

**Summer Training at
Care India(CISSD), Bihar**

**Assessment of Newborn Care Stabilization Units of The Public Healthcare
Sector Facilities in Bihar**

**By
Rahul Gupta**

**Under the guidance of
Dr. Neetu Purohit**

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The IIHMR University, Jaipur
2018

CERTIFICATE

This is to certify that **Rahul Gupta** has undergone summer training in **CARE INDIA Patna, Bihar** from 9th April 2018 to 2nd June 2018.

The candidate himself completed the project assigned to him summer training. His approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in hospital and Health Management.

I wish him success in all his future endeavors.



Dr. Neetu Purohit

Associate Professor

IIHMR University, Jaipur


(Col (Dr) Ashok Kaushik)
for Col.(Dr.) Ashok Kaushik

Dean (Academic & Student Affairs)

IIHMR University, Jaipur

**CARE INDIA**

14, Patliputra Colony

Patna 800 013, Bihar

Tel +91-612-2274957, 2274389, 2270464**Fax** +91-612-2274957**www.careindia.org**

Date: 04/06/2018

TO WHOM IT MAY CONCERN

This is to certify that **Dr. Rahul Gupta** student of **MBA (hospital and health management)**, **IIHMR University, Jaipur** has successfully completed his Summer Training Program on the “**Assessment of Newborn Stabilization Units in the Public Healthcare Facilities of Bihar**” at **Concurrent Measurement and Learning (CML) Unit, CARE India Solutions for Sustainable Development (CISSD), Bihar Technical Support Program (BTSP), Patna** from **9th April, 2018 to 2nd June, 2018**. The Candidate has successfully carried out the study/tasks assigned to him during this training. We found him sincere, committed and diligent. We wish him all the best in his future endeavors.

Sincerely,

Dr Tanmay Mahapatra

Team Lead, CML Unit

CISSD-BTSP

Dr Anup G Nair

Deputy Director – HR and OD

CISSD-BTSP

Acknowledgement

“Vital to every operation is cooperation”–

A wonderful quotation put forth by Mr. Frank Tyger.

The summer training opportunity I had with Care India Patna Bihar was an enriching experience, it was a great chance for learning and professional development. It helped me develop an ability to understand healthcare issues from various perspectives.

Bearing in mind the previous, I would like to take this opportunity to express my deepest gratitude and special thanks to my mentor, Dr. Neetu Purohit, Associate Professor, IIHMR University, Jaipur, for guiding and keeping me on the correct path throughout the two months of internship.

It is my radiant sentiment to place on record my best regards, deepest sense of gratitude and indebtedness to Dr. Tanmay Mahapatra, Team Lead, CARE CML BIHAR, for his immense support and faith and for allowing me to carry out the study with ease at his esteemed organisation during the internship.

I would like to gratefully acknowledge Mr. Anup G Nair Deputy Director – HR & OD CARE BIHAR, whose deep sharing, and cooperation has moved me many levels beyond our own thinking.

Furthermore, I would like to express my deepest thanks to Dr. Sunil Sonthalia, MLE Manager (Facility) CARE BIHAR, for providing me with his experiences and all the required information that helped me with my study.

Special thanks to the CML Team, CAF Team, DTL as well as DMO of CARE INDIA Bihar for supporting me through the whole project with travelling and field visit. Contribution of Block Manager of all the districts was magnificent.

I perceive the opportunity as a big milestone in my professional development. I will strive to use the gained skills and acknowledgement on the best possible way, and will continue to work on their improvement, to attain the desired career objectives.

Sincerely,

Dr. Rahul Gupta

Contents

CARE India(CISSD), Bihar	1
ABBREVIATION	5
1.CARE INDIA.....	6
1.1 STATE PROFILE	8
1.2 VISION AND MISSION OF CARE	9
1.3 CORE VALUES	9
2.2 REVIEW OF LITERATURE.....	11
Evaluation of a quality improvement intervention for obstetric and neonatal care in selected public health facilities across six states of India.....	11
High priority taluka of Gujarat.....	12
Reduction of Neonatal Mortality Requires Strengthening of the Health System: A Situational Analysis of Neonatal Care Services in Ballabgarh.....	12
2.3 RATIONALE FOR ASSESSMENT OF NBSU	13
2.4 RESEARCH QUESTION	14
2.5 OBJECTIVES FOR ASSESSMENT OF NBSU	14
General Objective.....	14
Specific Objective	14
3. RESEARCH METHODOLOGY	14
3.1 Research Design.....	14
3.2 Study Area	14
3.3 Duration of the study	14
3.4 Type of Data collection	14
3.5 Sample size	Error! Bookmark not defined.
• Complete enumeration (Census) of the NBSU facilities.....	Error! Bookmark not defined.
• Limitation: due to time constraint of summer internship project of 2 months; of 38 public healthcare facilities in Bihar, 16 NBSU were covered under the study.	15
3.6 Target Population	15
3.7 Method of data collection	15
4. ANALYSIS	15
4.1 General Information about NBSU	16
4.2 Human Resource	16
4.3 Equipment	18
4.4 Drugs	18
4.5 Consumables and Renewables	20
4.6 Infection Control	21
4.7 Record Maintenance	23

5. OBSERVATION LEARNING	24
6.RECOMMENDATIONS	24
7. CONCLUSION	25
8. REFERENCES.....	25

ABBREVIATION

AMC -Annual Maintained Cost	LBW -Low Birth Weight
ANM - Auxiliary Nurse Midwife	MCH -Maternal and Child Health
ANC - Antenatal Care	MDG -Millennium Development Goals
BA -Birth Asphyxia	ML -Millilitre
BP -Blood Pressure	MOHFW - Ministry of Health and Family Welfare
CFL -Compact Fluorescent Light	SDH - Sub Division Hospital
EBM -Expressed Breast Feeding	FRU - First Referral Unit
ELBW - Extremely Low Birth Weight	NBSU -Newborn Stabilization Unit
FBNC -Facility Based Newborn Care	NIBP -Non-Invasive Blood Pressure
F-IMNCI -Facility Based Integrated Management of Neonatal Childhood Illness	NMR -Neonatal Mortality Rate
GIR -Glucose Infusion Rate	NNF -National Neonatology Forum
GOI -Government Of India	NRHM -National Rural Health Mission
HEP-B -Hepitis B	NS -Normal Saline
HIE -Hypoxic Ischemic Encephalopathy	NSSK -Navjaat Shishu Suraksha Karyakram
HR -Heart Rate	OPV -Oral Polio Vaccine
IAP - Indian Academy of Paediatrics	PHC -Primary Health Centre
IMNCI - Integrated Management of Neonatal and Childhood Illness	RCH II -Reproductive Child Health Programme II
IMR -Infant Mortality Rate	RDS -Respiratory distress Syndrome
IANN -Indian Association of Neonatal Nursing	RL -Ringer's Lactate
IV -Intravenous	RR -Respiratory Rate
IVF -Intravenous Feeding	SNCU - Special Newborn Care Unit
JSY -Janani Suraksha Yojana	SRS – Sample Registration System
KCL -Potassium Chloride	TSB -Total Serum Bilirubin
KG -Kilogram	U5MR – Under-5 Mortality Rate
	VLBW – Very Low Birth Weight
	WHO - World Health Organisation

1.CARE INDIA

CARE has been working in India for over 65 years, helping alleviating poverty and social exclusion by facilitating empowerment of women and girls from poor and marginalized communities. In India, CARE focuses on the empowerment of women and girls because they are disproportionately affected by poverty and discriminations; and suffer abuse and violations in the realization of their rights, entitlements and access and control over resources. They do this through well planned and comprehensive programmes in health, education, livelihoods and disaster preparedness and response.

To be able to bring about lasting change, CARE India addresses underlying causes of poverty and social injustice. For example, they implement a gender transformative framework within their programmes to address unequal power relations at the grassroots level.

CARE in India works across 14 States and 38 projects, touching the lives of 37 million people. Some of the notable initiatives of CARE India are:

- CARE India response on Cyclone Phailin hit on the Eastern Coast of India.
- CARE India Tsunami relief programme.
- CARE India response to floods in Uttarakhand.

CARE India has been working extensively in different parts of India. They work with grassroots initiatives, state and district governments, and communities and individual from all over the country. As of now, CARE India is present in 14 states of India, with the head office being in Delhi.

Please see below for the list of the 14 states:



**Figure 1 CARE works across 14 states and 38 projects, touching the lives of 37 million people
(Headquarter in Delhi)**

FOUR MAIN FUNCTIONAL AREAS



Disaster Preparedness



Education



Health



Livelihood

BIHAR TECHNICAL SUPPORT PROGRAM (BTSP)

Bihar Technical Support Programme find roots in CARE India's integrated Family Health Initiative (IFHI) projects that was first launched in 2011, as part of the Ananya Program, with support from the Bill and Melinda Gates Foundation (BMGF). The goal was to reduce MMR and IMR, CARE India interventions focused on better counselling and emergency preparedness for mother and new born, building Basic Emergency Obstetrics and Newborn care (BEMOC) capabilities, improved management of neonatal infections, early initiation and exclusive breast feeding, complimentary feeding, increased immunization and expanded access to quality family planning services and birth spacing methods. CARE India provides catalytic support to Health and Social Welfare Department of the Government of Bihar in achieving their goals.

CARE INDIA INITIATIVES IN HEALTHCARE

Delivering healthcare to over a billion people is a very complex challenge. CARE India works in close collaboration with State and Central Government and other partner organizations to secure accessible and quality maternal and child healthcare among marginalized communities. It works towards identifying the root causes of healthcare challenges, provides innovative solutions, and helps implement secure and quality healthcare services in India. CARE India believes that a healthy mother and a healthy baby is the route to a productive and a developed nation. Hence, CARE has specially focused upon providing comprehensive solutions to address public health problems. CARE India promotes essential new born care and immunization, reducing malnutrition, preventing infant and maternal deaths and protecting those affected by or susceptible to HIV/ AIDS and TB. CARE works closely with its partners to achieve good health care for everyone.

CONCURRENT MONITORING AND LEARNING UNIT (CML)

Data plays key role in evaluating the success and gaps of health programmes. For better health programs and outcomes continuous monitoring and evaluation is required. therefore, for effective and efficient use of the resources, the need of good quality of data is mandatory.

CML Team of Bihar Technical Support Program is the known for its quality of data. Report are generated within 25 days of post collection of data and Data is gone through with significant back-checks-spot-checks and validation.

1.1 STATE PROFILE

Bihar Located at the eastern part of the country is covering an area of 94,163 sq. km, making it the 13th largest state of the India, bordering three other states- Uttar Pradesh, west Bengal, Jharkhand & one country- Nepal. As per the census 2011 the state has a population of 10.41 crores (8.60% of population of India) with a decadal growth of 25.42 %, Bihar is the Third most populous state of the country with 54278157 males & 49821295 females. Sex ration in the state is 918 females per thousand males. The literacy rate is 61.80%, In Bihar only 11.3% population of Bihar is urban & 88.7% of the population live in rural area(1). IMR of Bihar 43/1000 Live Birth (SRS-2013) and MMR 208/100000 Live Birth (SRS-2013)(2). Bihar is distributed in 9 division in 38 districts and 101 sub-divisions, 130 towns and 534 blocks.



1.2 VISION AND MISSION OF CARE

- Their vision is to seek a world of hope, tolerance and social justice, where poverty has been overcome and people live in dignity and security. CARE will be a global force and partner of choice within a worldwide movement dedicated to ending poverty and will be known everywhere for its unshakeable commitment to the dignity of people.
- CARE strives to serve individuals and families in the poorest communities in the world. Drawing strength from their global diversity, resources and experience, they promote innovative solutions and are advocates for global responsibility.

1.3 CORE VALUES

- **Respect:** Affirm the dignity, potential and contribution of participants, donors, partners and staff.
- **Integrity:** Actions consistent with the mission. Being honest and transparent in what they do and say and accept responsibility for their collective and individual actions.
- **Commitment:** Work together effectively to serve the larger community.
- **Excellence:** Constantly challenge themselves to the highest levels of learning and performance to achieve greater impact.



2. NEWBORN STABILIZATION UNIT (NBSU)

2.1 INTRODUCTION

NBSU is a facility within or in close proximity of the maternity ward where unwell and low birth weight newborns can be cared for during short periods.

NBSU AT VARIOUS LEVELS OF HEALTH FACILITIES

- Community health center (CHC) / First referral unit (FRU).

NBSU are expected to provide various services. The services to be provided by NBSU at the time of birth of the normal newborn are, prevention of infection, provision of warmth, resuscitation, early initiation of breastfeeding. Other services provided to the sick newborn are, management of low birth weight infants with no other complication, phototherapy for newborn with neonatal jaundice, management of newborn sepsis, stabilization and referral of sick newborns, referral services, immunization services.

INFRASTRUCTURE FOR DELIVERY OF NBSU

Beds	4
Area (sq.feet)	200 sq. Feet
Location	Close to the labour room
Civil work	Power supply, water supply, lighting, floor spaces and walls
Equipments	Radiant warmers, Resuscitation kit, Weighing scale, Phototherapy unit
Personnel	
Specialist	0
Doctors	1
Nurses	4
ANMs	-
Training	F-IMNCI is a skill based preparation for MO and Nurses which include package on service based care of sick newborn and children. It is a participatory approach combining classroom session with hand-on clinical session. Duration of IMNCI Training for skilled MO and Nurses is 5 days whereas for untrained staffs this duration is of 11 days.

2.2 REVIEW OF LITERATURE

S.NO.	AUTHOR	STUDY TITLE	STUDY AREA	YEAR	NO OF PARTICIPANT	KEY FINDING
1	Oza et al.	Assessment of Facility based newborn care at various health care facilities in Rajkot district	Rajkot	2013	36 Health Facilities	It was observed that majority of PHCs, CHCs, SDH and district hospital in were lacking in essential equipment. Only 1 SDH had NBSU. The healthcare providers at newborn care unit lacked proper training and knowledge regarding care of the neonates and resuscitation(4).
2	Sarin et al.	Evaluation of a quality improvement intervention for obstetric and neonatal care in selected public health facilities across six states of India	Delhi, Haryana, Himachal Pradesh, Jharkhand, Punjab, Uttrakhand	2017	125 public health facilities	With the help of this study a significant improvement of 90-99% was seen for 8 out of 9 indicators (hemoglobin check, ANC history and counselling, kept baby dry and warm, early breast feeding). After intervention perinatal mortality decreased to 22.9

						deaths per thousand Live birth(5).
3	Neogi et al.	Inpatient care of small and sick newborns in healthcare facilities	India	2016		There should be a strong link between SNCU, NBSU and NBCC to provide proper newborn care. NBSU lacked doctors, drugs, bed and equipment (6).
4	Modi et al.	Evaluation of public private partnership model For newborn care services at trust hospitals in High priority taluka of Gujarat	Gujarat, India	2016	3 Pediatrician, 10 medical officer, 2 resident doctor, 18 staff nurses and 2 ANMs	The NBSU, SNCU were well established fully equipped and functional. The healthcare provider had moderate to good knowledge with respect to newborn care(7).
5	Kulkarni et al.	Study on Innovations in Reducing Infant and Child Mortality under NRHM Experiences from Madhya Pradesh	Indore and shivpuri district of Madhya Pradesh	2013	District chief medical officer, PHC medical officer, other health workers and 8-12 mothers	Factors responsible for infant and child mortality are unskilled human resource, lack of facilities and access to medical services(9).
6	Gosain et al.	Reduction of Neonatal Mortality Requires	Ballabgarh	2017	45 health facility	Essential neonatal care facility was provided by public health sector where as sick neonatal

		Strengthening of the Health System: A Situational Analysis of Neonatal Care Services in Ballabgarh				care was provided mainly by private sector. Only 53.9% of public health facilities and 17.5% of private hospitals had newborn care corner with all the essential equipments. There was low competency among healthcare provider in private sector fully specially for sick neonatal care(10).
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2.3 RATIONALE FOR ASSESSMENT OF NBSU

- In India, around lakhs of newborns die every year due to various reasons such as delivery in home, infections, lack of antenatal and postnatal care etc without completing one year of life. Infant mortality rate and neonatal mortality rate in India has been the major concern of the government. According to SRS 2011, Infant mortality rate of India was 47 per thousand live births and it has declined to 42 per thousand live births in 2013 (according to SRS 2013) and Neonatal mortality of India in the year 2011 was 31 per thousand live birth (SRS 2011) and it declined slowly to 28 per thousand live birth in the year 2013 (SRS 2013)(2).
- Bihar being on 7th position in the year 2013 had infant mortality rate as 43 per thousand live birth and neonatal mortality rate as 28 per thousand live birth (SRS 2013)(2).
- Morbidities such as hypothermia, birth asphyxia, neonatal jaundice, respiratory distress and infection were found out to be the main cause of infant mortality and neonatal mortality in India. All these morbidities are preventable if proper care is taken of the newborn infant.
- U5MR of India according to NFHS-4(2015-16) was 50/1000 live birth whereas Bihar was on 4th position with U5MR of 58/1000 live birth as per NFHS-4(2015-16)(11).
- Many programmes / scheme had been started specially for newborn by government such as NSSK, JSSY, F-IMNCI, Facility Based Newborn and Child Care, Janani and Bal Suraksha yojana to lower down the infant and neonatal mortality rate. But there has been minimal improvement to reduce IMR and NMR.

- This study aims to ensure that the healthcare facility in Bihar follow the guidelines and strengthen the NBSU to reduce the patient load from existing SNCU.

2.4 RESEARCH QUESTION

- What is the current status of newborn care stabilization units of public healthcare facilities in Bihar?
- Are there any gaps in the newborn care stabilization units, which needs to be fulfilled?

2.5 OBJECTIVES FOR ASSESSMENT OF NBSU

General Objective

- To assess the new-born care stabilization units of the public healthcare facilities in various districts of Bihar.

Specific Objective

- To assess the human resource of the newborn care stabilization units of public healthcare facilities of Bihar.
- To assess the availability of essential equipment and drugs supply in the newborn stabilization units of public healthcare facilities of Bihar.
- To assess the infection control measures at newborn care stabilization units of public healthcare facilities of Bihar.
- To check the record registers of the newborn care stabilization units of public healthcare facilities of Bihar.

3. RESEARCH METHODOLOGY

3.1 Research Design

- Descriptive Cross-sectional Study was done on the grounds of human resource, equipment, drugs, consumables and record registers of the NBSU in districts of Bihar.

3.2 Study Area

- The study was carried out in all 16 SDH/FRU of 16 districts of Bihar where NBSU were established.

3.3 Duration of the study

- 2 months (from 9th April, 2018 to 2nd June, 2018)

3.4 Type of Data collection

- **Primary data collection:** - primary data was collected through structure questionnaire, computer assisted personal interview (CAPI) from 16 NBSU of Bihar.

- **Limitation:** due to time constraint of summer internship project of 2 months; of 38 public healthcare facilities in Bihar, 16 NBSU were covered under the study.

3.5 Target Population

- NBSU health personnel (DOCTORS, NURSES, ANMs) in 16 districts of Bihar.

3.6 Method of data collection

- Data collection was done by interviewing the available health personnel (Doctor, Nurses, ANM) of NBSU through structure questionnaire.

4. RESULTS

According to FBNC guidelines, a trained medical officer and 4 full time staff nurses should be there in an NBSU. Equipment such as radiant warmer, phototherapy, laryngoscope, thermometer, hub cutter, baby

weighing scale, suction pumps are essential for the proper functioning of the NBSU. There are certain essential drugs that should be present in the NBSU such as antibiotics, paracetamol syrup, normal saline, etc. Good infection control practices and records maintenance should be followed at every NBSU.

4.1 General Information about NBSU

Total no. of facilities	16
NBSU established	16
Availability of waiting area for mother/relatives of the newborn.	11

Table 1.

Table 1 depicts availability of NBSU and waiting area for mothers, relatives to wait while their newborn is admitted in NBSU. All the 16 Sub Division Hospitals(SDH) and Referral Hospitals(RH) in the districts of Bihar which are Forbesganj, Daudnagar, Jale, Areraj, Sherghati, Hathua, Makhdumpur, Barsoi, Barahiya, Jhanjarpur, Tarapur, Sakra, Dhamdaha, Simri Bkhtiyarpur, Majorganj, Bagaha, had an established NBSU. 69% of NBSU had waiting area for mothers and relatives to wait/rest while their new-born child is admitted in NBSU whereas in 31% of NBSU inadequate waiting area was available for mothers and attendants to rest. The NBSU which had waiting area lacked proper chairs, benches, fans, water cooler and important infrastructure needed to present in a waiting area.

4.2 Human Resource

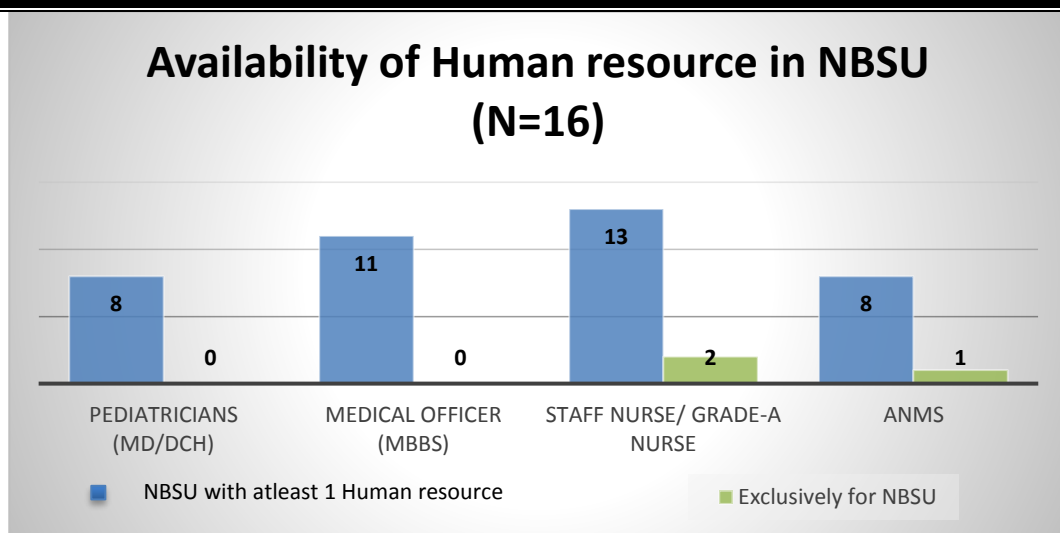


Figure 1. Availability of Human resource in NBSU

Figure 1 depicts that out of 16 facilities only 8 (50%) SDH/RH had a Pediatrician and ANMs. A Medical Officer(MBBS) was available in 11(68.8%) out of 16 facilities and 13(81.3%) facilities had a Staff Nurse/ Grade A Nurse. The Pediatrician and Medical Officer(MBBS) were available for NBSU only on-call basis. There were no Pediatrician and medical officer available exclusively for NBSU. According to FBNC guidelines a trained Medical officer (MBBS) is required exclusively for NBSU but out of 16 facilities only 68.8% of facilities had a Medical Officer(MBBS) but not exclusively for NBSU. 64 staff nurses (4 in each NBSU) are required as per FBNC guidelines, but only 2 NBSU had staff nurses available exclusively for NBSU. Only 1 NBSU had ANMs exclusively for NBSU. There was an acute shortage in number of medical and paramedical staff available in each facility.

4.3 Equipment

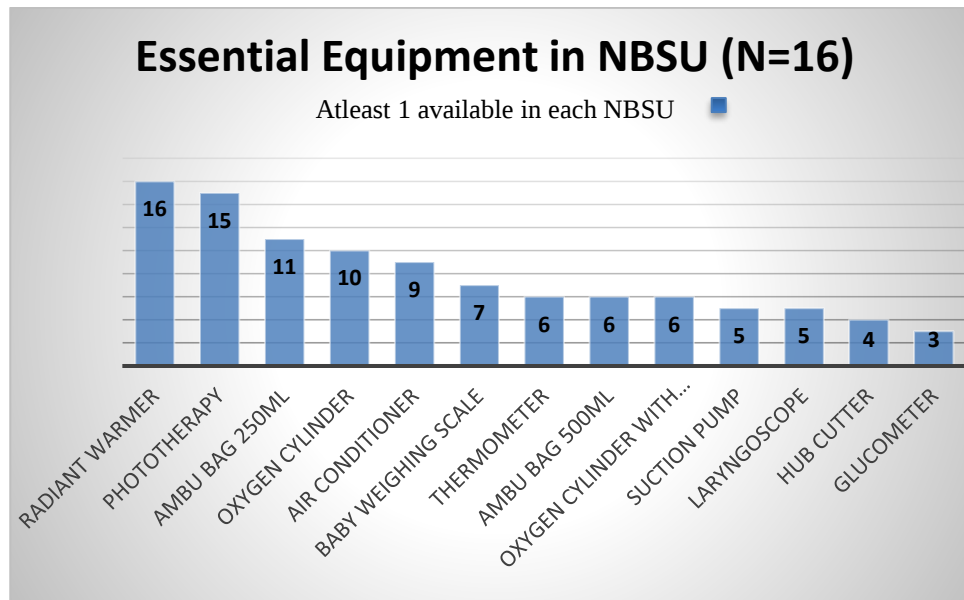


Figure 2. Essential Equipment in NBSU

Figure 2 shows that the radiant warmer was available in all the 16 NBSU, Phototherapy was present in 15 NBSU. Almost 60% of NBSU had resuscitators, air conditioner and oxygen cylinders. The aforementioned equipment was adequately present in the NBSU. Only 5 and 6 NBSU had laryngoscope and thermometer respectively. Only one third of the total NBSU had other essential equipment such as baby weighing scale (in 7 NBSU), suction pump (in 5 NBSU), hub cutter (in 4 NBSU) and glucometer (only in 3 NBSU). Many essential equipment was missing in majority of the NBSU.

4.4 Drugs

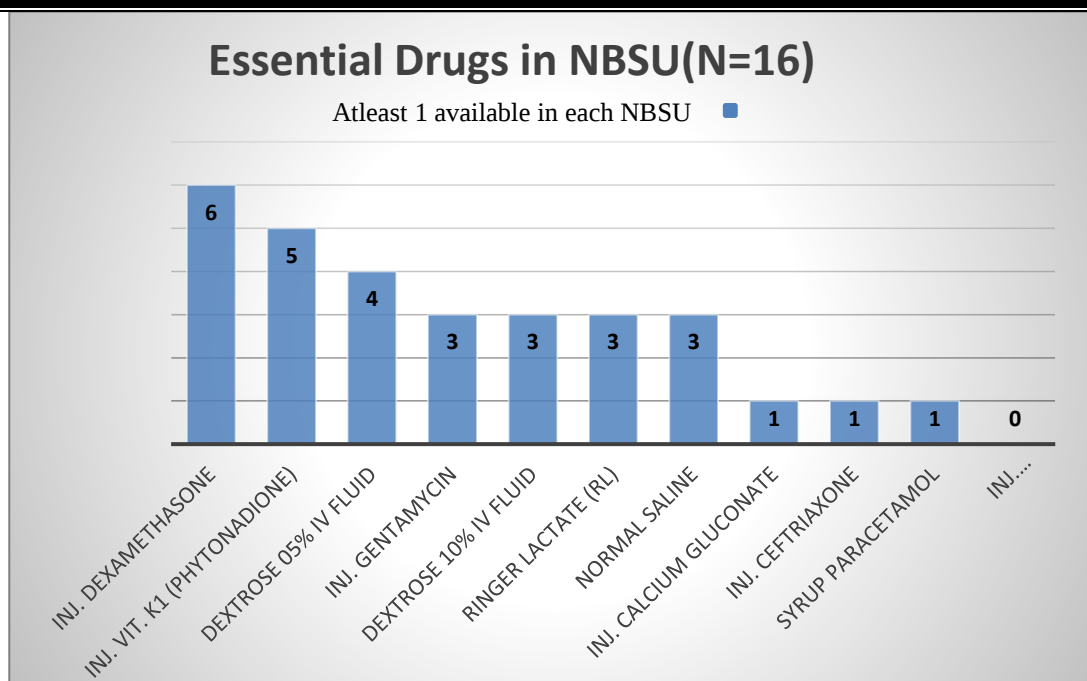


Figure 3. Essential Drugs in NBSU

Figure 3 shows that the essential antibiotic injections such as amikacin, amoxicillin and ampicillin; were absent in all the NBSU. Inj. Dexamethasone (in 6 NBSU) and inj. Vit. K1 (in 5 NBSU) were present in two-third of the NBSU whereas inj. Gentamycin (in 3 NBSU), ringer Lactate (in 3 NBSU) and normal saline were present in one third of the total NBSU. There was a severe inadequacy of essential antibiotic drugs for neonates. These gaps need to be fulfilled in each of the NBSU.

4.5 Consumables and Renewables

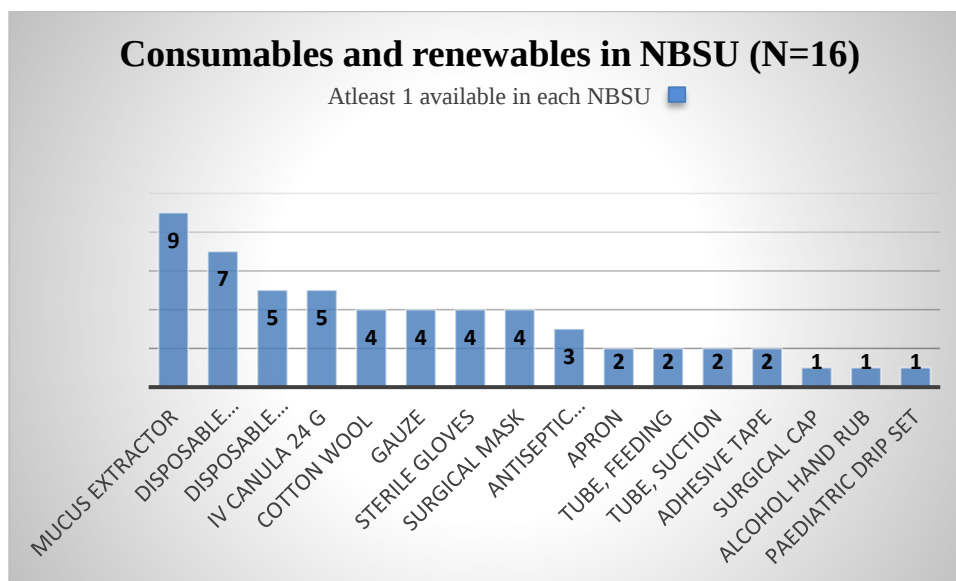


Figure 4. Consumables and renewables in NBSU

Figure 4 depicts that there were very few consumables and renewables available in NBSU. Only 58% and 42% NBSU had mucus extractor and Disposable syringes respectively. Around 30% NBSU had cotton wool, gauze, IV canula 24G, sterile gloves and surgical mask. Adhesive tape, alcohol hand rub, apron, paediatric drip set, surgical caps, suction and feeding tubes were available in less than 15% of NBSU. Most of the essential consumables were found missing in all of the NBSU.

4.6 Infection Control

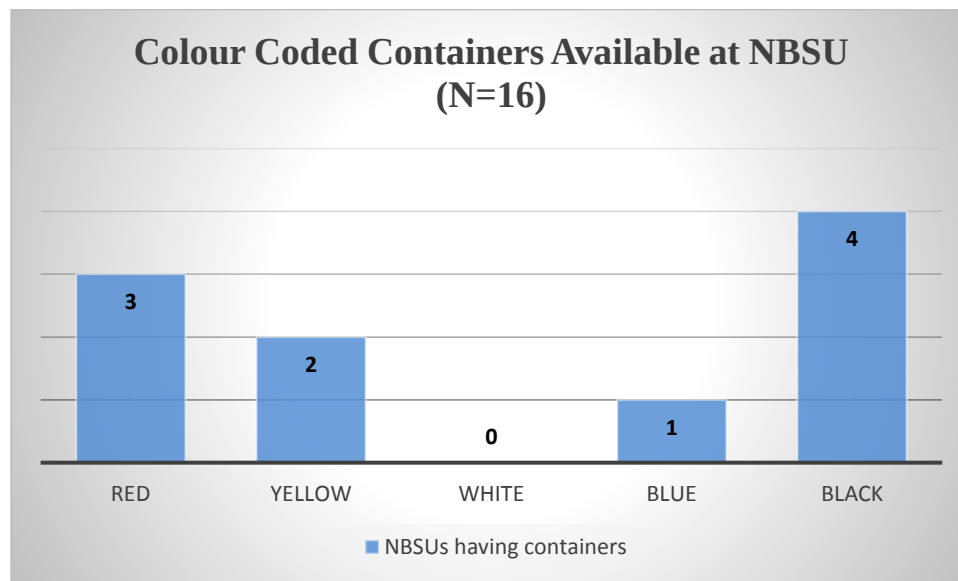


Figure 5. Biomedical Waste Management in NBSU

Figure 5 shows the Biomedical Waste Management. Only 18.8% (3) of NBSU had red container, 12.5% (2) NBSU had yellow containers. None of the NBSU had white container, blue container was present in 6.3% (1) of NBSU. 25% of NBSU had black containers. The bio medical waste management was not up to the mark. There was improper disposal of bio medical waste in NBSU. Even if in some NBSU waste management was being carried out, the biomedical waste was being disposed in different color-coded container. The containers did not have same colored plastic bags in them. The staff of NBSU did not have adequate knowledge about biomedical waste management.

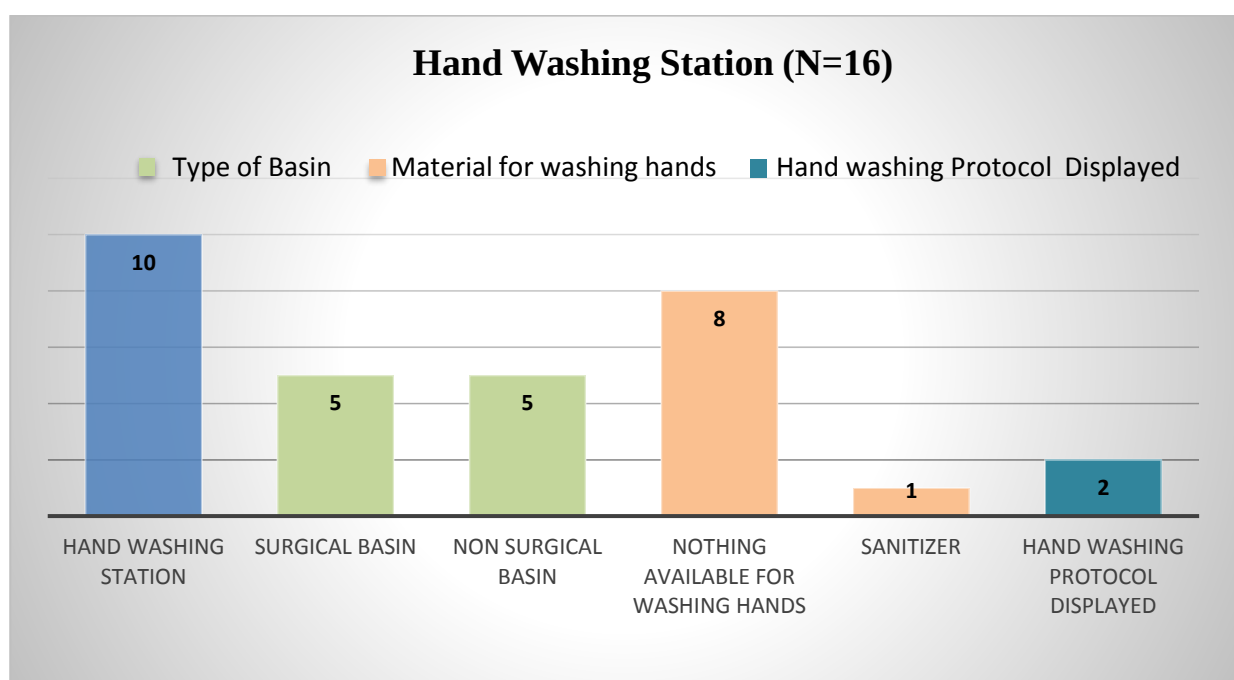


Figure 6. Hand Washing Station

Figure 6 depicts that at 62% of NBSU hand washing station was present whereas 38% of NBSU did not have any hand washing station. At 50% of NBSU Surgical Basin was available and 50% NBSU had non-surgical Basin. Only 10% of NBSU had sanitizer and other materials for washing hands whereas 80% NBSU did not have any material for hand washing. A huge gap is directly visible that 38% of NBSU did not have any hand washing area so there were no basin and no materials for washing hands as well. Washing hands is the basic of infection control and lack of hand washing area and material shows the miserable condition of infection control in the NBSU.

4.7 Record Maintenance

			NBSU with Records		
S no.	Type records/registers	Total NBSU	Printed	Manual	Not available
1	Case Record/Sheet Register	16	3	0	13
2	Doctor's Progress Record Register	16	0	0	16
3	Nurses Monitoring Record Register	16	0	0	16
4	Treatment Sheet Register	16	0	0	16
5	Discharge Card Register	16	0	0	16
6	Death Certificate Register	16	0	0	16
7	Indent Register	16	1	2	13
8	Laundry/Linen Register	16	0	2	14
9	Hand Over and Take Over for Equipment/Consumables Register	16	0	0	16
10	Referral Card Register	16	0	1	15

Table 2. Records and register maintenance in NBSU

The printed case record/sheet register was present only in 3 NBSU out of 16 NBSU, 13 NBSU did not have case record/sheet register in any form. Doctor's progress report, nurse monitoring report, treatment sheet, discharge card, death certificate register, hand over and take over for equipment/consumables register were absent in all the 16 NBSU. 3 NBSU had indent register 1 in printed form and 2 in manual form, whereas laundry/linen register was present in only 2 NBSU that were in manual form. None of the NBSU in districts of Bihar had proper maintenance of patients and treatment records registers in neither printed for nor manual form.

5. OBSERVATION LEARNING

- During the assessment of NBSU it was observed that some of the NBSU did not maintain proper records and registers.
- There was no separate drugs and equipment specifically for NBSU they were brought from the labour room whenever required in the NBSU.
- It was also observed that few NBSU were used as NBCC also.
- It was observed that there was only 1 MBBS Doctor for the whole facility.
- It was observed that some of NBSU were fully established but non-functional because of lack of HR.
- The frequency of changing the linen covering the mattress radiant warmer was irregular. Bassinet and canopy of radiant warmer was not cleaned by appropriate cleaning material whereas other agents like normal water, phenyl, wet cloth, etc were used in most of the NBSU.
- It was observed that in most of the NBSU small cup, spoon and paladai were not available.
- The healthcare providers at NBSU did not use sterile measures before touching the new-born baby.
- The staff lacked knowledge about disposal of biomedical wastage.

6.RECOMMENDATIONS

- Mandated number of health personnel should be appointed exclusively for the NBSU.

- Biomedical waste management practices were not followed in any of the NBSU, the staff should be trained about the proper waste management practices and they should adhere to the correct BMW practices.
- Monitoring is necessary to increase the effectiveness of NBSU.
- Majority of NBSU lacked proper infection control measures. It is recommended to build proper hand washing stations at each NBSU.
- There should be adequate number of surgical and non-surgical equipment and consumables.
- All the essential drugs should be made available at each NBSU.
- There should be proper waiting area for the mothers/relatives of the newborn to wait or rest while their child is admitted to the NBSU.

7. CONCLUSION

It was concluded from the study that most of the NBSU were not following the FBNC guidelines as there was lack of trained MBBS doctor and other medical personnel that was required to be in the NBSU. There was improper maintenance of record and registers which are essential for any health facility.

Most of the essential drugs such as antibiotic injections were unavailable at all the NBSU. There was acute shortage of all the important equipment needed in an NBSU. Essential consumables were also missing in majority of the NBSU. One third of NBSU lacked hand washing stations, materials for handwashing, etc. The correct practices of biomedical waste management were not being followed in any of the NBSU.

8. REFERENCES

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