"A study on Knowledge and Practice of Child Immunization among Auxiliary Nurse Midwives"

A dissertation submitted in partial fulfillment of the requirements

For the award of

Post-Graduate Diploma in Health and Hospital Management

By

Ajay Singh Shekhawat

PG/11/005

International Institute of Health Management Research
New Delhi

110075

(April, 2013)

Office of Incharge Medical Officer, Refferal Hospital Barari, Katihar

Letter No. 316 Date. 26/4/13

TO WHOM IT MAY CONCERN

This is to certify that Mr. Ajay Singh Shekhawat has successfully completed his dissertation project period in our organization from 7th of February, 2013 to till date as Hospital Manager at Refferal Hospital, Barari, Katihar. During this intern he has worked on the project "A study on Knowledge and Practice of Child Immunization among Auxiliary Nurse Midwives of Barari Block, Katihar" under my guidance at Refferal Hospital, Barari, Katihar.

I hereby appreciate his efforts and wish him best of luck for his future assignments

प्रभारी चिकित्सा पदाधिकारी
बरारी (कटिहार)

Dr. B. N. Mishra
MOIC
Refferal Hospital, Barari
Katihar

Certificate of Approval

The following dissertation titled "A STUDY ON KNOWLEDGE AND PRACTICE OF CHILD IMMUNIZATION AMONG AUXILIARY NURSE MIDWIVES OF BARARI BLOCK, KATIHAR" is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation

Name Signature

Dr. Sweety

Dr VINAY TRIPATHI

Dr Dharmesh Col

Name of Student

Ajay singh shekhawat

Certificate from Dissertation Advisory Committee

This is to certify that Mr. Ajay Singh Shekhawat, a participant of the Post- Graduate Diploma in Health and Hospital Management, has worked under our guidance and supervision. He is submitting this dissertation titled "A study on Knowledge and Practice of Child Immunization among Auxiliary Nurse Midwives of Barari Block, Katihar" in partial fulfillment of the requirements for the award of the Post- Graduate Diploma in Health and Hospital Management.

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

Faculty Mentor
Mr Vinay Tripathi
Assistant. Professor
IIHMR, New Delhi

Organizational Advisor
Dr B. N. Mishra
MOIC
Refferal Hospital, Barari, Katihar

FEEDBACK FORM

Name of the student: Ajay Singh Shekhawat

Dissertation Organization: Referral Hospital Barari, at State Health Society Bihar

Area of Dissertation: working as Hospital Manager (FRUs)

- Plan, organize, direct, control and coordinate day to day activities of the Hospital.
- Planning and implementing strategic changes to improve service delivery.
- Managing clinical, professional and administrative staff

Dissertation Topic:"A study on Knowledge and Practice of Child Immunization among Auxiliary Nurse Midwives of Barari Block, Katihar"

Attendance: He was regular and on time

Objectives achieved: He fulfilled the objectives of the organization

Strengths: Hard working and Good HR skills

Suggestions for Improvement: would suggest him to improve his writing skills in Hindi as it is required for official reporting.

Signature of the Officer-in-Charge(Dissertation)

Date: 06/06/13 .

Place: Katihar, Bihar.

Executive Summary

Immunization is a proven tool for controlling and eliminating life-threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations. Ever since the launch of Expanded Program on Immunization (EPI) in 1978 and Universal Immunization Program (UIP) in 1985 with promotion through Child Survival and Safe Motherhood (CSSM) program and RCH in 1997 there has been considerable progress in control of vaccine preventable diseases, in spite of this still large number of children continue to be afflicted with vaccine preventable diseases every year.
The purpose of this article is to assess the Knowledge and Practices about immunization among Auxiliary Nurse Midwives.

It is a cross sectional study. 51 ANM's of the Barari block were taken as respondents for the study population. The data was collected by interviewing the ANM's through a semi-structured questionnaire and analysis was done through SPSS V.16.

The current study shows that the knowledge regarding child immunization is a point of concern among the ANM's who were interviewed at the Referral Hospital, Barari during the course of the study. Only 16 percent of the ANMs are aware about the proper dosage of BCG vaccine. It is significant to notice that half of the total respondents were not aware of proper definition of a fully immunized child. In the study population it was found that ANM's are at good practice.

There is a need to increase technical knowledge along with continuous motivation amongst the ANM's highlighting the importance of immunization, adverse effects of vaccines and proper handling of the cold chain.

ACKNOWLEDGEMENT

At the completion of my dissertation I would like to show my sincere gratitude to State Health Society, Bihar for giving me the opportunity to work for the Referral Hospital, Barari, Katihar. I wish to express my deep sense of gratitude to Dr Yogendra Prassad; Respected Civil Surgeon cum Chief Medical Officer, Katihar for constant help, able guidance, valuable suggestions and inspiration. He was kind enough to give his valuable time whenever required. A deep thanks goes to Dr B.N.Mishra; MOIC, Referral Hospital – Barari for his guidance and constant support. Special thanks to all the ANM's for their constant support. I would also like to convey my thanks to all the DHS and RPM unit members.

Needless to mention that Dr. Vinay Tripathi, Assistant professor at IIHMR Delhi, my mentor was always supportive to me and gave his valuable feedbacks if and when required. A special thanks to you, Sir. At this note I would like to thank all the respected faculty members and staffs of IIHMR Delhi for being kind to me. Finally, yet most importantly, i would like to express my heartfelt thanks to my beloved parents for their blessings, my friends/classmates for their help and wishes for the successful completion of this project.

Ajay Singh Shekhawat

PG/11/005

CONTENTS

List of Tables

List of Figures

LIST OF APPENDIX

ABBREVIATIONS

ANM	Auxiliary Nurse Midwifery
ARSH	Adolescent Reproductive and sexual Health
ASHA	Accredited Social Health Activist
AWC	Anganwadi Centre
AWW	Anganwadi Worker
BCC	Behavioural change Communication
BPL	Below poverty Line
BEmOC	Basic emergency Obstetric Care
CEmOC	Comprehensive emergency Obstetric Care
CBO	Community Based Organization
CDR	Crude Death Rate
CEO	Chief Executive Officer
CMR	Crude Mortality Rate
DHS	Directorate of Health services
DPT	Diphtheria, Pertussis and Tetanus Vaccine
DPMU	District Programme Management Unit
GNM	General Nursing and Midwifery
GO	Government Order
GOI	Government of India
HIV	Human Immunodeficiency Virus

PART I

1. INTRODUCTION OF THE ORGANIZATION

The Referral Hospital, Barari is located at Barari block, Katihar in Bihar. It was given the certificate of a referral in 1984. The premise is around 5 acres. Currently it has 30 functional beds with a labor room.

The total population of Barari is around 275700.There are 28 sub-centers under Referral Hospital Barari. The Out-Patients Department (OPD) consists of. General Medicine. On an average more than 250 patients are given consultation & treatment every day. The scheduled OPD timings are (i) Morning 8am to12 o'clock and (ii) Evening 4pm-6pm. The pathology, radiology diagnostics services and drug distribution center for OPD simultaneously runs with OPD. The hospital does provide round the clock emergency facilities at emergency department as well as Obstetrics department with a well-equipped labor 6 bedded rooms with a New Born Care Corner. One separate operation theatres are functional for general surgery and family planning operations. The average bed occupancy per day varies between 90 to 120 per cent.

Special care is taken for maternal patients as all essential services are provided at free of cost. Institutional delivery incentive cheques are being distributed at bedside of the patient immediately after delivery, to avoid unnecessary chaos. On an average 150 deliveries are performed every month. All newborns soon after birth are put on NBCC before shifting to ward.

2. DUTIES AND RESPONSIBILITIES

Being a Hospital Manager of Referral Hospital, I need to perform the following duties

- Plan, organize, direct, control and coordinate day to day activities of the hospital.
- Developing procedures for medical treatments, as well as ensuring quality assurance and other patient services.
- Extrapolating data for quality assurance and monitoring purposes.
- Planning and implementing strategic changes to improve service delivery.
- Managing clinical, professional, clerical and administrative staff.
- Procurement of equipment and supplies, and organizing stores.
- Active participation in hiring contractual doctors, nurses and assistant.
- Liaise with clinical and non-clinical staff in other health facility, partner organizations.
- Public relations, ensuring that the facility maintains a positive image.
- Keeping up with ever changing medical technology, government regulations, financing options and health insurance benefits.
- Implementing new policies and directives.

Part II

1.Introduction

Immunization is a universally accepted tool for reducing the impact of severe life-threatening infectious diseases and is expected to prevent 2 and 3 million deaths every year [1]. It is the most economical preventive health intervention, with systematically proven approaches which makes it reachable to even geographically inaccessible areas and to most susceptible population. Since the introduction of Expanded Program on Immunization (EPI) in 1978 and Universal Immunization Program (UIP) in 1985 along with the promotion through Child Survival and Safe Motherhood (CSSM) program and RCH in 1997 there has been significant improvement in the control of vaccine preventable diseases, irrespective of this efforts still a large number of children are suffering with vaccine preventable diseases every year.

In 2011, an estimated 83% (107 million) of infants worldwide were vaccinated with three doses of diphtheria-tetanus-pertussis (DTP3) vaccine. The American, European and Western Pacific region maintained over 90% DTP3 immunization coverage. In 2011, 162 countries worldwide achieved 80% or more immunization coverage with DTP3 vaccine as compared to 158 in 2010. The number of countries reaching over 90% DTP3 coverage remained at 130 in 2010 and 2011. [2]

The Expanded Program on Immunization was established by WHO in 1974 with the motive to ensure that all children had access to routinely recommended vaccine. Global coverage with the third dose of diphtheria–tetanus–pertussis vaccine (DTP3) had a significant increase from <5% in 1974 to 79% by 2005[2]. However, there was lot of scope to improve access to routine immunization in low-income countries as the children were still not fully vaccinated. In India, with the joint efforts of WHO and UNICEF the Global Immunization Vision and Strategy (GIVS) was established to provide support to national immunization programs so as to reduce morbidity and mortality associated with vaccine preventable diseases. One of the major objectives of the strategy for all the countries worldwide was to accomplish and sustain 90% national DTP3 coverage. It was estimated that 83% of infants worldwide received at least 3 doses of DTP vaccine in 2011, which was more or less similar to coverage in 2009 (83%) and 2010 (84%). Among 194 WHO member states, 130 (67%) achieved ≥90% national DTP3

coverage [3]. More than half of all incompletely vaccinated children live in 3 countries: India (32%), Nigeria (14%), and Indonesia (7%). Among all incompletely vaccinated children, 62% never received the first DTP dose (DTP1), and 38% started but never completed the series [1].

The Global Vaccine Action Plan (GVAP) provides a platform to avert millions of deaths by providing equitable access to vaccines. Countries worldwide are aiming to achieve vaccination coverage of ≥90% nationally and ≥80% in every district by 2020[2].While the main objective of GVAP is to speed up control of all vaccine-preventable diseases, the eradication of polio is set as the first milestone. It also aims to spur research and development for the next generation of vaccines. WHO is leading efforts to support all the countries to adapt GVAP for implementation along with other stake holders—UN agencies, governments, global agencies, development partners, health professionals, academics, manufacturers and civil society.

The last week of April each year is marked by WHO and partners as World Immunization Week. During this week all the member nations are expected to mark the week with activities including vaccination campaigns, training workshops, round-table discussions and public information campaigns. It aims to increase public awareness of how immunization saves lives, encouraging people everywhere to vaccinate themselves and their children against deadly diseases.

Strengthening of routine immunization services, with more focus in countries with the highest number of under-vaccinated children, should be a global priority to help achieve the fourth Millennium Development Goal and to reduce mortality among children <5 years of age by two-thirds from 1990 to 2015.

2.Review of Literature

1) **Naveen Thacker et al.** (2013) conducted a study to assess the attitude and practices of frontline health workers in India regarding polio immunization in UP and Bihar.

   Multi staged sampling method was used to select the ANM's and ASHA's at the block level and structured questionnaire was used to collect the information.

   The findings revealed that majority of the health workers (95%) agreed that polio supplementary immunization campaign helped in increasing acceptance of all vaccines. It was also found that majority of the ANM (60-70%) believed that polio immunization activities benefited other activities they were carrying out. On the other hand very few health workers (5%) felt that they very likely to face resistance when promoting or administering polio vaccine.

2) **Joseph L Mathew** conducted a systematic review study to identify and explore factors associated with inequities in routine vaccination of children in India.

   Information was collected from publications reporting vaccination inequity through a systematic search of Medline and websites of the WHO, UNICEF and demographic health surveys in India.

   The findings revealed that there are considerable inequities in vaccination coverage in different states based on various factors related to individual, family, demographic and the society characteristics. Girls fare uniformly worse than boys and higher birth order infants have lower vaccination coverage. It was also found that urban infants have higher coverage than rural infants and those living in urban slums. There is a direct relationship between household wealth and vaccination rate.

3) **N.Audinarayana** conducted a review study to examine influence of socio-economic, ecological, communication and health indicators on immunization status. The indicators included female literacy rate, per capital percentage living in urban areas, number of radio and TV sets per lakh population, percentage of birth attended by trained health personnel, percentage of one year old children fully immunized with BCG, DPT Polio and Measles.

Data for the present paper was collected mainly from The State of the World's Children, 1991, an UNICEF publication, and World Development Report. The findings revealed that female literacy and income exhibit large direct as well as indirect (through the AHS) effects on DPT and Polio. Unexpectedly female literacy direct effects on TT2, BCG and Measles are very small.

4) **Roos M. Bernsen et al.** conducted a study on Knowledge, Attitude and practice towards Immunizations among Mothers.

   The survey included 217 women attending maternity clinic and estimated the prevalence of a positive attitude towards immunization. Knowledge and attitude variables related to immunization of newborns were explored. The study findings revealed that around 93 percent of mothers had positive attitude towards immunization. Despite the current highly prevalent positive attitude towards immunization information by health professionals should focus more on parents with lower education.

3.0 Rationale of study

Universal immunization of children against the six vaccine-preventable diseases (namely, tuberculosis, diphtheria, whooping cough, tetanus, polio, and measles) is crucial to reducing infant and child mortality. According to the guidelines developed by the World Health Organization, children are considered fully vaccinated when they have received a vaccination against tuberculosis (BCG), three doses of the diphtheria, whooping cough (pertussis), and tetanus (DPT) vaccine; three doses of the poliomyelitis (polio) vaccine; and one dose of the measles vaccine by the age of 12 months. Only BCG should be given at birth or at first clinical contact, DPT and polio require three vaccinations at approximately 4, 8, and 12 weeks of age, and measles should be given at or soon after reaching 9 months of age [8].

In Katihar district, only 32.6 percent children are fully immunized. Children who have received BCG are 75 percent [9]. According to NFHS-3, only 44 percent of children aged 12-23 months are fully vaccinated which is a matter of concern as more than half of the infant of the country has not being fully immunized. Not all children who begin the BCG, DPT and polio vaccination series go on to complete them. According to Katihar DHAP 2013, the dropout rate between BCG and measles has increased up to 31 percent which is a matter of concern and the reason specified for this are poor service delivery, unavailability of vaccines and hard to reach immunization sites which shows that there is a gap between the service provider and the end point beneficiaries. Apart from this there are issues of vaccine storage, transport and administration, and factors such as knowledge and practices of health workers contribute to success or failure of immunization program.

Given this background, it was decided to conduct a study among ANM about knowledge and practices regarding child immunization.

4.1 General Objective

To assess knowledge and practice of child immunization among auxiliary nurse midwives of Barari block.

4.2 Specific Objectives

1) To assess the Knowledge of the ANM regarding immunization
2) To find out the practices carried out by the ANM's during immunization

5.0 Methodology

5.1 Study design: - cross-sectional study

5.2 Study Area: - Barari block of Katihar district

5.3 Study Duration: - Feb 2013 to April 2013.

5.4 Study Population: - All the ANM's of Barari block

5.5 Sample size: - 51(Total ANM's in Barari block)

5.6 Data collection tools and techniques: -

- Semi structured Questionnaire was formed
- Data was analyzed through SPSS V.16
- Secondary Data (List of ANMs according to their respective Health Sub-Centre) taken from BPMU unit Barari, Katihar.

5.7 Study Approach

The study was done in Barari block of Katihar District and data was collected by taking the interview of the ANM's of the respective Health Sub-Centre.

Inclusion Criteria- consists of all the ANM's working in the respective Health Sub Centre of Barari Block.

6.0 Study findings and discussion

6.1 Knowledge regarding proper dose and route about vaccination among ANMs

According to WHO guidelines, the proper dosage of BCG for infants is .05ml. and for child from >12 months it is .01ml. The route for the administration of BCG, DPT and measles are intradermal, intramuscular and subcutaneous respectively. The site for the administration of DPT and measles are anterior lateral part of thigh and outer aspect of arm respectively.

Table No.1

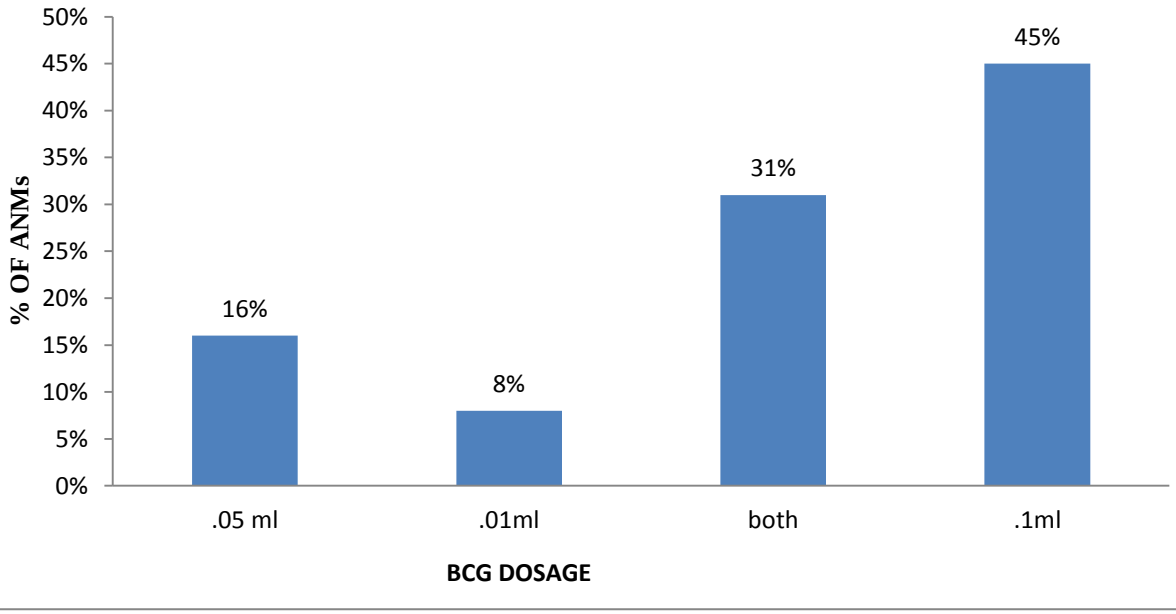
S.no	Question	Percentage
1	Knowledge regarding BCG dosage of infants	
	a) .1 ml	45%
	b).05ml	16%
	c) .01ml	8%
	d) .05 and .01ml both	31%
2	Knowledge regarding BCG route	
	a) intradermal	90%
	b) subcutaneous	8%
	c) no answer	2%
3	Knowledge regarding DPT route	
	a) intramuscular	78%
	b) no answer	22%
4	Knowledge regarding DPT site	
	a) anterior lateral part of thigh	98%
	b) no answer	2%

Only 16 percent of the respondents are aware about the proper dosage of BCG vaccine. However, Around 31 percent of the ANM's said both .05ml and .01ml dosage are given which shows a confused state among the ANM's.

5	Knowledge regarding measles route	
	a) Intra muscular	16%
	b) Intra dermal	4%
	c) subcutaneous	72%
	d) no answer	16%
6	Knowledge regarding measles site	
	a) outer aspect of the arm	100%

The major concern regarding BCG dosage is that 45 percent of the respondents said .1ml to be the correct dosage which is ten times the dosage given to a child >12 months of age. Over dosage to the new born infants can impose a serious threat to their lives. It was also found in the study population that, there was lack of knowledge regarding the route of administration of DPT and measles vaccine. Apart from this majority the respondents had good and correct knowledge regarding route and site of vaccines.

Fig.1-KNOWLEDGE REGARDING BCG DOSAGE



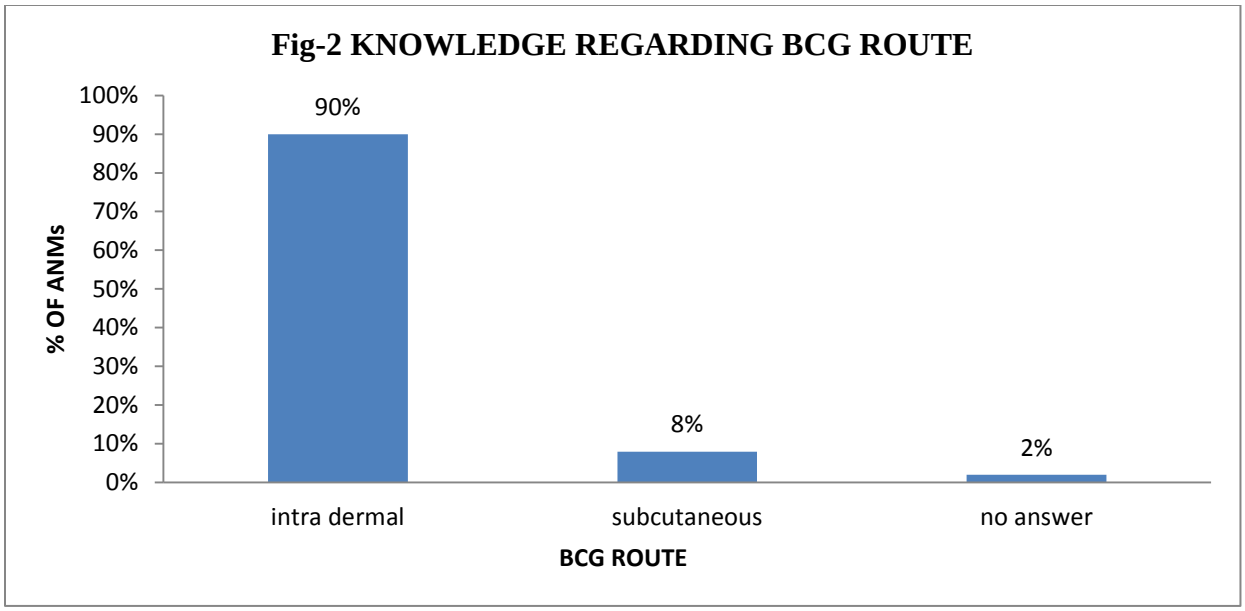


Fig-2 KNOWLEDGE REGARDING BCG ROUTE
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% OF ANMs
90%
8%
2%
intra dermal
subcutaneous
no answer
BCG ROUTE

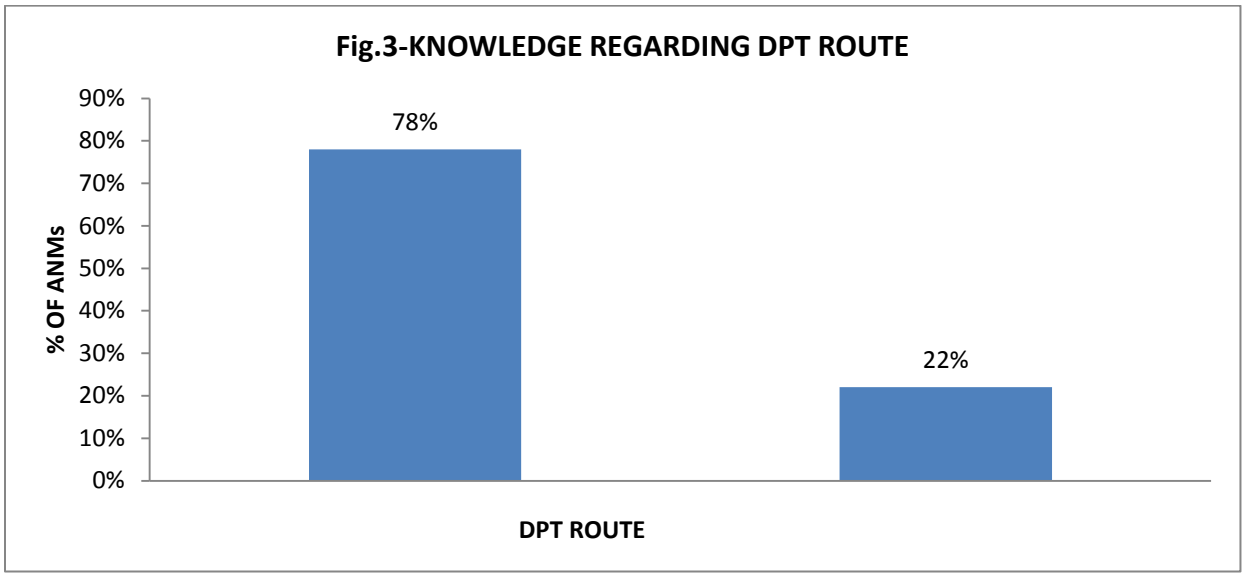


Fig.3-KNOWLEDGE REGARDING DPT ROUTE
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% OF ANMs
78%
22%
DPT ROUTE

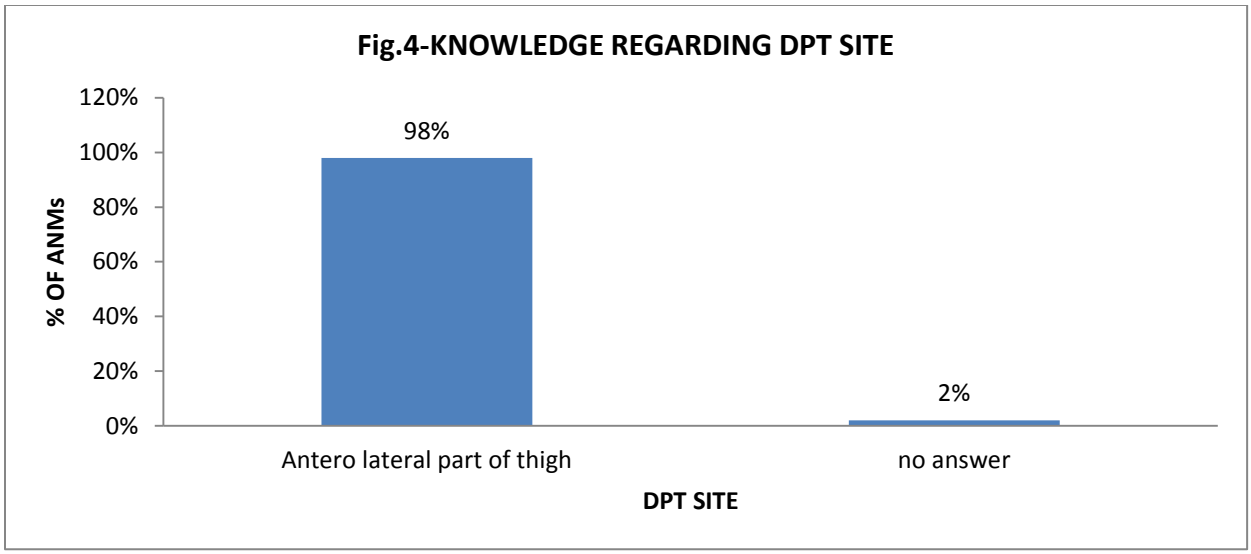


Fig.4-KNOWLEDGE REGARDING DPT SITE
120%
100%
80%
60%
40%
20%
0%
% OF ANMs
98%
2%
Antero lateral part of thigh
no answer
DPT SITE

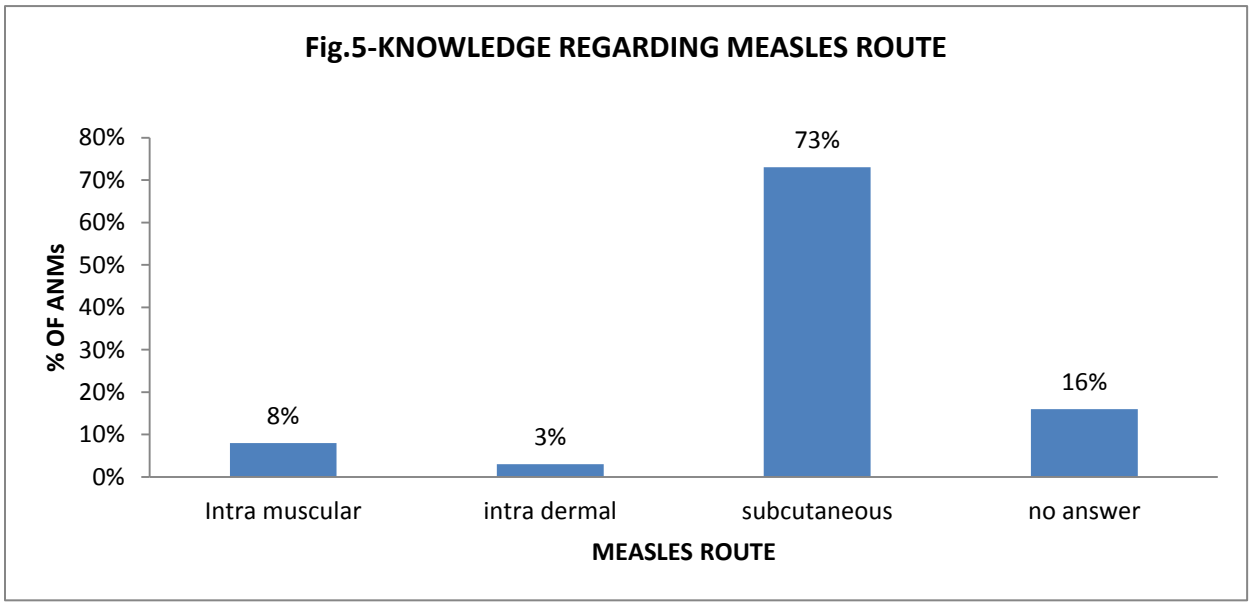
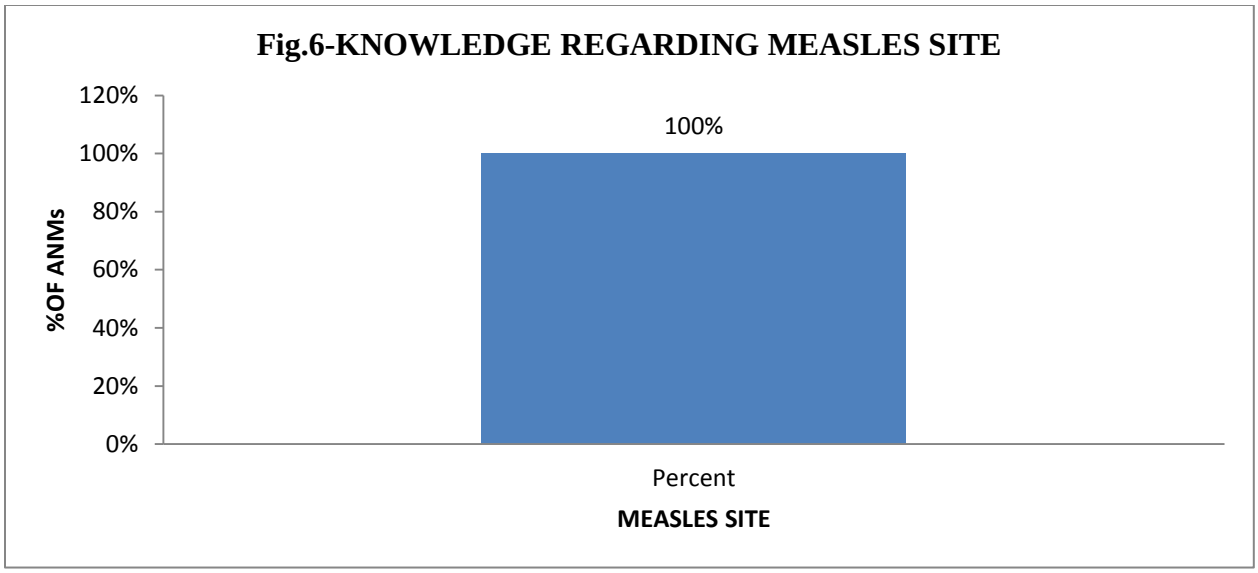


Fig.5-KNOWLEDGE REGARDING MEASLES ROUTE
80%
70%
60%
50%
40%
30%
20%
10%
0%
% OF ANMs
8%
3%
73%
16%
Intra muscular
intra dermal
subcutaneous
no answer
MEASLES ROUTE



6.2 Knowledge regarding child Immunization among ANM

Immunization is the process by which a person is made immune or resistant to an infectious disease, typically by the administration of vaccines. According to the guidelines developed by the WHO, children are considered fully vaccinated when they receive a vaccination against tuberculosis(BCG), three doses of the diphtheria, pertussis and tetanus vaccine; three doses of poliomyelitis (polio) vaccine; and one dose of the measles vaccine by the age of 12 months. Drop outs in immunization refer to children who have used immunization services, but do not return for subsequent vaccinations. A child suffering from mild fever and diarrhea should not be administered vaccine as during an episode of diarrhea administered vaccine may not produce optimum effect. The T-series vaccines should always be stored between +2 °C to +8 °C as they are damaged by freezing so if vaccine is suspected to have been exposed to freezing temperature then it should not be administered. Reconstituted BCG and measles vaccines should be discarded within 4 hours as beyond 4 hours it increases chances of AEFIs (Adverse event following immunization).

Table.No-2

S.no	Question	Yes	No
1	A fully immunized child is one who has received BCG, DPT/Polio-1&2 ,Measles and Vit-A before the first birthday	59%	41%
2	Diluent supplied with the vaccine should be stored in ILR at least 24 hrs before use to ensure that vaccine and diluent are at the same temp when reconstituted	94%	6%
3	Drop out children are those who have never received any immunization	82%	18%
4	If a child comes with mild fever and diarrhea, should you give immunization?	24%	76%

S.no	Questions	Percentage
5	Knowledge of the respondents towards frozen T-series vaccines	
	a) discard and report	43%
	b) keep them in the cold chain	0%
	c) warm them and use them as quickly as possible	57%
6	Knowledge of the respondents towards reconstituted BCG and Measles vaccine	
	a) 1 hours	0%
	b) 2 hours	0%
	c) 3 hours	20%
	d) 4 hours	80%

It is significant to notice that more than half of the total respondents were not aware of proper definition of a fully immunized child. With Every passing day more and more emphasis is given to child immunization and it is very disheartening to know that a large bunch of ANM's who are responsible to achieve cent percent coverage of immunization don't have the basic knowledge of

an immunized child. It is again a serious issue when it comes to the knowledge about the dropouts as 82 percent of the ANMs do not have the right knowledge. 24 percent of the ANMs feel that a child with mild fever and diarrhea should be given vaccine which is clearly not advisable. Similarly, it was also found that 57 percent of the ANM's feel that we should warm the frozen T-series vaccines and use them as quickly as possible. In such a small sample size if such results are found, it's a clearly seen that the ANMs do not have proper knowledge regarding immunization.

Fig.7-KNOWLEDGE REGARDING FULLY IMMUNIZED CHILD

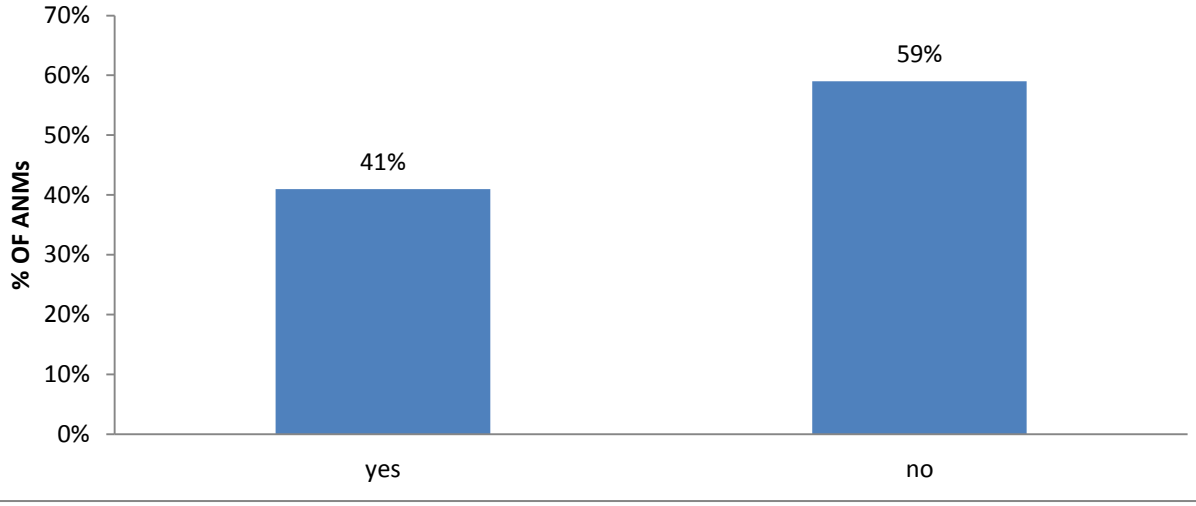
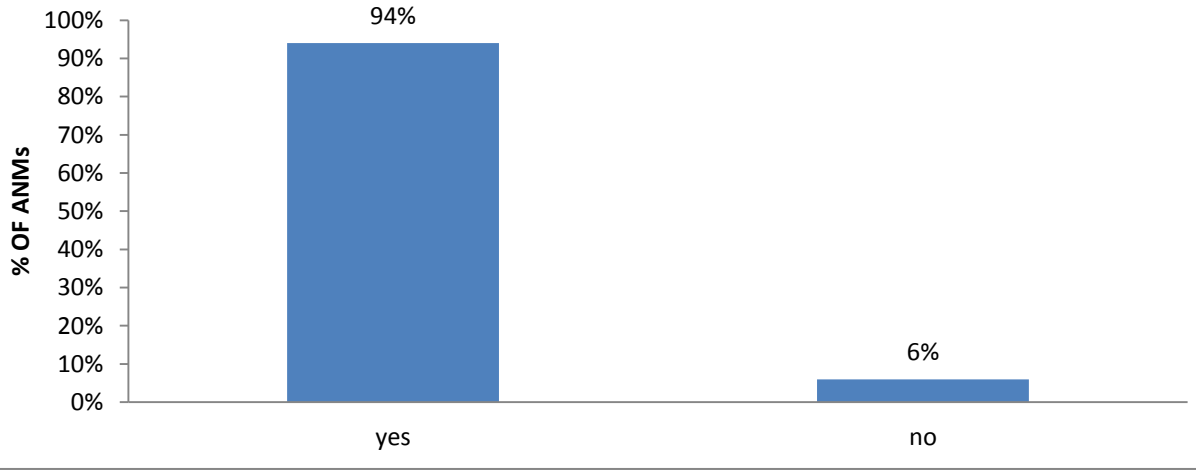


Fig.8 KNOWLEDGE REGARDING DILUENT SUPPLIED WITH VACCINES



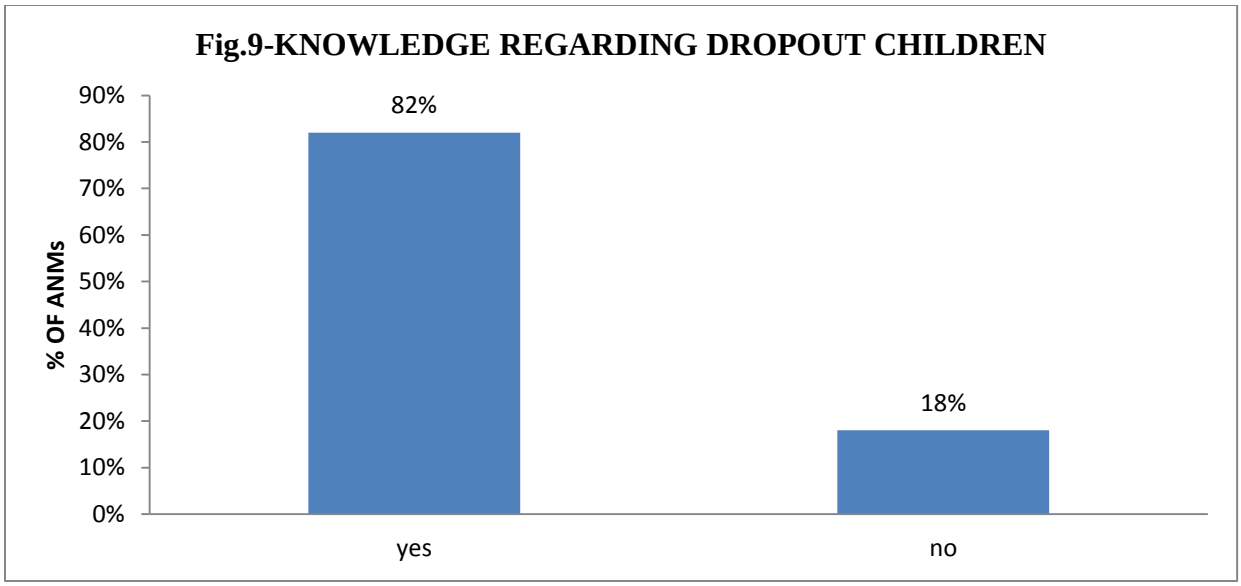


Fig.9-KNOWLEDGE REGARDING DROPOUT CHILDREN
% OF ANMs
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
82%
18%
yes
no

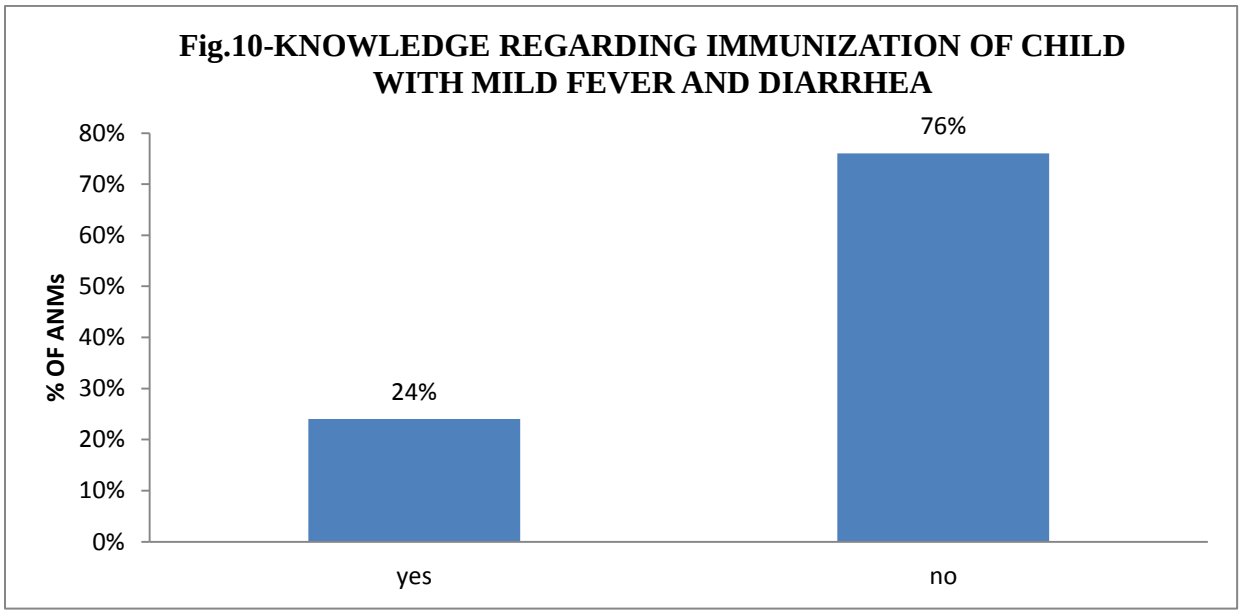


Fig.10-KNOWLEDGE REGARDING IMMUNIZATION OF CHILD WITH MILD FEVER AND DIARRHEA
% OF ANMs
80%
70%
60%
50%
40%
30%
20%
10%
0%
24%
76%
yes
no

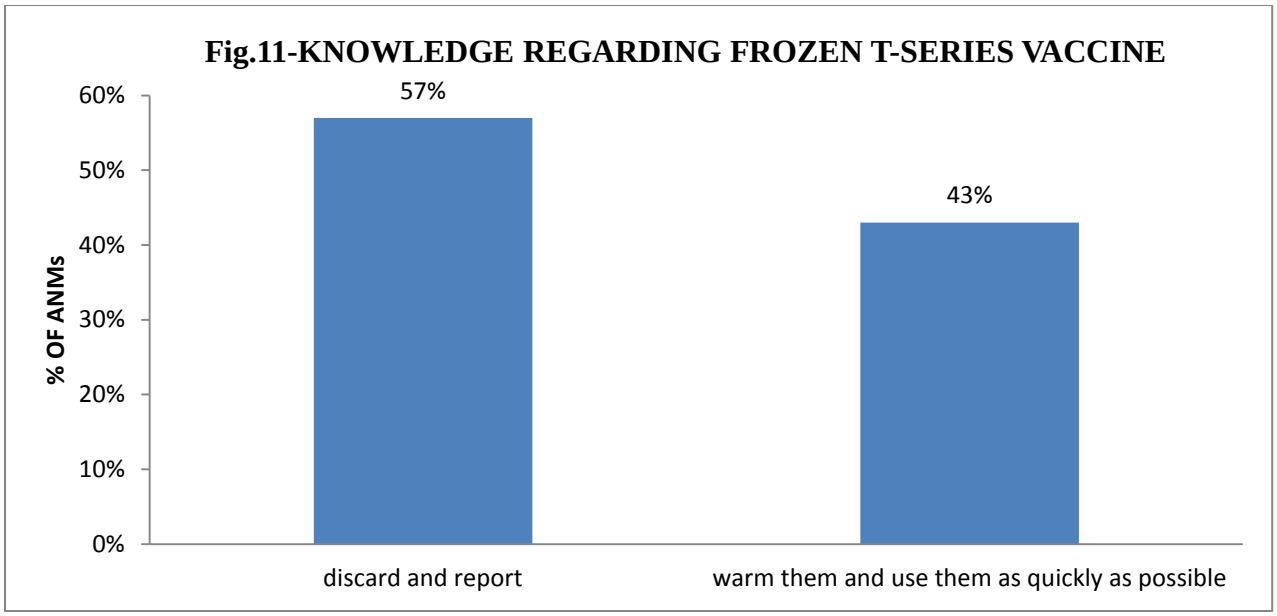


Fig.11-KNOWLEDGE REGARDING FROZEN T-SERIES VACCINE
% OF ANMs
60%
50%
40%
30%
20%
10%
0%
57%
43%
discard and report
warm them and use them as quickly as possible

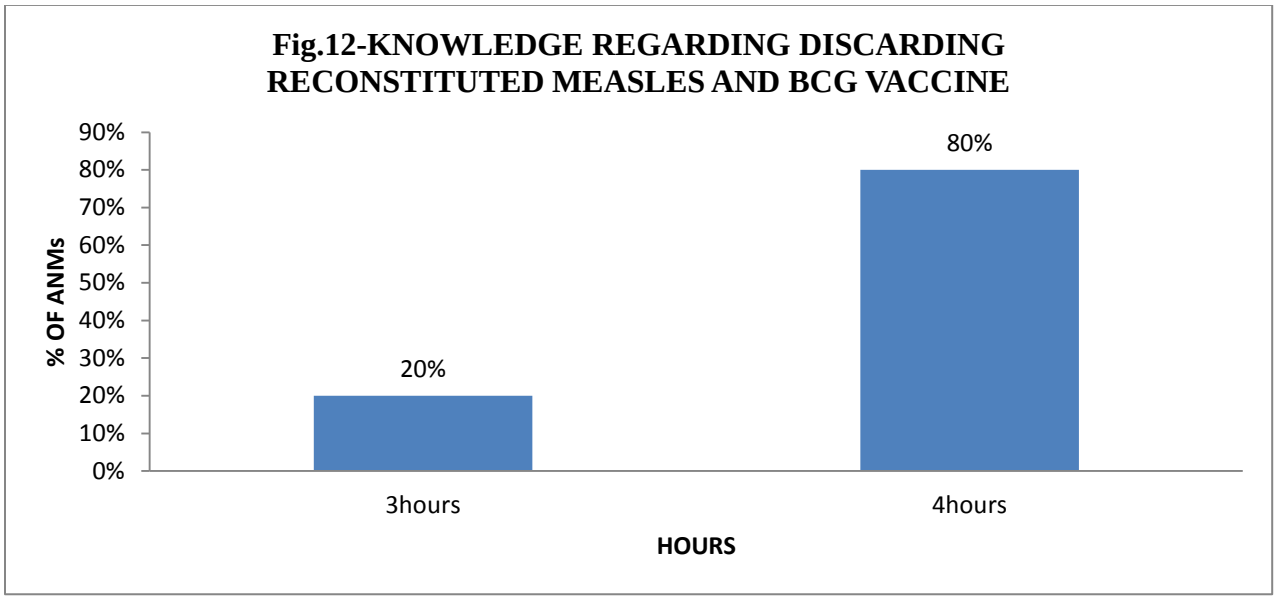


Fig.12-KNOWLEDGE REGARDING DISCARDING RECONSTITUTED MEASLES AND BCG VACCINE
% OF ANMs
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
20%
80%
3hours
4hours
HOURS

6.3 Practices regarding child immunization among ANMs

Table.No-3

S.no	Questions	Yes	No
1	Whether Batch NO. & Expiry Date of Vaccine recorded?	100%	nil
2	Whether spirit allowed drying before vaccination of killed vaccine?	63%	37%
3	Whether 0.1ml AD syringe used for BCG vaccination?	86%	14%
4	Whether normal saline used for cleaning the skin before BCG and Measles vaccination?	61%	39%
5	Whether DPT & Hep-B given on different sites?	100%	Nil
6	Whether Vit-A given along with Measles vaccination?	100%	Nil
7	Whether Ice-pack applied on the vaccination site after vaccination?	98%	2%
8	Whether advised mother regarding adverse effect of vaccination?	100%	Nil
9	Whether advised mother regarding next schedule of immunization	100%	Nil

S.no	Questions	Percentage
10	The number of measles vaccines to be carried to immunize 15 infants in a village	
	a) 3 vials	100%
	b) 4 vials	0%
	c) 5 vials	0%
	d) 6 vials	0%
11	Tracking dropout children	
	a) immunization registration	100%
	b) Tickler box/ bag	0%
12	Disposal of AD syringe after use	
	a) burn it in open air	4%
	b) cut needle in hub cutter and collect syringe in red bag and send to PHC for disinfection and disposal	96%
	c) throw in general waste/ black bag	0%

Practice of child immunization among ANM's is the most important area to be looked upon as the practice would directly relate to the overall efficiency and effectiveness of the immunization program. In the study population it was found that ANM's are at good practice. Cent percent of the ANM's record the Batch No. and expiry date of the vaccine. They were fully aware about the vaccines and their sites, whether we can give two different vaccines simultaneously or not. 98 percent of the ANM's have the practice of applying ice-packs on the vaccination site after vaccination. It was also found that the ANM's had a cent percent practice of informing the beneficiaries about the adverse effects of the vaccination as well as the next schedule for the vaccination. 96 percent of the ANMs were aware of the disposal of AD syringe after use. Cent percent of the ANMs were tracking the dropout children through immunization registration.

This will reflect in better awareness amongst the community regarding immunization and will help to increase the coverage as well.

7.0 CONCLUSION

The present study was an attempt to throw light on the knowledge and practice of child immunization among ANM's. In general, the knowledge of the ANM's was satisfactory regarding the vaccines route and site. But more efforts should be focused on the dosage of the vaccines as it was found that 45percent of the ANM's feel the correct dosage of BCG to be .1ml which is 10 times more than the actual dosage. Timely and routinely training of the ANM's is required in order to control the ill effects of over dosage. The main positives that came out from the study were firstly, majority of the ANM's were fully aware of the site and route of vaccination. Tremendous hard work has been put in by the health functionaries at the grass root level to improve the overall coverage of immunization. However, because of different vertical health programs running simultaneously at the ground level it becomes difficult for them to manage all the programs with same level of efficiency and effectiveness. It was found that there is lack of knowledge among the ANM's regarding fully immunized child which is a state of concern. Apart from this it was found that lack of Human resources at the Sub Centre level, lack of training and knowledge about cold chain handling and geographical constraints also reflects less immunization coverage. So, there is a need to increase education along with continuous motivation amongst the ANM's highlighting the importance of immunization, adverse effects of vaccines and proper handling of the cold chain.

8.0 LIMITATIONS

Finally, a number of important limitations need to be considered. The sample size was too small to find out any significant relationship from the data, as statistical tests normally require a large sample size to ensure a representative distribution of the population. Cultural gap and language barrier may also lead to biases as the ANM's in the rural area are not used to such interviews.

9.0 RECOMMENDATIONS

It was found in the study that the ANMs had satisfactory knowledge about vaccine route and site and is at very good practice. The only point of concern is the knowledge regarding child immunization. So,

- There is a need to increase technical knowledge of immunization along with continuous motivation amongst the ANM's highlighting the importance of immunization, adverse effects of vaccines and proper handling of the cold chain.

Apart from study findings some general recommendations are

- Routinely training be given to the ANM's prior to major routine immunization schedules to reduce the humanly errors so that newborn child remains free from diseases.
- There should be a systematic work plan for the ANM's at the Sub-Centre level so that they could prioritize depending upon the importance of the work.

10.0 References

1) World Health Organization: Health topics: Immunization. Cited in http://www.who.int/topics/immunization/en/ [accessed on 21st April 2013].
2) UNICEF: Immunization Facts and Figures April 2013. Cited in http://www.who.int/mediacentre/factsheets/fs378/en/index.html. Pdf [accessed on 21st of April 2013].
3) GIVS. Global Immunization Vision and Strategy 2006-2015. Geneva: WHO/UNICEF; 2005. Cited in http://whqlibdoc.who.int/hq/2005/WHO_IVB_05.05 .pdf [accessed on 21 January 2012].
4) Naveen Thacker, Panna Choudhury, Lisa M. Gargano, Amod Kumar, Manisha Arora (2012). "Attitude and Practices of Auxiliary Nurse Midwives and Accredited Social Health Activists in Uttar Pradesh and Bihar Regarding Polio Immunization in India. Accessed on 22nd march 2013.
5) Joseph L Mathew (2011). "Inequity in childhood immunization in India: A systematic Review" accessed on 22nd March 2013.
6) N. Audinarayana (1994). "Correlates of maternal and child immunization: A cross-country analysis". Accessed on 23rd march 2013.
7) Roos M. Bernsen, Fatmah R.Al-Zahmi, Noura A.Al-Ali,Rowayah O.Hamoudi, Noura A.Ali, John Schneider(2011). "Knowledge, Attitude and Practice towards Immunizations among Mothers in a Traditional City in the United Arab Emirates". Accessed on 22nd march 2013.
8) Fred Arnold, Sulabha Parasuraman, P.Arokiasamy, and Monika Kothari. 2009. Nutrition in India.National Family Health Survey (NFHS-3).
9) District Health Action Plan, Katihar 2012-13.

Questionnaire for Knowledge Attitude and Practice of Immunization among Nurses

Name: - ***Work experience:-***

HSC: - ***Date of joining:-***

1) **Knowledge regarding proper dose and route about vaccination among nurses**

S.No.	Knowledge of vaccine	
1.	BCG Dose	
2.	BCG Route	
3.	DPT Route	
4.	DPT Site	
5.	Measles Route	
6.	Measles Site	

3) Knowledge regarding child immunization among ANM

1	A fully immunized child is one who has received BCG, DPT/Polio-1&2, Measles and Vit-A before the first birthday. **एक पुरी तरह से प्रतिरक्षित बच्चा वह है जो पहले जन्मदिन से पहले** BCG,DPT/Polio-1&2 ,Measles and Vit-A **प्राप्त कर चुका हो ।**	Yes	NO
2.	What do you do with T- series vaccines (DPT, DT, TT, and Hep B) that are frozen? **आप जमे हुए (फ्रोजन)** (DPT, DT ,TT, Hep B) T- series **टीके के साथ क्या करेंगें ?**		
	a. Discard and report **निकाल देंगें एवं सूचना देंगें**		
	b. Keep them in the cold chain. cold chain **में रखेंगें**		
	c. Warm them and use them as quickly as possible **गर्म करके पुनः जितनी जल्दी संभव हो इस्तेमाल करेंगें**		
3.	Diluent supplied with the vaccine should be stored in ILR	**Yes**	**NO**

	at least 24 hrs before use to ensure that vaccine and diluent are at the same temp when reconstituted. टीके के साथ आपूर्ति किये गये मंदक को ILR में कम से कम 24 घंटे पहले से संग्रहीत करेंगें ताकि पुर्नगठन के समय दोनो एक तापमान पर हो		
4	**How many vials of Measles vaccine will you carry to immunize 15 infants in a village?** एकगाँव में 15 शिशुओं को प्रतिरक्षित करने के लिए खसरे वैकसीन की कितने वायल ले जायेंगें?	**3,4,5,6**	
5.	**Reconstituted BCG and Measles vaccines should be discarded after how many hours?** पुनर्गठित बीसीजी और खसरा के टीके ko कितने घंटे के बाद खारिज कर दिया जाना चाहिए?	**1,2,3,4**	
6	**How can you track drop out children?** कैसे आप Drop out बच्चों को ट्रैक कर सकते हैं?		
	a. Immunization registration(टीकाकरण पंजीकरण)		
	b. Tickler box/ bag (. गुदगुदाने बॉक्स / बैग)		
7	**How will you dispose off AD syringes after use?** कैसे आप उपयोग के बाद एडी सीरिंज का निपटारा करेंगी?		
	a. Burn it in open air(खुली हवा में इसे जला कर**)**		
	b. Cut needle in hub cutter and collect syringe in red bag and send to PHC for disinfection and disposal.(हब कटर में सुई काटकर सिरिंज को लाल बैग में इकट्ठा करके प्राथमिक स्वास्थ्य केंद्र मे भेजे कीटाणुशोधन और निपटान के लिए)		
	c. Throw in general waste/Black bag (सामान्य कचरे / काले बैग में फेंको)		
8.	**Drop out children are those who have never received any immunization** **Drop out** बच्चों वह हे जिन्हे कभी टीकाकरण प्राप्त नहीं हुआ है	**Yes**	**No**
9	**If a child comes with mild fever and diarrhoea, should you give immunization?** एक बच्चे को हल्का बुखार और दस्त के साथ आता है, तो आप ko प्रतिरक्षण देना चाहिए?	**Yes**	**No**

3) **Practices regarding immunization among Immunization**

S. No.			
1.	**Whether Batch NO. & Expiry Date of Vaccine recorded?** **बैच सं और वैक्सीन की समाप्ति की तिथि दर्ज की गई?**	yes	No
2.	**Whether spirit allowed to dry before vaccination of killed vaccine?** **Spirit वैक्सीन के टीकाकरण से पहले सूखे की अनुमति दी है?**	**yes**	**No**
3.	**Whether 0.1ml AD syringe used for BCG vaccination?** **Kya 0.1ml ई. सिरिंज बीसीजी टीकाकरण के लिए प्रयोग किया जाता है?**	**yes**	**No**
4	**Whether normal saline used for cleaning the skin before BCG and Measles vaccination**? Normal Saline बीसीजी और खसरा टीकाकरण से पहले त्वचा की सफाई के लिए इस्तेमाल किया है?	**yes**	**No**
5.	**Whether DPT & Hep-B given on different sites?** **डीपीटी और Hep बी विभिन्न साइटों पर दी गई है?**	**yes**	**No**
6.	**Whether Vit-A given along with Measles vaccination?** **विटामिन ए खसरा टीकाकरण के साथ दिया ja sakta h?**	**yes**	**no**
7.	**Whether Ice-pack applied on the vaccination site after vaccination?** **आइस पैक टीकाकरण के बाद टीकाकरण साइट पर लागana chahie या नहीं?**	**yes**	**no**
8.	**Whether advised mother regarding adverse effect of vaccination?** **टीकाकरण के प्रतिकूल असर के बारे में maa ko सलाह दी gai?**	**yes**	**no**
9.	**Whether advised mother regarding next schedule of immunization?** **टीकाकरण के अगले शेड्यूल के बारे में मां को सलाह दी गई है?**	**yes**	**no**