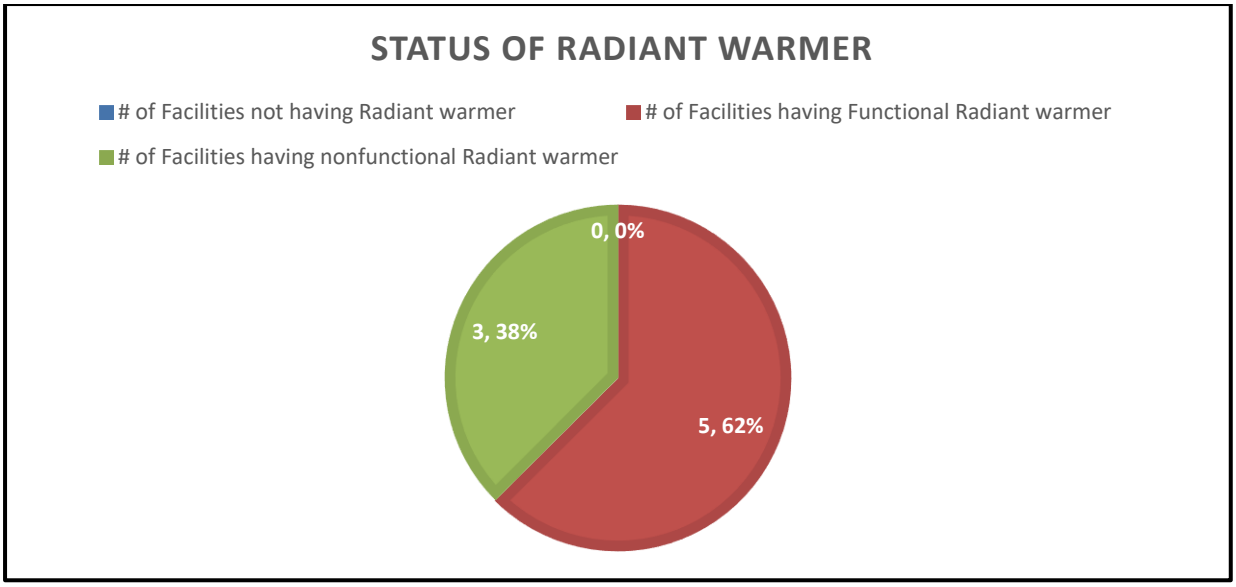
5.4 ASSESSMENT OF EQUIPMENT AVAILABILITY IN NBCC:



GRAPH 3: Equipment availability in facilities.

According to MNH Toolkit, 17 equipment's are essential for proper functioning of NBCC.Out of 17 essential equipment's only 3 equipment's are available in all the 8 facilities of Kasganj district. This 3 equipment's are Radiant warmer, Self-inflating bag and mask size 0 and mucous extractor.

5.5 ASSESSMENT OF FUNCTIONALITY OF RADIANT WARMER:



GRAPH 4: Functional status of Radiant Warmer.

This figure shows that out of 8 facilities of Kasganj district 5 facilities have functional radiant warmer and 3 facilities have nonfunctional radiant warmer. These 3 facilities are CHC Soron, BPHC Amanpur and CHC Ganjdundwara.

EQUIPMENT BREAKDOWN RATE:

TABLE 4: Equipment Breakdown Rate

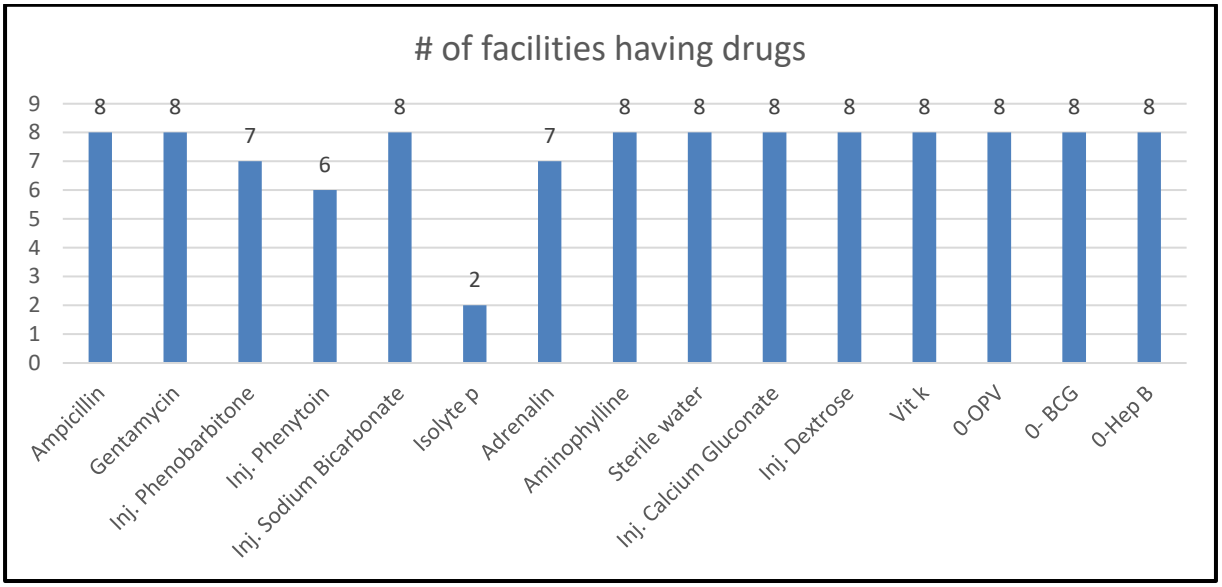
Block	No. of days radiant warmer remain nonfunctional in a month	Equipment breakdown rate in each month
Soron	30	1
Amanpur	30	1
Ganjdundwara	10	0.33

Equipment breakdown rate is calculated by (Number of days breakdown each month/total day in use).

In CHC Soron and BPHC Amanpur radiant warmer was nonfunctional in the past 4 months. In CHC Ganjdundwara radiant warmer was nonfunctional from last 10 days.

So, equipment breakdown rate came out to be 1 for both Soron and Amanpur and 0.33 for Ganjdundwara.

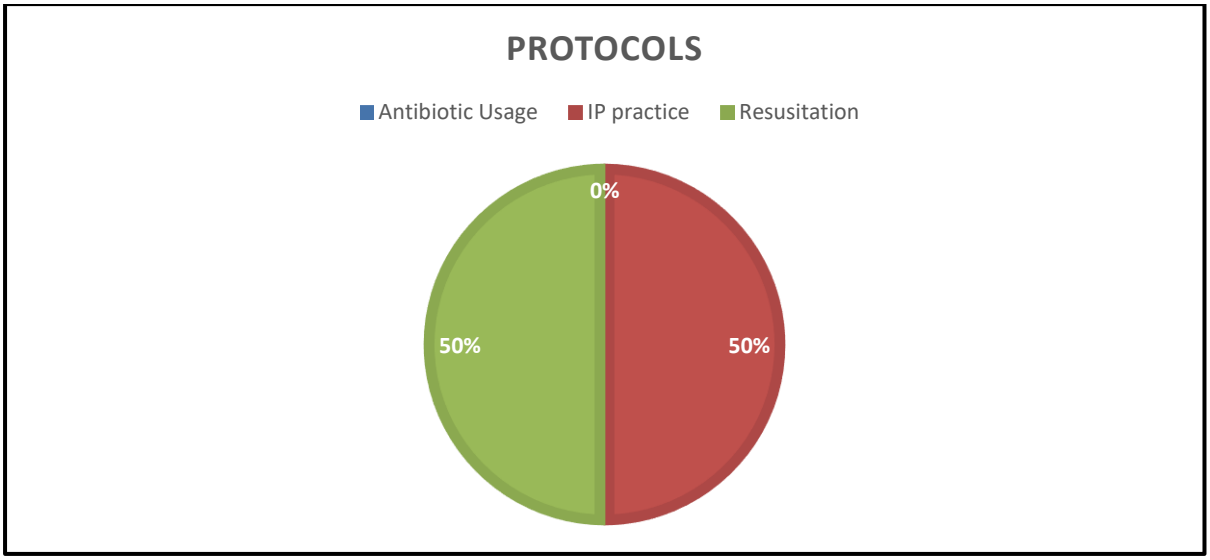
5.6 ASSESSMENT OF AVAILABILTY OF DRUGS:



GRAPH 5: Availability of drugs

Out of 15 essential drugs 11 drugs are available in all the 8 facilities. Isolyte P is available only in 2 facilities CHC-FRU Kasganj and CHC Ganjdundwara. Adrenalin and Phenobarbitone is not available in CHC Sahawar. Phenytoin is not available in CHC Sahawar and CHC Ganjdundwara.

5.7 ASSESSMENT OF PROTOCOLS:



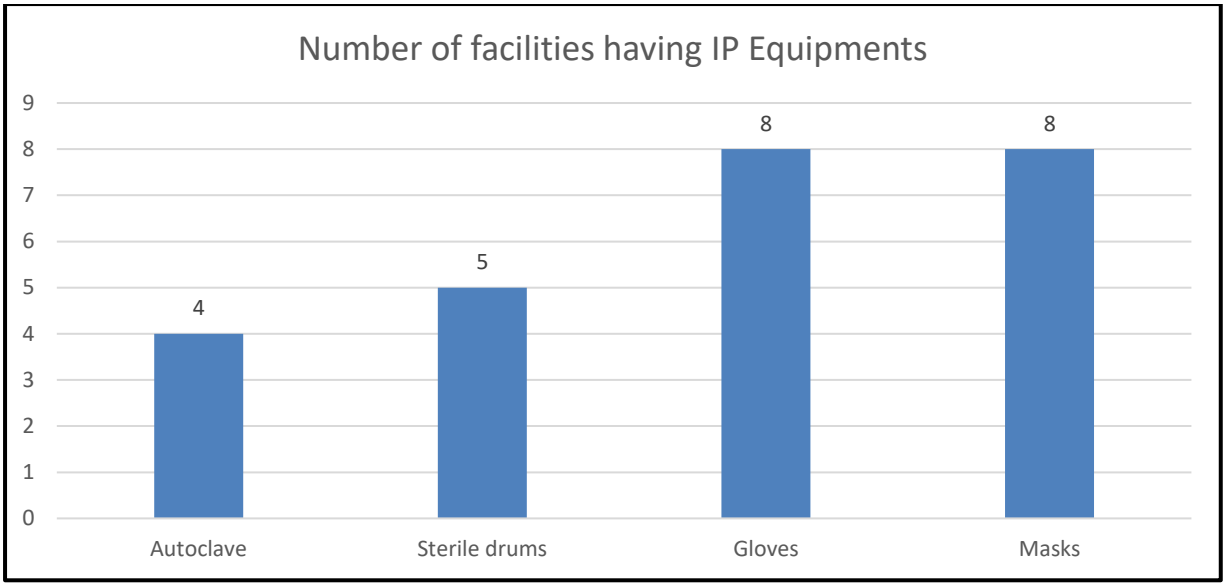
GRAPH 6: Protocols posters displayed

All the facilities were having IP Practice protocols and resuscitation protocols displayed.

Out of 8 facilities none of the facility were having antibiotic usage protocols displayed.

5.8 ASSESSMENT ON INFECTION PREVENTION:

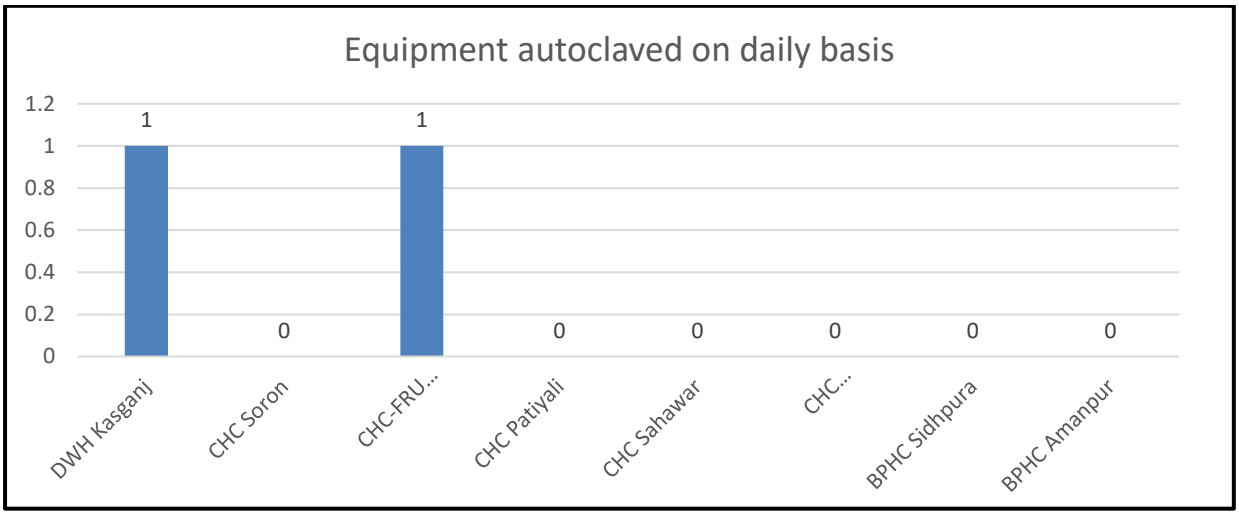
Availability of equipment's:



GRAPH 7: Availability of IP equipment's

All the facilities were having gloves and mask for staff usage. 50% of facilities were having autoclave and out of 8 facilities 5 were having sterile drums to keep the sterilized equipment.

Autoclaving of equipment's:



GRAPH 8: Autoclaving of equipment's on daily basis.

In DWH Kasganj and CHC-FRU Kasganj autoclaving of equipment's are done on daily basis. In CHC Patiayali autoclaving of equipment's are not done on daily basis even after having autoclave. In CHC Sahawar autoclaving of equipment's is not done because autoclave is nonfunctional.

5.9 ASSESSMENT OF RECORD REGISTER:

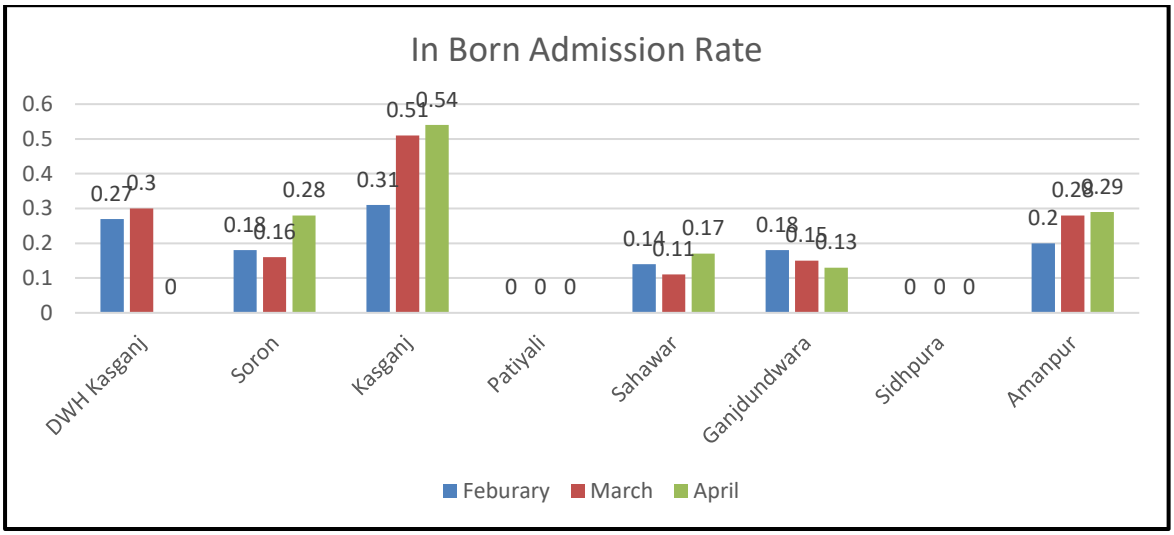
Availability of NBCC Register:

TABLE 5: NBCC Register Availability

Name of Facility	NBCC Register	Records updated till April 2020.
DWH Kasganj	Yes	Yes
CHC-FRU Kasganj	Yes	Yes
CHC Soron	Yes	Yes
CHC Ganjdundwara	Yes	Yes
CHC Sidhpura	Yes	No
CHC Sahawar	No	Yes
CHC Patiyali	No	No
BPHC Amanpur	Yes	Yes

CHC Sahawar and CHC Patiyali was not having NBCC register and both these facilities were maintaining records in a separate register. CHC Sidhpura. BPHC Sidhpura have the NBCC register but the record was not updated.

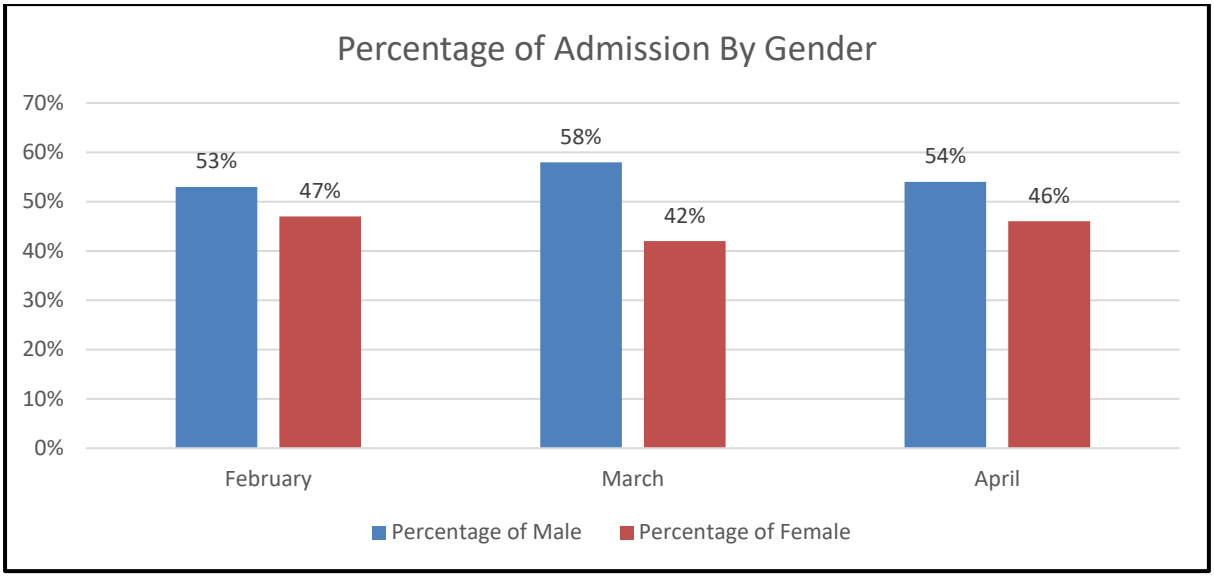
In Born Admission Rate:



GRAPH:9 Inborn Admission Rate in NBCC

Inborn admission rate is calculated by (total number of inborn babies admitted/ total number of live births). This gives us the proportion of inborn admitted in the NBCC unit. In DWH Kasganj and Amanpur block the proportion of inborn admission is around 0.3 means about 30% babies are admitted in NBCC either due to birth asphyxia, LBW or hypothermia. In Soron, Ganjdundwara and Sahawar the proportion of inborn admission is around 0.2 means around 20% babies are admitted in the NBCC. In CHC-FRU Kasganj proportion f inborn admission rate is highest among all the blocks. It is around 0.5 (50%).

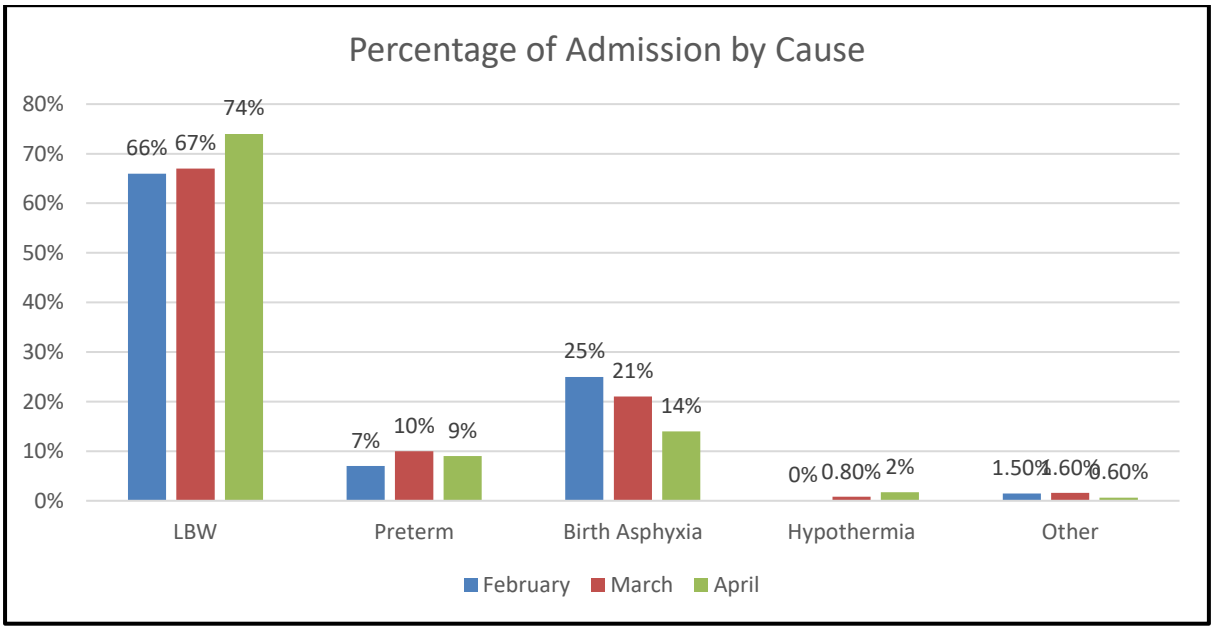
Admission by Gender:



GRAPH: 10 Percentage of admission in NBCC by Gender

It is evident from the graph that in February, March and April a greater number of male babies are admitted in NBCC than female babies in all the blocks. Females are biologically stronger than male might be one of the reasons behind this.

Percentage of Admission by Cause:



GRAPH 11: Percentage of admission in NBCC by Cause

It is evident from the graph that out of total admissions in NBCC around 65-75% are of Low Birth Weight and around 15-25% are of birth asphyxia. These are the main causes of admission of newborn in NBCC. Preterm admission rate is around 10%. Admission rate of hypothermia and others is very minimal. Others include 3 cases of spina bifida, 5 cases of infection/sepsis.

CONCLUSION

In Uttar Pradesh majority of institutional deliveries are conducted in public health facilities. According to global review around 15-20% newborns require facility-based care. Thus, NBCC must be able to provide all basic services to stabilize the baby before referral in case of sick newborn.

It is clear from the study that there is lack of enough HR required in NBCC. NSSK training of all the staff who are conducting deliveries is not completed in all the blocks. All the essential 17 equipment's are not available in the NBCC. Radiant warmer is the essential requirement of NBCC, but radiant warmer of 3 blocks namely Soron, Ganjdundwara and Amanpur are not working properly.

Infection prevention is one of the most important requirements in the health setup. 50% of the blocks were not having autoclave to sterilize the equipment. 25% blocks are doing autoclaving of equipment on daily basis.

It is important to maintain the record register and documentation of the newborn who are admitted in NBCC. But 2 blocks Sahawar and Patiyali were not having any NBCC register. Sidhpura block was not updating the NBCC register on regular basis.

NBCC must be able to provide care to neonates to improve neonatal health indicators. Basic infrastructure including availability of equipment's and essential drugs must be ensured for quality service at NBCC. Quality indicators should be strictly adhered to provide best possible services. Institutional delivery should be encouraged to reduce birth related complications and associated mortality. Similarly, Aseptic procedure must be strictly followed to reduce sepsis and infection related mortality.

Periodic inspection and audit are required to assess the availability and functioning of these units. This will help in channelizing resources more efficiently.

CHALLENGES

- Staff Nurses especially night duty SNs forget or missed to fill the admission cases in NBCC register.
- Unavailability of baby clothes at block level facility.
- Staff Nurses do not record temperature of the newborn baby so, hypothermia cases are not identified.
- 3rd day follow up of the newborn is not done. So, the follow up column of the NBCC register is not filled by the staff nurses.
- Cord clamp is not available in many of the facilities due to this there is a delay in tying the cord especially in asphyxiated newborn.
- Power backup is the major issue. Radiant warmer sometimes not functional on inverter due to large amount of load.
- In NBCC register Staff nurses are mentioning only LBW or Birth Asphyxia as a complication. Rest preterm, hypothermia and others are mentioned very rarely.
- Oxygen hood unavailability is a major issue, due to unavailability of oxygen hood Oxygen is provided by mask to newborn. This leads to leakage of oxygen along the sides of mask and proper oxygen is not provided to the newborn.
- Staff Nurses do not admit the preterm baby to NBCC. They directly shift the baby along with mother to PNC ward to start skin to skin contact and breast feeding.
- Unavailability of warm towels and sterile cotton leads the baby to hypothermia.
- Some of the staff nurses not able to identify the birth asphyxia cases on time.
- Staff nurses perform PSDSR but do not mention in the NBCC register.
- Lack of empathy in the staff towards newborn care during golden 1 minute.
- Radiant warmer and AMBU bag are not cleaned on daily basis.
- Complications of newborns are not managed by Medical officers.

RECOMMENDATIONS

- Centralized oxygen supply in the labor room because staff nurse face problem in opening the oxygen cylinder and to avoid delay in oxygen supply to newborn.
- NBCC tray should be maintained separately for drugs, pediatric stethoscope and thermometer.
- Separate staff for the NBCC is to be ensured because sometime in LR only 1 staff is available so it will be difficult for the single staff to manage the newborn and mother at the same time.
- Mentoring of all the staff nurses to be done on proper filling the NBCC register, admission criteria in NBCC, referral of newborn to NBSU in case of severity and follow up of the newborn on 3rd day.
- Locale purchase of logistics like baby towel, cotton etc. to be done by MOIC in case of less supply from CMSB store.
- Different color-coded tags for newborn who are preterm, birth asphyxia, LBW and Hypothermia so that staff nurses can easily identify the problem.
- 1 NBSU staff can be posted in NBCC to guide the NBCC staff for complication identification and on time management of the complication.
- Need to sensitize all the staff by doctors and nurse mentors related to newborn care for golden 1 minute.
- NBCC demand and audit registers are to be maintained to avoid unavailability of equipment's and drugs.
- Need to clean and disinfect radiant warmer and AMBU bag daily and in between the admissions to avoid infection.
- Need to strengthen referral system of newborn from NBCC to NBSU on time and with oxygen supply for very low birth weight and asphyxia cases.
- Need to fill oxygen checklist on regular basis (use, filled and empty dates).
- Human resource is a major issue for every health facility to provide service round the clock. Promoting public private partnership in providing human resource can solve the issue of human resource.
- Ensure quality of care and ensure follow up of all the cases.

Annexure

Questionnaire for NBCC Assessment

Section1:

General Information of Facility:

1.1	**Block Name**	
1.2	**Facility Name**	
1.3	**MOIC Name**	
1.4	**Name of Respondent**	
1.5	**Designation of Respondent**	

Section 2:

Assessment of Human Resource in NBCC:

Q.NO	Question	YES	NO	Number	F-IMCI	FBNC	NSSK
2.1	**Is there is any dedicated MO assigned for NBCC?**						
2.2	**If No, then how many MOs are conducting deliveries?**						
2.3	**Out of these MOs, how many are trained?**						
2.4	**Is there is any dedicated SN assigned for NBCC?**						
2.5	**If No, then how many SNs are conducting deliveries?**						
2.6	**Out of these SNs, how many are trained?**						

Section 3:

Assessment of Equipment's in NBCC:

S. No	Equipment & Accessories	YES	NO
3.1	**Baby Tray**		
3.2	**Pediatric Stethoscope**		
3.3	**Baby Scale**		
3.4	**Radiant warmer**		
3.5	**Self-inflating bag and mask 0**		
3.6	**Self-inflating bag and mask 1**		
3.7	**Oxygen hood neonatal**		
3.8	**Laryngoscope**		
3.9	**Two set of pencil batteries**		
3.10	**Mucous extractor**		

3.11	**Foot operated suction machine**		
3.12	**Blanket**		
3.13	**Two clean and dry towels**		
3.14	**Feeding Tubes**		
3.15	**Empty vials for collecting blood**		
3.16	**Alcohol Hand rub**		
3.17	**Sterile gloves**		
3.18	**Syringe Hub cutter**		
3.19	**Thermometer**		
3.20	**Protocols:** **a) Antibiotic usage** **b) IP practices** **c) Resuscitation**		

Section 4:

Assessment of Availability of Drugs in NBCC:

S. NO	Drugs	Required Quantity	Available Quantity	Yes	No
4.1	**Ampicillin**	**10**			
4.2	**Gentamycin**	**10**			
4.3	**Inj. Phenobarbitone**	**2**			
4.5	**Inj. Phenytoin**	**2**			
4.6	**Inj. Sodium Bicarbonate**	**4**			
4.7	**Isolyte P**	**4**			
4.8	**Adrenaline**	**2**			
4.9	**Aminophylline**	**2**			
4.10	**Sterile water**	**10**			
4.11	**Inj. Calcium gluconate**	**2**			
4.12	**Inj. Dextrose**	**2**			
4.13	**Inj. Vitamin K**	**100**			
4.14	**0 Dose OPV**				
4.15	**0 Dose BCG**				
4.16	**0 Dose Hep B**				

Section 5:

S. No	Reporting Information	Number
5.1	**Total Deliveries in February, March and April 2020**	
5.2	**Live Birth**	
5.3	**Still Birth:** **A) Fresh** **B) Macerated**	
5.4	**Total number of newborn deaths in February, March and April**	

5.5	**Term Babies**				
5.6	**Birth Weight of Babies:** **a) > 2500 gm** **b) <2500gm** **c) 1500-2499gm** **d) 1000-1499gm** **e) <1000gm**				
5.6	**Preterm:** **a) >37 weeks** **b) <37 weeks**				
5.7	**Infection/Sepsis**				
5.8	**Hypothermia**				
5.9	**Number of newborns who required resuscitation at birth**				

Section 6:

Assessment of Reporting of Mothers of Newborn who are admitted in NBCC:

S. No	**Reporting Information**																
6.1	**Mother's Name**																
6.2	**Type of Delivery**																
6.3	**Age of Mother**																
6.4	**GPLA**																
6.5	**Gestational Age**																
6.6	**Is mother was anemic?**																
6.7	**Does mother Have any medical history**																
6.8	**Does mother come under the category of HRP? specify**																
6.9	**Sex of Baby**																
6.10	**Type of Complication of newborn**																
6.11	**Antibiotic used or not**																

Section 7:

Assessment of Infection Prevention in NBCC:

S. No	Information Required	Yes	No
7.1	Autoclave		
7.2	Sterile Drums		
7.3	Gloves		
7.4	Mask		
7.5	Are the equipment autoclaved on daily basis?		

Section 8:

Daily Basis challenge:

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