Facility Readiness through Health System Strengthening lens: A Snapshot in Nalanda District of Bihar

By

Pratibha Kumari Rana

Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management

Academic year, 2016-2018

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INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

TO WHOM SO EVER MAY CONCERN

This is to certify that **Pratibha Rana** student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at **Care India, Bihar** from 5th February, 2018 to 4th May, 2018.

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.

Dean, Academics and Student Affairs
The IIHMR University, Jaipur

Professor
The IIHMR University, Jaipur

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CERTIFICATE OF DISSERTATION COMPLETION

The certificate is awarded to

PRATIBHA KUMARI RANA

In recognition of having successfully completed her
Dissertation in the department of

Concurrent Measurement & Learning

and has successfully completed her Project on

Facility readiness through Health System Strengthening lens; a snapshot in Nalanda, Bihar

Date: 4th May 2018

Organization: CML unit, CISSD -BTSP Care India, Bihar

She comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning

We wish her all the best for future endeavors

CML Team Lead

Deputy Director-Human Resource

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Reference: Dissertation 11/05/2018

Dissertation Completion Certificate

Certified that Dr. Pratibha Kumari Rana, pursuing Master of Business Administration in Hospital and Health Management from IIHMR University, Jaipur was placed at CARE India during 5th February to 4th May`2018 for academic dissertation on "Facility Readiness through Health System Strengthening lens: a snapshot in Nalanda, Bihar". She was placed in Nalanda District under CML unit, CISSD, BTSP CARE India, Bihar Project, as a District Monitoring, Learning & Evaluation Officer.

During dissertation under the guidance of Dr. Aritra Das, Expert Epidemiologist, CML unit of CARE India in Bihar, she has met the necessary requirement and worked closely with the Concurrent Measurement & Learning team. She has been found to be sincere and dedicated towards the responsibilities bestowed on her.

We wish to see her well stationed in life with bright future ahead.

Thanks and regards,

CML Team Lead

Deputy Director-Human Resource

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation title Facility readiness through Health System Strengthening Lens; snapshot of Nalanda District, Bihar and submitted by. Dr. Pratibha Kumari Rana Enrollment No. 0469 under the supervision of Dr. Anoop Khanna for award of MBA in Hospital and Health/ Pharmaceutical / Rural Management in Health and Hospitals of the University carried out during the period from 5th Feb 2018 to 4th May 2018 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.

Signature

Pratibha
16/5/2018

Facility Readiness through Health System Strengthening lens: A snapshot in Nalanda District of Bihar

ABSTRACT

Background

Comprehensive Facility assessment was a survey carried out at all the facilities of public health sector to capture availability of resources (input indicators) related to RMNCHA through interview of health facility staff and observation and in all the 38 districts of Bihar.

Comprehensive Facility Assessment (CFA) was carried out by the CML for the BTSP to describe the availability, functioning and quality of inputs (resources) required for delivery of health care services in public sector with focus on maternal and newborn services.

The outcome of the survey would enable the Program teams to reposition health care delivery system in the public health sector. CFA was basically an effort to establish benchmarks for setting targets, devising strategies and plans to achieve BTSP objectives.

Objective

The objective of the assessment was to understand the existing state of public health facilities in Bihar. Various aspects such as infrastructure, human resource, supplies, infection control, laboratory facility, operation theatre, referral system and condemned articles were observed to understand the gaps and potential intervention points

Methodology

Study was cross-sectional study carried out in all public health facilities of 38 districts of Bihar. CFA study tool is used for the data collection.
Survey was based on general observation, physical counting of drugs and consumables. No Secondary data sources are used in the survey.

Structured questionnaires were designed for the data collection. pilot testing was done in few public health facilities. Back check and Spot check formats are used for the Data quality assurance.

A Total of 534 ,549 and 550 public health facilities were targeted in all the 38 districts of Bihar in Round 1, Round 2 and round 3 respectively whereas in Nalanda total 20 ,20 and 21 facilities are observed in all three rounds respectively.

All the facilities are included, at and above the level of PHC where 24X7 delivery was being conducted.

Key Findings:

One of the major indicator that outlines smooth functioning of health system is Safe motherhood and maintenance of universal quality. When we compare the findings of the assessment with the standard guideline we observe many gaps regarding indicators like infrastructure, equipment's, availability of important drugs and consumables, infection control and bio medical waste related gaps which will need extra focus to match to the standard adherence of protocol.

Recommendations:

The study recommended following actions:

- Support and motivation amongst the staff
- Sensitization of the staff required to follow hygiene practices
- Regular monitoring of the Stock of essential drugs and commodities
- Regular visits of higher authorities in Labor room
- Adherence with the standard guidelines and protocols
- More rigorous interventions of the Government is required especially for the maintenance of the infrastructure

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ABBREVIATIONS

CARE	Cooperative for American Remittances
CML	Concurrent measuring and Learning
BTSP	Bihar Technical Support Program
CFA	Comprehensive facility assessment
NBCC	New Born Care Corner
LR	Labor Room
AWC	Anganwadi Centre
AWW	Anganwadi Worker
AWH	Anganwadi Helper
ASHA	Accredited Social Health Activist
WHO	World Health Organization
NFHS	Nation family health survey
PRIs	Panchayati Raj Institutions
INGO	International Non-Government Organization
INHP	International nutrition health programme
ICDS	Integrated child development services
IMR	Infant mortality rate
MCH	Maternal and child Health
SHGs	Self Help Groups
PHC	Primary Health Centre
CHC	Community Health Centre
FRU	First Referral Unit
N-TSU	Nutrition-Technical Support Unit
MMR	Maternal Mortality Ratio
M & E	Monitoring and Evaluation
LS	Lady Supervisor
LQAS	Lots Quality Assurance Sample
CDPO	Child Development Programme Officer
MoHFW	Ministry of Health and Family Welfare
DMO	District Monitoring and Learning Officer
DQMC	District Quality Monitoring coordinator
BMLE	Block monitoring and learning evaluator

Acknowledgement

Every successful story is a result of an effective team work, a team which comprises of a good coach and good team players. Likewise, this project report is no exception. This has been a meticulous effort of a group of people along with me. I want to take this opportunity to thank each and every one who has been a part of this report.

To start with, I take immense pleasure to thank **Dr. S.D. GUPTA** and **Dr. D. K. Mangal** (*Dean, Research Institute of Health Management Research- Jaipur*) for placing me in such an esteemed organization (Care India) to perform my dissertation and start my career with; and my mentor, **Dr. Anoop Khanna** for his timely advice and encouragement for the successful conduction of my project.

I am highly indebted to Dr. Tanmay, Director CML, Care India, Bihar, for providing me with this opportunity to be a part of CML team at Care India, Bihar and giving me time and space from the induction and training schedule, to perform my fieldwork.

Also, I wish to thank Dr. Aritra Das for their continuous guidance in the training programme and arranging transport and other requirements for the completion of our desired field visit.

I then take this opportunity to thank my District team i.e. DQMC and BMLEs in Nalanda for being a constant source of support during the data collection in their blocks.

ORGANIZATION PROFILE

CARE INTERNATIONAL

CARE International is a leading humanitarian organization fighting global poverty. It places special focus on working alongside poor women because, equipped with the proper resources, women have the power to help whole families and entire communities escape poverty. Women are at the heart of their community-based efforts to improve basic education, prevent the spread of diseases, and increase access to clean water and sanitation, expand economic opportunity and protect natural resources. The organization also delivers emergency aid to survivors of war and natural disasters, and help people rebuild their lives.

In the fiscal year 2015, CARE worked in 95 countries around the world, supporting 890 poverty-fighting development and humanitarian aid projects to reach more than 65 million people.

CARE International is a global confederation of 14 National Members and one Affiliate Member with the common goal of fighting global poverty. Each CARE Member is an autonomous non–governmental organization and implements program, advocacy, fundraising and communications activities in its own country and in developing countries where CARE has programs. At the beginning, there was a package: a CARE package, aimed to reduce hunger and show solidarity with the people of war-torn Europe.

At the end of World War II in 1945, twenty-two American charities, a mixture of civic, religious, cooperative and labor organizations got together to found CARE. Originally known as the *Cooperative for American Remittances to Europe*, it began to deliver millions of CARE packages across Europe. This was basically a small shipment of food and relief supplies to hungry recipients - with a huge impact on people's lives.

During the next three decades, CARE shifted its focus from helping Europe to delivering assistance in the developing world. It started programs in the areas of education, natural resources management, nutrition, water and sanitation, and healthcare in Southern Africa, South Asia and South America. Broadening the geographic focus and expanding beyond the

original food distribution programs, CARE started to assist people affected by major emergencies – from famine in Ethiopia to hurricane recovery in Honduras.

Over the previous decades, Care has continuously developed its approach to reducing poverty. In 1945, CARE was established on the premise that poverty was mainly due to a lack of basic goods, services, and healthcare. As the organization grew, so did their understanding of poverty. CARE's scope widened to include the view that poverty is often caused by the absence of rights, opportunities and assets, largely due to social exclusion, marginalization, and discrimination. In the early 1990's, its work grew into what they call a 'rightsbased approach' to development.

In 1993, in an effort to reflect the wider scope of its programs, vision and impact, CARE changed the meaning of its acronym to *"Cooperative for Assistance and Relief Everywhere"*. By 2007, it started focusing on women's empowerment realizing that women are the key: by empowering women entire families can be lifted out of poverty.

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.

VISION AND MISSION

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.

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)

HISTORY OF CARE INDIA

CARE came to India in June 1946 when one of its co-founder, Lincoln Clark, signed the CARE Basic Agreement in New Delhi at the Office of Foreign Affairs. The agreement was limited to contributions of technical books and scientific equipment for universities and research institutes. In November 1949, the first Chief of Mission, Melvin Johnson, arrived in India to establish operations. Subsequently on the invitation of the then President of India, he developed a CARE India Food Package that caused a renegotiation of the CARE Agreement to include importation of food through Indo-CARE Agreement on 6 March 1950. The CARE Office during 1950's in Delhi was a hutment (a long, thin building) located in Janpath, Connaught Place. CARE had three additional offices and warehouses in India located in Bombay, Madras, and Calcutta.

Figure 2 Early Days of CARE India

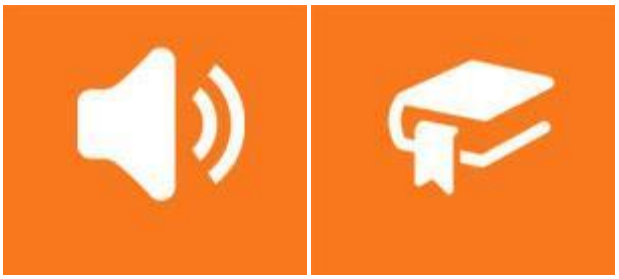
The initial programmes those days included assistance to educational institutions, relief camps and assistance to hospitals in form of books, laboratory equipment, tools supply etc. When the Mid-Day Meal (MDM - school lunch) program started in 1960, state offices were established and the staff in Delhi and state offices increased. Since 1960's CARE has been supporting government's school feeding programs. CARE has been providing nutritious food for the beneficiaries of Integrated Child Development Services (ICDS) on the request of GOI since 1982. CARE supported the Government's ICDS in the states of Andhra Pradesh, Bihar, Madhya Pradesh, Odisha, Rajasthan, Uttar Pradesh and West Bengal. As a part of support from USAID, CARE implemented a long-term project named Integrated Nutrition and Health Project (INHP) from 1996 till 2010 and reached to about 1297 blocks in nine major states of India. Recognized worldwide for its contribution in disaster response and rehabilitation operations, CARE in India has supported the efforts of Government of India and individual state governments as and when major disasters occurred in the country. CARE has provided relief to several natural disasters since 1966 with Jammu and Kashmir floods 2014 and Hud Hud in Andhra Pradesh being the most recent. Some of the efforts include response to flood relief in West Bengal in 1979, cyclone in Andhra Pradhesh in 1977 and in 1996, and earthquake relief in Latur, Maharashtra in 1993, and Odisha super cyclone in 1999.

CARE India's current 'Programme' approach stems from a redrawn vision, under which, working with partners on projects has been overlapped with holistic, long term, deep impact

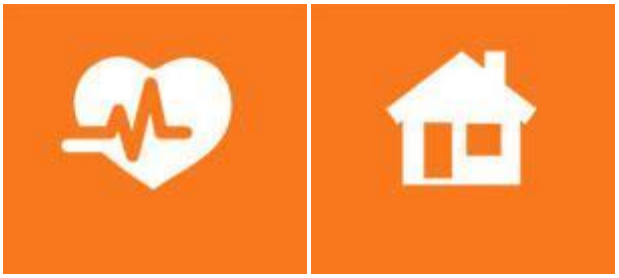
"programmes" that work directly with key populations to ensure that the root causes of poverty and marginalization of people, particularly poor women and girls, are tackled strategically and collaboratively.

As CARE India moves ahead, their key programming approaches will include social analysis and action, gender transformative value chain approaches, leadership and life skills strengthening, building capacities and leadership roles at multiple levels, advocacy on national and international platforms and facilitating links and dialogues between public, private and civil society

FOUR MAIN FUNCTIONAL AREAS



Disaster Preparedness Education



Health Livelihood

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

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

PART - I

INTRODUCTION

Maternal and newborn deaths are burning public health challenges that India is facing from past two decades. However significant progress has made on reduction of neonatal and infant mortality rates but still the progress is sub-optimum. In order to tackle these public health challenges, many innovative approaches and interventions are launched by GOI under National Health Mission Scheme(NHM). Studies suggested that majority of maternal and newborn deaths occur during the period of delivery and after delivery (1) .To achieve desired reductions in maternal and neonatal morbidity and mortality focus is required on the facility readiness in terms of provision of quality of care ,adequacy and availability of infrastructure, availability of drugs and commodities. Comprehensive facility assessment(CFA) was a survey carried out in all, public health facilities of all the 38 districts of Bihar including Nalanda

BACKGROUND AND RATIONALE

Infant mortality rate (48 per 1000live births), U5MR (58 per 1000 live births) (2) and maternal mortality (301 per 100,000 livebirths) are the major public-health challenges which India is facing from past many decades. United Nations Millennium Development Goals (4 and 5) re- emphasize in improving the maternal and child health. India has managed to reduce MMR by 66%, which is an estimated 600 to 200 maternal deaths per 100 000 live births, with an average annual decrease of 5.2% during the period 1990–2010(3)

India contributes highest numbers of maternal and child death worldwide, and its critical setting makes difficult to implement and evaluate the health programmes (4) Almost,300 million people in India comes under the age of 15 category, contributes fourth largest population of children in the world. Therefore, Reproductive, Maternal, Newborn ,Child and adolescent Health (RMNCH) one of the top most concerning issue for the country.(5).Addressing the issues RMNCH+A approach has been launched to provide an understanding of "continuum of care "to ensure equal focus on various life stages of women ,children and adolescents(6)

Acknowledging the health system strengthening agenda, the World Health Organization (WHO) has formulated Service Availability and Readiness Assessment (SARA) Tool designed to assess, monitor the availability of the services and health system readiness and also strengthen the health system through providing evidence based support for the planning and managing of a health programmes.(7)

Among all the states, Bihar which is one of the most populated, poorest and lowest-performing states, (8) Bihar has 38 districts with inadequate health care access. State has only 60% of the necessary primary health centers, and 9% of the required community health centers. centers(8)

According to NHFS-4, Mothers who had at least 4 antenatal care visits are only (9%), only two-third of deliveries are Institutional (78.5 %).besides it almost half of the deliveries are conducted in births in public facility (58.0 %), whereas very few Home deliveries are conducted by skilled health personnel 4.2%) .(2).

Therefore health system strengthening should be intensively focused by targeting the six building blocks of the health system which includes delivery of services, human resource, information technologies, medical products, and vaccines, health financing, and leadership/governance. (9). Serially track the progress of key indicators of RMNCH+A program, comprehensive facility assessment was conducted by CML for the BTSP in all the 38 districts of Bihar. Community Facility Assessment was carried to assess the availability, functioning and quality of resources required to deliver maternal MCH services which would further help the program Implementers to develop strategies and plans. Four rounds of CFA were conducted from 2015 till 2017, where in the study finding of round four were comparison is done between the Nalanda district and Bihar, to take and overview of health facilities readiness of Nalanda district.

Nalanda (Bihar Sharif) district ranks 18th in terms of population (28,77,653) and 21st in terms of area (2,355sq.km.) in the state of Bihar,(10)which holds 20 blocks where the fourth round CFA was conducted between November 2017 till 2017.

General Profile of NALANDA

Nalanda is closely located near the Patna, the Capital of Bihar. Nalanda is famous for the ancient international Monastic University which was established in 5th Century back. Nalanda is popularly known as Bihar Sharif. Two rivers phalgu and mohane flows through Nalanda district.

The three Sub Division of Nalanda are Biharsharif, Rajgir and Hilsa. 20 Blocks of Nalanda district Giriyak, Rahui, Noorsarai, Harnaut, Chandi, Islampur, Rajgir, Asthawan, Sarmera, Hilsa, Biharsharif, Ekangarsarai, Ben, Nagarnausa, Karaiparsurai, Silao, Parwalpur, Katrisarai, Bind and Tharthari. The District spread over the area of 2,355 sq.km.as per census 2011. The total population of the District is 28,72,523.

Figure 3 Represents the map of Bihar state

Agriculture and Tourism are two main sources of income in Nalanda. District is a famous tourist destination; therefore, tourism plays very important role in the economy of Nalanda.

Description	Nalanda	Bihar
Actual Population	2,877,653	104,099,452
Male	1,497,060	54,278,157
Female	1,380,593	49,821,295
Population Growth	21.39%	25.42%
Area Sq. Km	2,355	94,163
Density/km2	1,222	1,106
Proportion to Bihar Population	2.76%	0
Sex Ratio (Per 1000)	922	918
Child Sex Ratio (0-6 Age)	931	935
Average Literacy	64.43	61.80%
Male Literacy	74.86	71.20%
Female Literacy	53.1	51.50%
Total Child Population (0-6 Age)	518,681	19,133,964
Male Population (0-6 Age)	268,660	9,887,239
Female Population (0-6 Age)	250,021	9,246,725
Literates	1,519,933	52,504,553
Male Literates	919,558	31,608,023
Female Literates	600,375	20,896,530

Table1 Represents the Demographic statistics of Nalanda and Bihar

*census 2011

PART - II

Objective and Methodology

General objective:

- To assess the availability, functioning and quality of resources required to deliver MCH services in public health facilities

Specific objectives:

- To assess the availability of human resources
- To assess the infrastructure of public health facilities (roof, wall ,floor, door, window layout ,usage and electricity)
- To assess the availability of consumables, essential drugs and equipment.

Methodology

Study Design

CFA was a cross-sectional study carried out in all public health facilities of 38 districts of Bihar

Including all public health facilities, at and above the level of Primary health centers where 24x7 deliveries were conducted

Type of facilities covered in the study was:

1. Block primary healthcare center
2. Referral hospital (CHC/ FRU / RH)
3. Sub-district hospital
4. District Hospital

CFA survey was based on general observation, physical counting of drugs and consumables. No Secondary data sources are used in the survey.

In the successive rounds of CFA, changes are very frequent in drugs and consumables therefore data was collected on the quarterly basis whereas status of Human Resources

status would be captured on bi-annual basis and Infrastructure would be captured on annual basis .

CFA Study Tool

Structured questionnaires were designed for the data collection. pilot testing was done in few public health facilities. Sections of tool covered are listed in below mentioned table.

Tool	Description
Basic Information about the Facility	Information on identifiers of health facility (district, block, name, type etc.), population under the facility, emergency service provision, nearest referral facility etc. were collected.
Infrastructure	Observation of structural components of Labor room, newborn corner and Maternity Ward such as condition of roof, floor, wall, doors, windows, electricity backup, layout and usage etc. were captured.
Human Resource	Availability of Medical officers, Gynecologists, Pediatrician, Anesthetist, staff nurse/Grade A nurse, ANMs in the public health facilities with reference to the sanctioned post of GOB were captured. Additionally, HR on rotation and deputation basis along with their on-job training status were also captured
Drugs, Consumables and Equipment	A compiled list of essential drugs, consumables and equipment's as per JSSK, EDL, MNH tool kit (GOI) and RMNCH+A 5X5 matrix were included in the tool.

Table 1 Sections covered in the Comprehensive Facility Assessment

Study Area

A Total of 534 ,549 and 550 public health facilities were targeted in all the 38 districts of Bihar in Round 1, Round 2 and round 3 respectively whereas in Nalanda total 20 ,20 and 21 facilities are observed in all three rounds respectively.

Sampling strategy

Universal sampling was done. All the facilities are included, at and above the level of PHC where 24X7 delivery was being conducted.

Operationalization and Field Monitoring

Data collection was done by BMLEs with the supportive supervision of DMOs and DQMCs Role of DMOs and DQMCs were to provide guidance and handholding support. operational issues faced by the BMLEs during the study period were initially resolved by DMOs and DQMCs and further unresolved queries were handled by MLE Operationalist. In order to monitor the Data collection process tracking sheet was s maintained

DMOs and DQMCs were also trained on the tool to facilitate monitoring and editing process. 3 days training program was conducted out of which, 2 days were devoted for the classroom sessions and 1 day was invested for field visit. audio – visuals, Skill labs, lectures and practice sessions are the tools used for the training session.

Data Quality Assurance

Spot Checks, Back Checks and audio listening were Quality Control measures taken for the study. There was a provision of around 15% of spot check and back check.
Commodities like drugs and consumables were spot-checked as the quality and quantity can vary on day to day basis whereas Back checks were done for Infrastructure, Human Resource and Equipment section. Audio-listening were also used as tool for checking the quality of Interviews conducted by BMLEs.
If the Discrepancies found between the responses of the previously filled questionnaire and back check format, appropriate feedback mechanism was followed, and corrected response was edited in the tool.

Editing was also done for the following:

- Skipping pattern
- Illogical entries

- Missing fields

Data Management

Data collection was done by handheld device using ODK For round 3.. The data entry program for Round 1 data was developed in SQL and Round 2 in CS Pro. Various range and validation rules were incorporated in the program to minimize data entry mistakes Once the dataset was available, it was cleaned based on validation rules, consistency, range checks etc. If the error persisted, even after the data cleaning process, query sheets were sent to districts to resolve the issue. Once the issue was resolved changes were made in the data set and it was finalized for analysis

Data Analysis

Descriptive analysis of the data (frequency, proportion) was done using STATA and SPSS

PART – III

FINDINGS

AND CONCLUSION

Findings

Results are described on the basis of comparison of the indicators selected for the labor room. Comparison was done among all three rounds of CFA for both Bihar state and Nalanda district.

1.Infrastructure of labor room

Infrastructure positively affects both quality of services provided and outcomes of the delivery. Maternal and child health both are directly linked with the quality and adequacy of infrastructure therefore, regular maintenance and check is necessary for the same.

In order to assess the availability, adequacy and maintenance of the infrastructure following are the indicators are selected:

A. Adequate floor area
B. Provision of NBCC
C. sign of water seepage
D. Walls and floors covered with tiles
E. presence of elbow taps in handwashing station
F. Provision of power back up
G. Unavailability of handwashing station

Adequate floor area

It was observed that less than half of the delivery points has adequate floor area where situation for Bihar is poorer in overall Bihar (29 percent) in comparison to Nalanda (33 percent) therefore more vigorous interventions are required for the same.

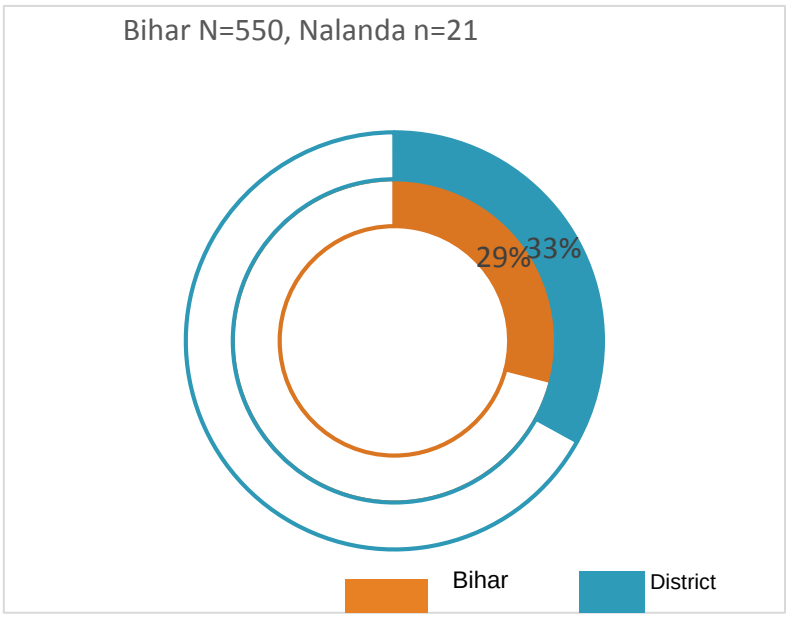


Figure 4 Represents the availability of adequate floor area for the available labor tables

Room designated as Labor room

Facilities having designated labor room shows positive trend from the year 2015 till 2017 for both Bihar and Nalanda district which shows gradual improvement in the accessibility of labor room, but still improvement is required as a Bihar state whole.

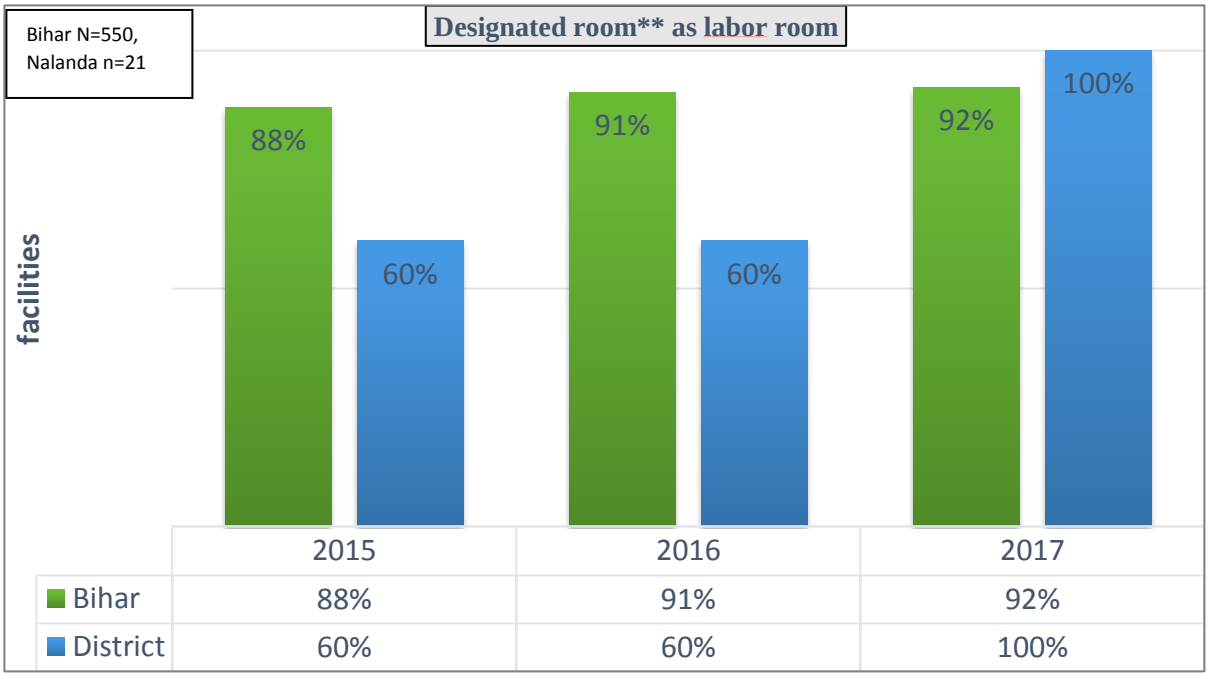


Figure 5 Represents the percentage of facilities with designated labor room

Availability of New Born Care Corner inside labor room

According to the New Born Care Corner is mandatory for all the Labor room, Obstetrics OTs and delivery points which is an essential intervention for the reduction of neonatal mortality

Above figure represent the trend from the year 2015 to 2017 which clearly depicts gradual increase in available New born care corner (from 58% to 62%)in Nalanda

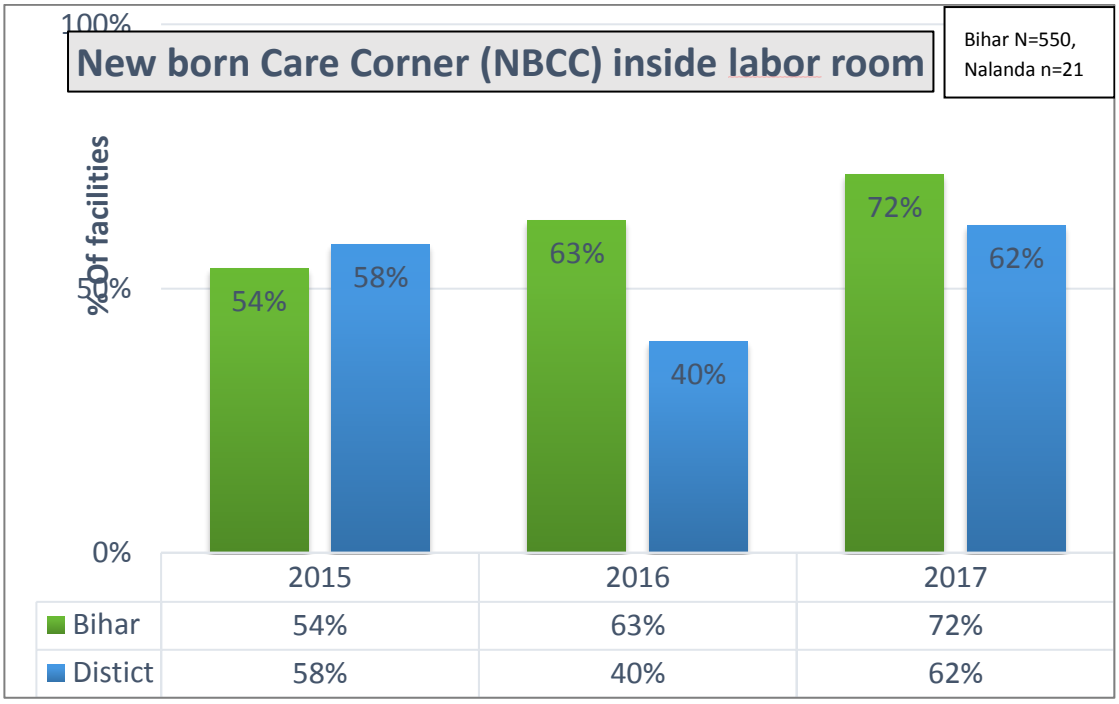


Figure 6 Represents the percentage of facilities having NBCC inside labor room

Walls and floors covered with tiles

Labor room having walls and floor covered with tiles represents the quality of infrastructure. Facilities having floor fully covered with tiles show positive trends from the year 2015 to 2017 where Nalanda is little way forward.

By the year 2017 only one third of the facilities have walls completely covered with tiles which is a representation of poor infrastructure of public health facilities both in Nalanda and overall in Bihar

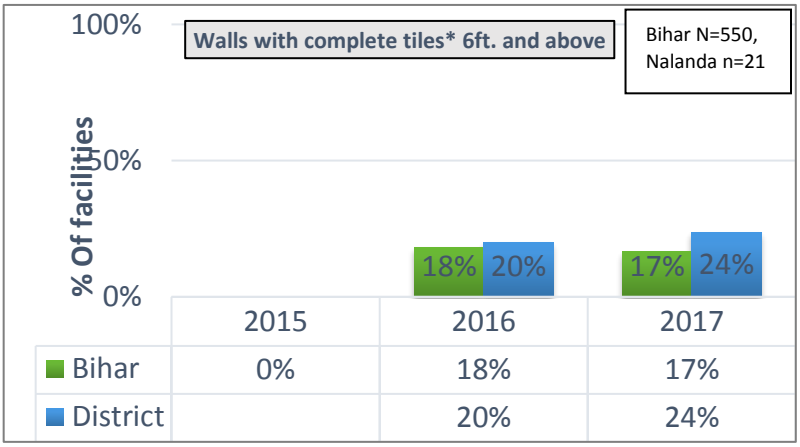
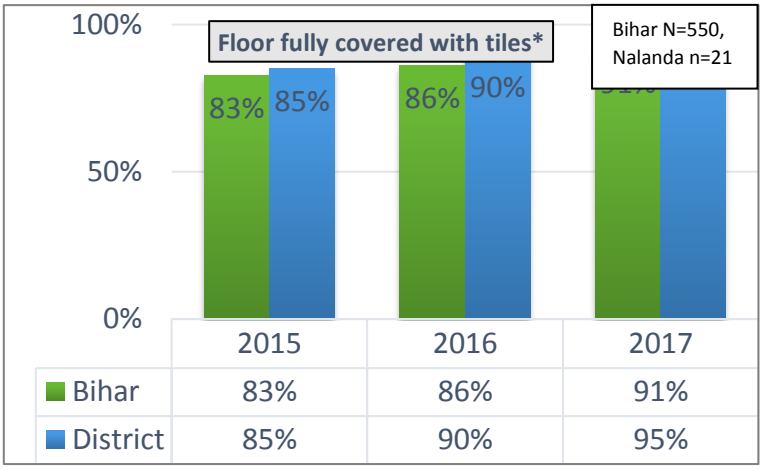


Figure 7 Represents the percentage of facilities having complete tile*6ft and above

Figure 8 Represents the percentage of facilities with floor fully covered with tiles



Signs of water seepage

Sign of water seepage depicts the poor quality of infrastructure and preferably act as major source of infection. Considering Nalanda picture over a period of 2015 till 2017, signs of water seepage shows increase trend in all three possible parts i.e., in any of the brick wall(40% to 67%) ,concrete roof only(50% to 52%), both concrete roof and brick wall(20% to 48%).Considering the most important indicator is seepage from both concrete roof and

brick wall which require immediate infrastructure changes and intervention to close the infrastructural gaps

Figure 9 Represents the percentage of facilities with sign of water seepage in Nalanda district

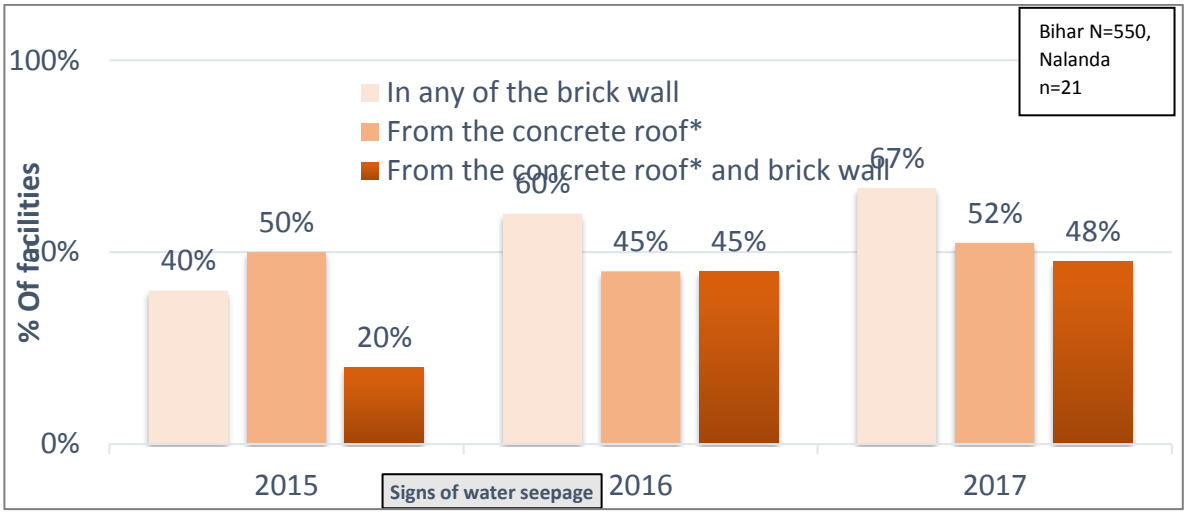
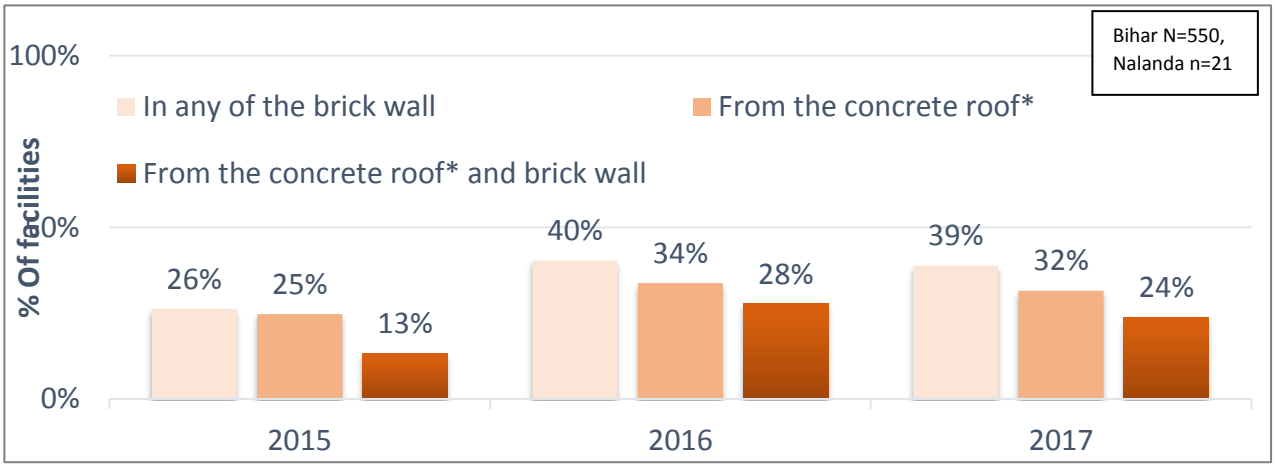


Figure 10 Represents the percentage of facilities with the signs of water seepage in Bihar



Presence of elbow tap handwashing station

Bihar has still few facilities (6 percent) where hand washing station are unavailable besides it Nalanda district handwashing facilities were available in all facilities. Provision of Elbow taps and continuous 24x7 running are very important aspects for ensuring safe delivery, sanitation and for maintenance of hygiene. From the year 2015 till 2016 increase in trend was observed whereas percentage of facilities having hand washing station declines in the next consecutive year.

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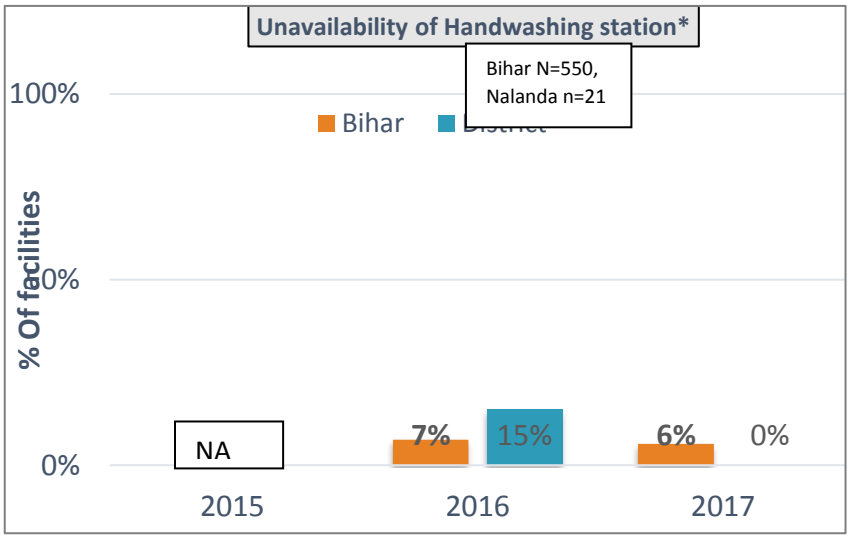


Figure 11 Represents the percentage of facilities where handwashing stations are unavailable

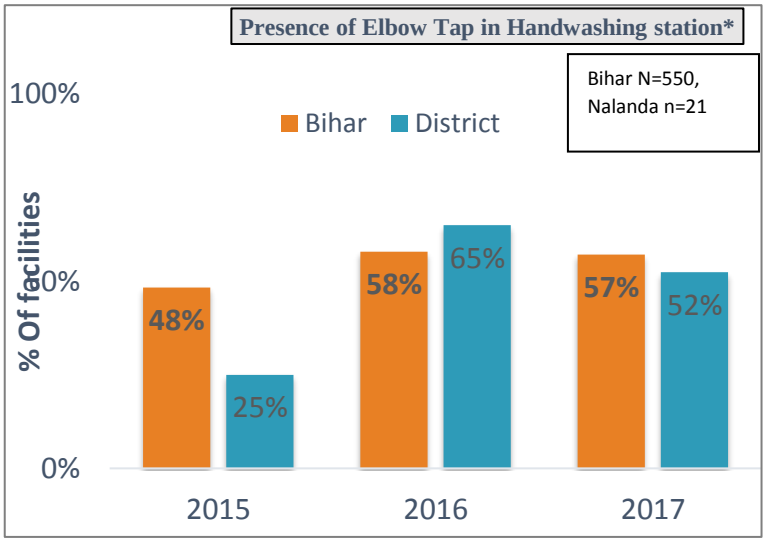


Figure 12 Represents the percentage of facilities having Elbow tap in handwashing station

Provision of Power Back(Generator)

Avoiding maternal and newborn mortalities are the biggest challenge and labor room is the place where the risk for mother and newborn is even more if the basic infrastructure is not adequate and functional. Therefore, Power Backup was chosen as an indicator to ensure that there would be continuous power supply in the labor room. Both Bihar and Nalanda district facilities have hundred provision of power backup.

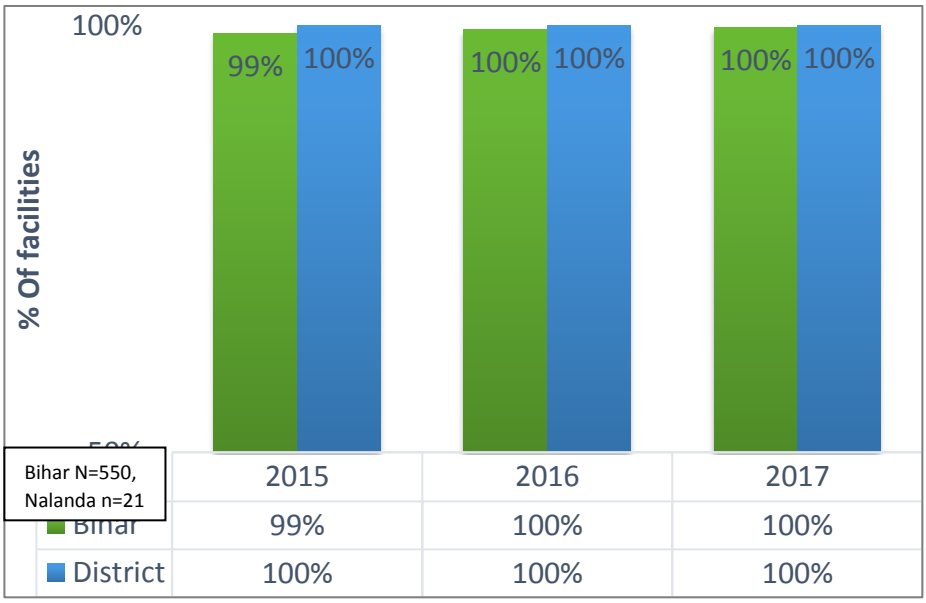


Figure 13 Represents the percentage of the facilities having labor room covered with tiles

2.Stock in situation of Consumables and Commodities

A. Reproductive health

B Maternal health

C. Neonatal health

D. Child health

Reproductive Health

According to WHO, Reproductive health is defined as a state of complete physical, mental and social well-being in all matters related to reproductive system. It infers that people can live a satisfying. safe reproductive life and capability to reproduce with freedom of decision making.

Therefore, to tackle the issue related to "unmet needs" GOI provide bucket of choices for maintaining healthy reproductive life. These consumables include oral contraceptives pills, emergency contraceptive pills, Condoms, IUCD 380A.IUCD 375, Emergency pregnancy kit. Results in table () depicts the stock – in status of consumables where availability of fee consumables like oral contraceptives pills, emergency contraceptive pills, Condoms, declined up to half as compared to the previous years in both the State and Nalanda district. Sharp decline in the stock of pregnancy testing kits was observed in Nalanda where focus is required.

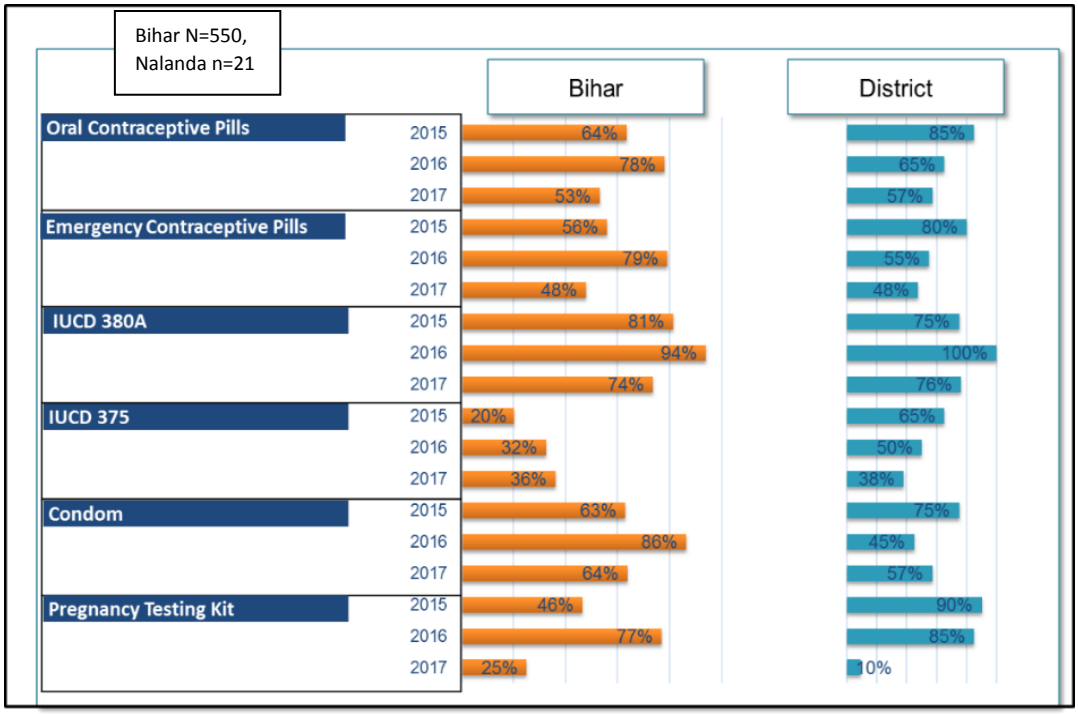


Figure 14 Represents the percentage of stock-in situation of the facilities for essential drugs and commodities required for reproductive health

Maternal health

According to WHO, Maternal health refers to the health of the women during pregnancy, childbirth and the postpartum period. Motherhood sometimes comes with most of the positive and fulfilling experience, whereas for some women it become suffering, life-threatening condition. Therefore, availability of essential drugs and commodities are mandatory for positive maternal outcomes.

Figure 15 provides the status regarding availability and regular supply of essential drugs and commodities essential for the maternal health .it was observed that there are gaps in the availability of the drugs like calcium gluconate, magnesium sulphate, oxytocin .and the stock situation depicts irregularity in the supply. Although other drugs and commodities like fetal doppler Also show decline in the percentage among the facilities of Nalanda and overall in Bihar

Drugs especially labetalol and methyl dopa are completely in stock out situation from last three years in the district. Nifedipine also show very less in availability both in district and Bihar (14 percent and 18 percent.)

Comparing the availability of the Antibiotics from the year 2015 to 2017 sharp decline was observed for the drugs like amikacin and ampicillin and other drugs also show the irregular supply

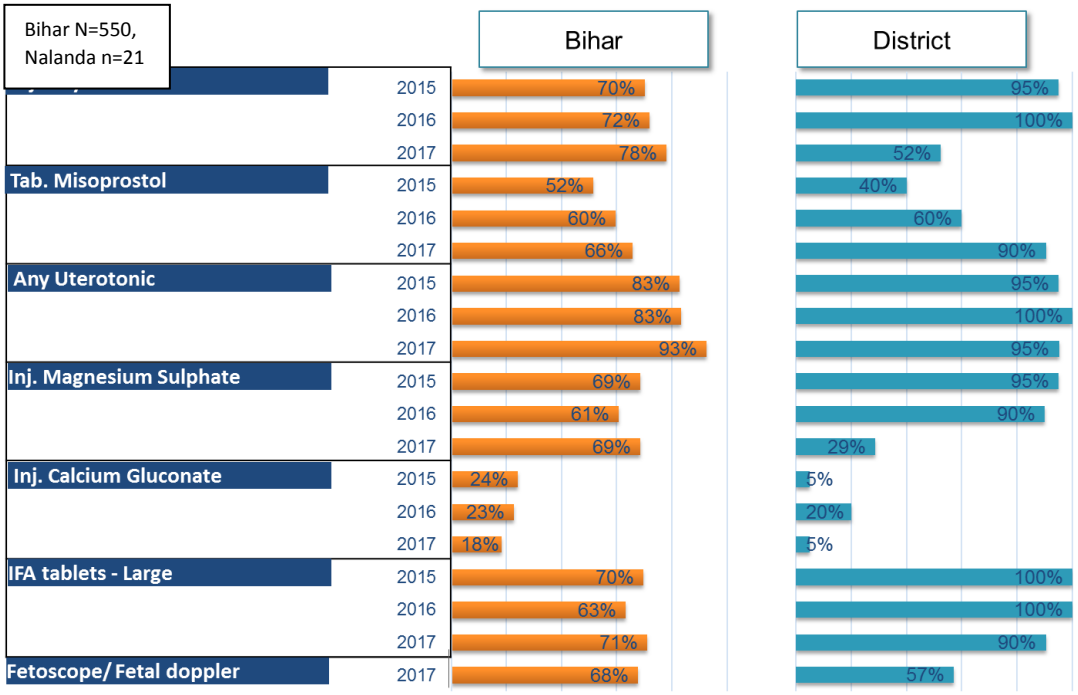


Figure 15 Represents the percentage of stock-in situation of emergency drugs and commodities required in labor room

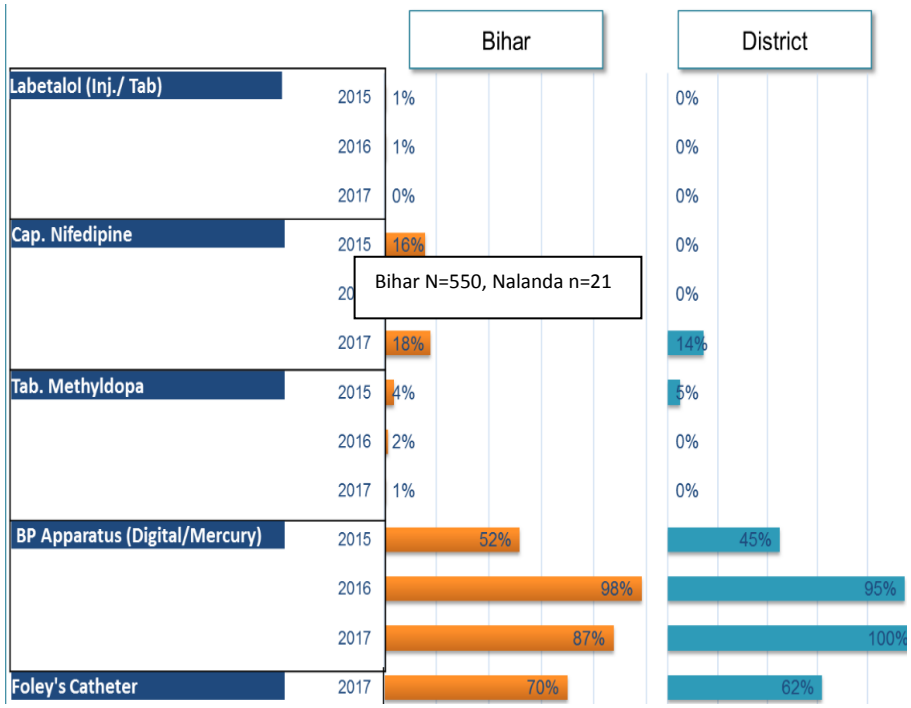


Figure 16 Represents the percentage of stock-in situation of essential drugs and commodities required in the labor room

Figure 17 Represents the percentage of stock-in situation of antibiotics available in the labor room

Neonatal health

Newborn care corner is mandatory for all labor rooms which require special commodities and essential drugs. Availability of vitamin K, mucus extractor, newborn weighing machine, ambu bag towel, neonatal mask gradually increasing. still more focus is required for the procurement and stock management

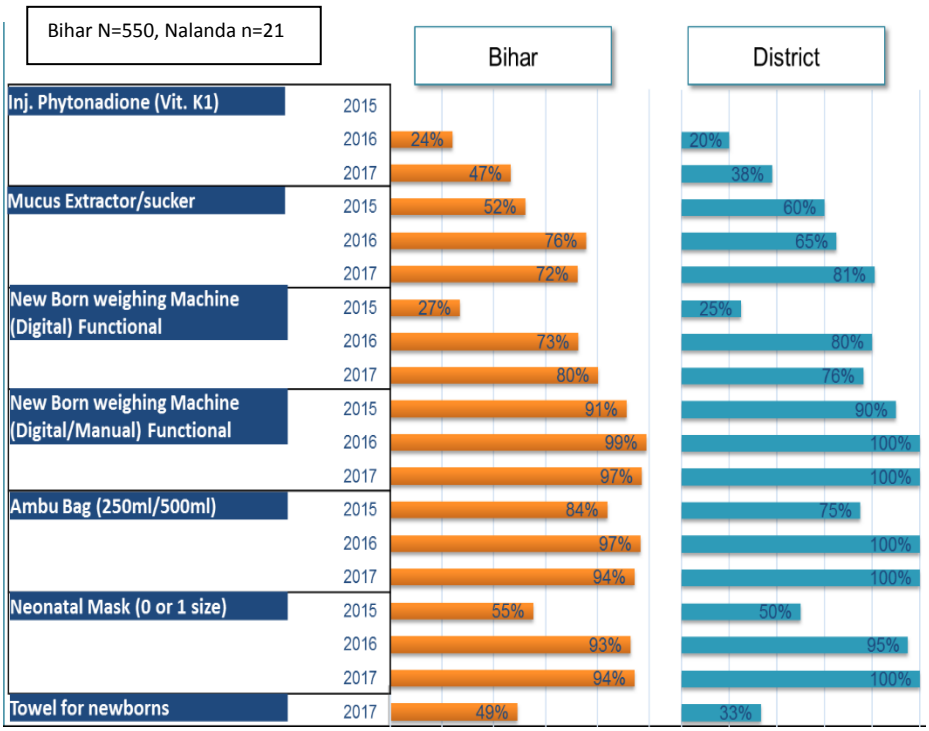


Figure 18 Represents the percentage of stock-in situation of commodities available in NBCC

Child health

Figure 19 depicts all the essential drugs and commodities required for the child health. Availability of drugs like Zinc sulphate, Vitamin A, syrup IFA were very less for District as compared to Bihar, whereas Syrup Salbutamol was unavailable at the time of survey.

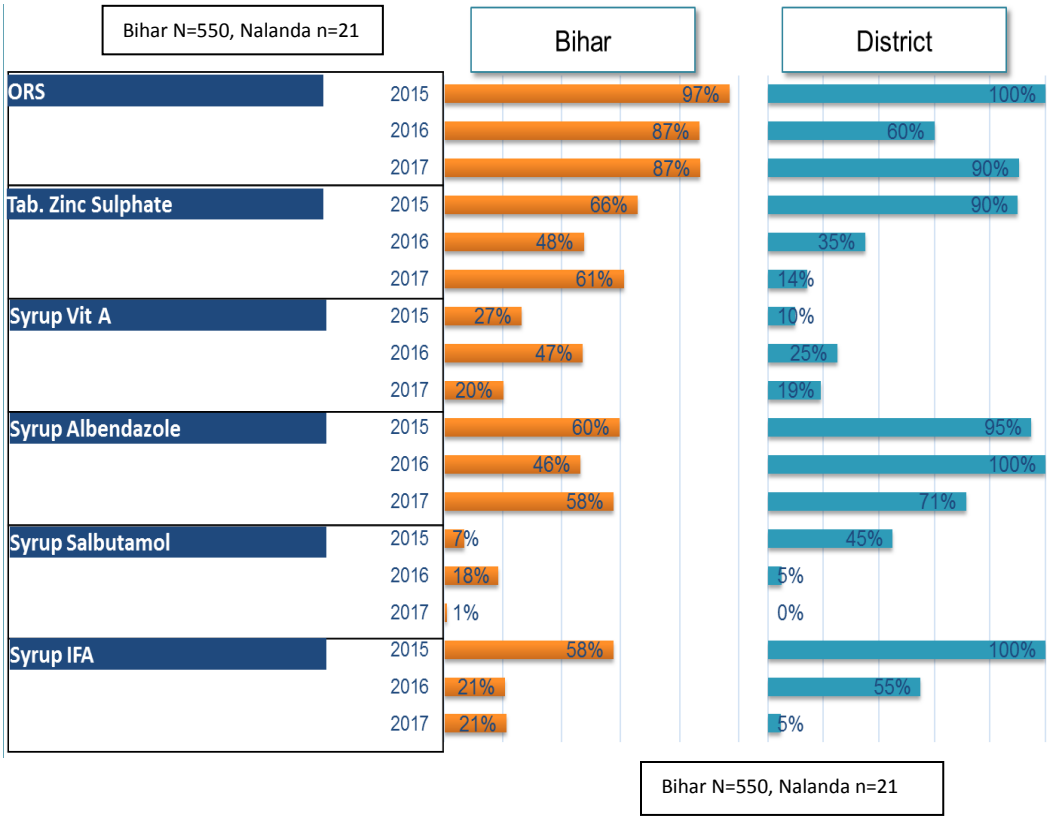


Figure 19 Represents the percentage of the availability odf drugs essential for child health

3 Infection control

Infection control and maintenance of hygiene maintenance of the labor room is a very important aspect for infection control and plays an important role in reducing the transmission of infection to both mother and newborn deaths. General cleaning of hospitals and clinics, including floors, walls, equipment, tables, and other surfaces.

Standard cleaning practices and adequate and timely cleaning should be done. Few indicators choose for monitor. following are the for-infection control.

A. Frequency of cleaning floor of labor room

B. Agents used for cleaning the floor of labor

C. Frequency of cleaning labor table

D.Agents used for cleaning the labor table

E. Availability of colored bins

Frequency of cleaning floor of labor room

It was observed that frequency of cleaning labor room floor after every delivery was only 50 percent for Bihar whereas for Nalanda situation is better (71 percent).

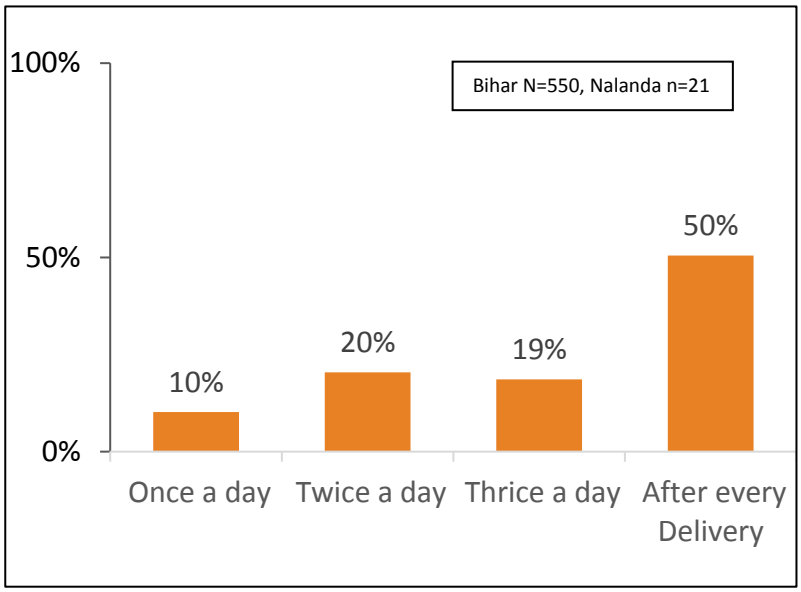
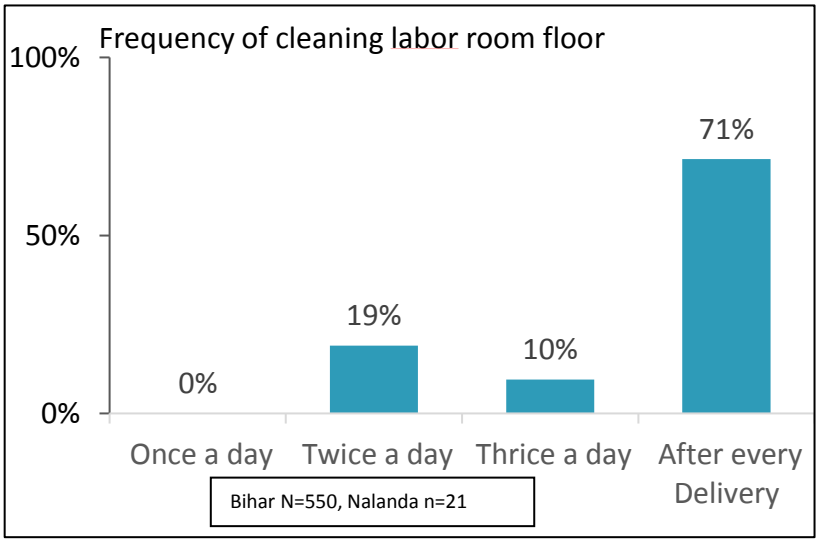


Figure 20 Represents the percentage of the frequency of cleaning labor room floor in Bihar facilities

Figure 21 Represents the percentage of frequency of cleaning labor room in overall facilities of Nalanda district



Agents use for cleaning the labor room floor

In Bihar most of the facilities use hypochloreite as cleaning agent followed by Detergent and simple water whereas in Nalanad District Detergent was used most frequently followed by hypochlorite solution ,water and phenyl soution

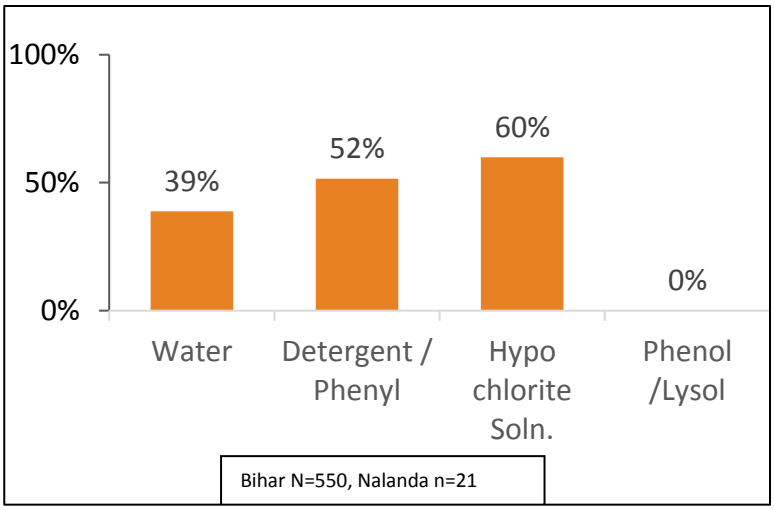
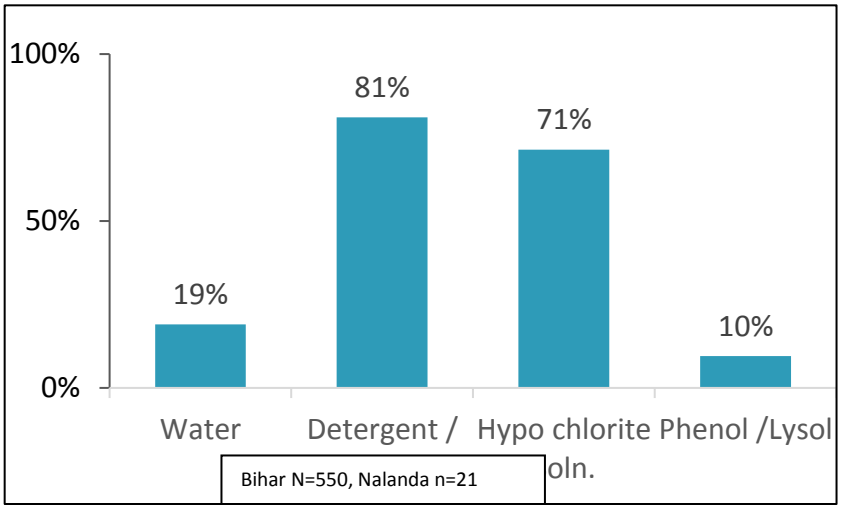


Figure 22 Represents percentage of different cleaning agents used in cleaning labor room floor in Bihar facilities

Figure 23 Represents the percentage of different cleaning agents used for cleaning labor room floor in Nalanda district



Frequency of cleaning labor table

Frequency of cleaning labor table after every delivery was observed less in Nalanda district as compared to Bihar facilities. Still there are few facilities where ideal practices were not being followed. More emphasis is required to improve the maintenance of hygiene of the facilities

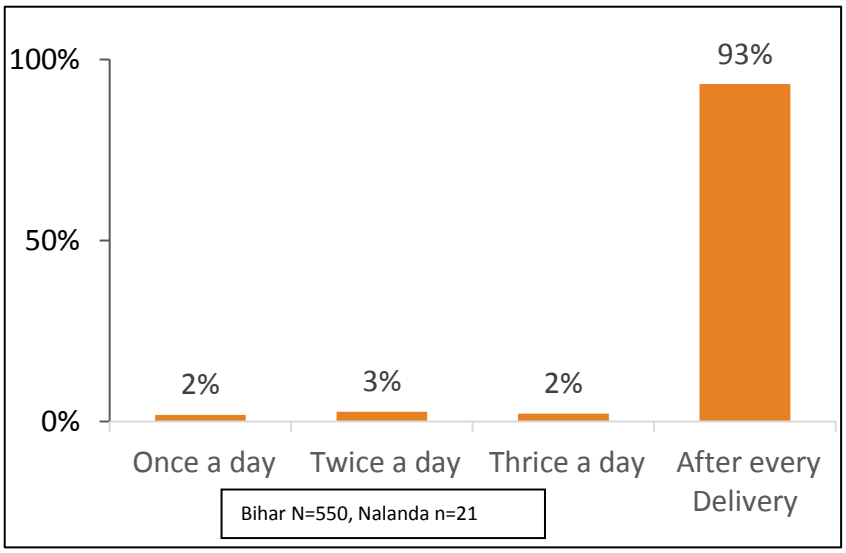


Figure 24 Represents the percentage of frequency of cleaning labor table in the facilities of Bihar

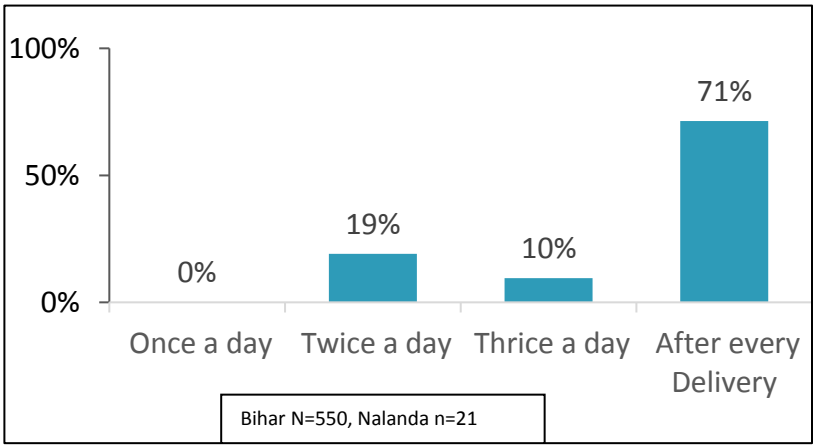


Figure 25 Represents the agents of cleaning labor room floor in Bihar Facilities

Agents used for cleaning the labor table

It was observed that most of facilities use hypochlorite and detergent for cleaning the labor tables both Bihar and Nalanda district whereas there are some facilities were using only water only both in Bihar (39 percent) and Nalanda (19 percent).

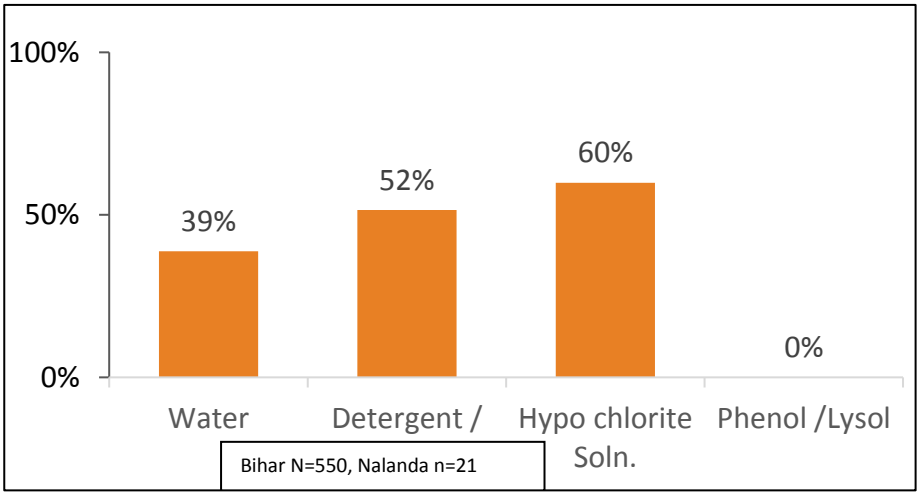
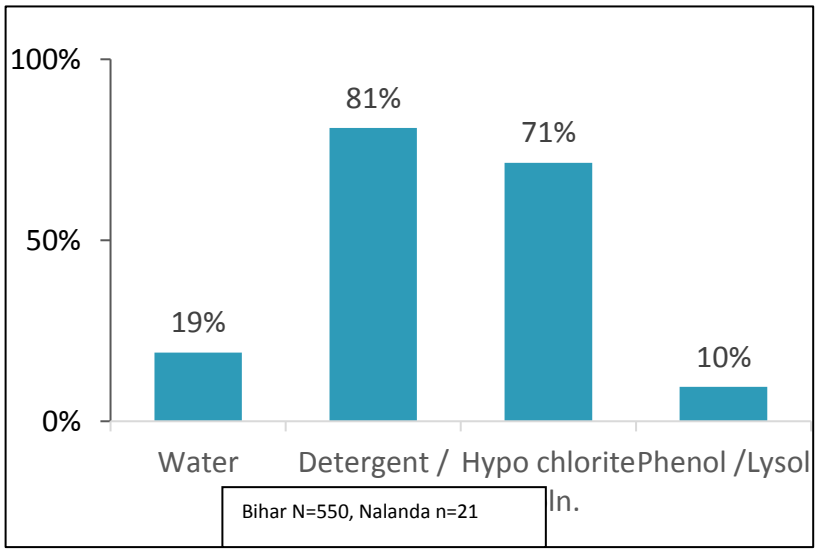


Figure 26 Represents the percentage of the usage of different cleaning agent used in the cleaning of labor table in Bihar facilities

Figure 27 Represents the percentage of the usage of different cleaning agent used in the cleaning of labor table in Nalanda facilities



Availability of colored bins

Biomedical wastes are **defined as** any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals, and including categories mentioned in Schedule I, of the BMW rules, 2016.

It is mandatory to follow color coded bins in all the facilities for the waste management.it was observed that both in Bihar and Nalanda district white and blue colored bins are less whereas over all availability of bin for Nalanda (5percent) and Bihar (3 percent) is very low. Therefore, much attention is needed in terms of availability of the color-coded bins in all public facilities.

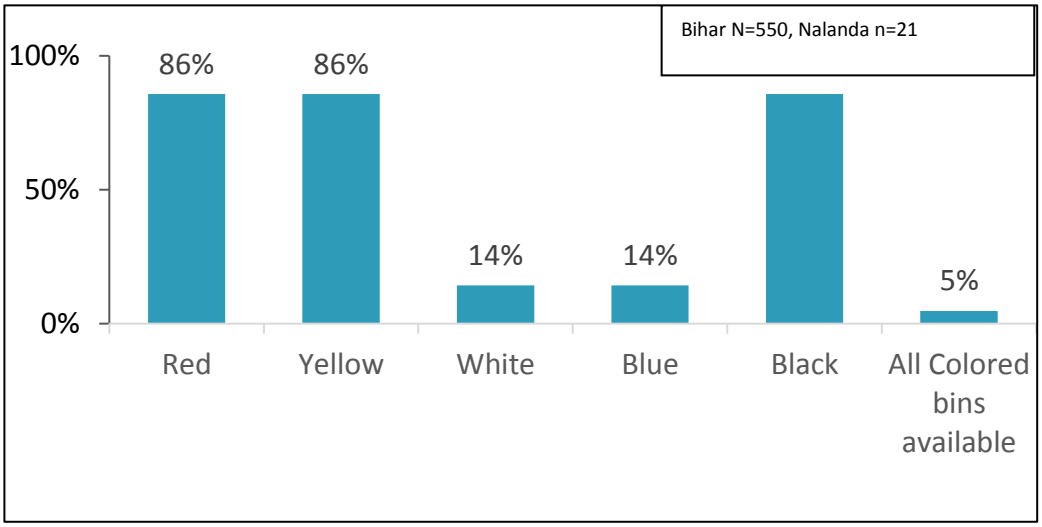


Figure 28 Represents the percentage availability of colored bins of Nalanda

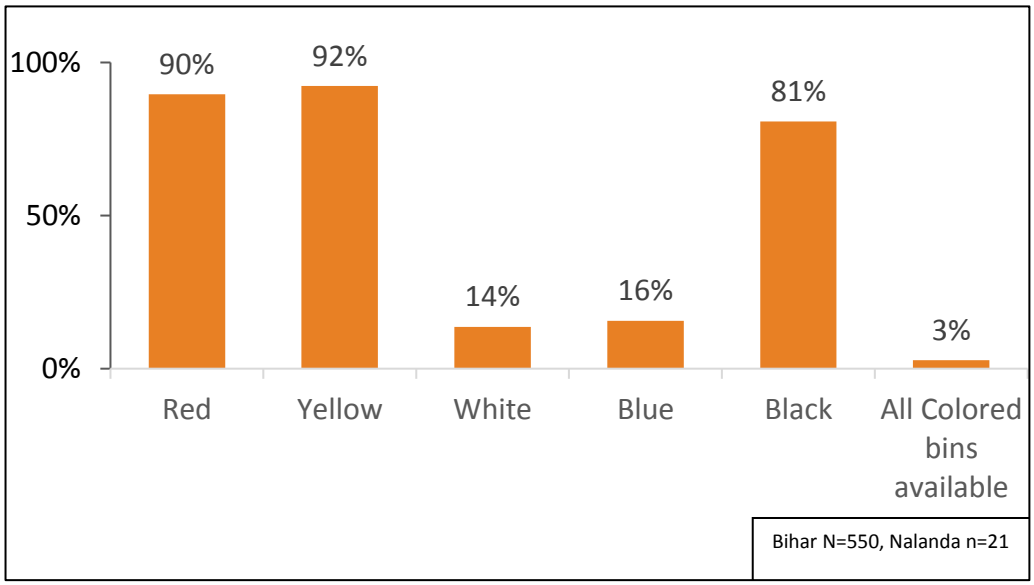


Figure 29 Represents the percentage of availability of colored bins of Bihar

CONCLUSION:

One of the major indicator that outlines smooth functioning of health system is Safe motherhood and maintenance of universal quality. Findings of the facility readiness through system strengthening in Nalanda Bihar reveals an indicative picture of the general condition of Labor room in Nalanda district and a comparison to overall Bihar. When we compare the findings of the assessment with the standard guideline we observe many gaps regarding indicators like infrastructure, equipment's, availability of important drugs and consumables, infection control and bio medical waste related gaps which will need extra focus to match to the standard adherence of protocol. We have seen sharp increase in infrastructure related gaps as well as decrease in negative indicator like water seepage from wall and roof in Nalanda over several round but overall condition in Nalanda as well as in Bihar needs special attention to achieve universal. A paramount consideration in public health facilities is to maintain hygiene practices, considering Nalanda picture the infection control practice of cleaning floor and labor table in on a better side but availability of elbow taps and handwashing station as well as all bio medical waste bins are on the poorer side which directly will affect handwashing practice and disposal of bio medical waste generated. Moreover, the graph on stock in of important complication related drug have increased over last rounds but when compared to Bihar the availability is poor. Nalanda district needs to focus on increasing stock in for antihypertensive as well as new born related drugs such as Inj. Vit K. The findings from the assessment provides a wealth of important insights on the aspects that needs improvement, that can be achieved by collective decision of government counterpart by being an important consideration in making Block level and district level action plan. However, the data as collected is a cross-sectional data hence findings must be treated with utmost precaution specially drug stock in indicator. In future we must consider rolling out serial cross-sectional data collection to get overall picture of gap closure as well as we can design separate evaluation strategy to assess drugs and predict their buffer and safety stock to get a better and deeper understanding on facility readiness.

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