

INTERNSHIP TRAINING
AT
NATIONAL HEALTH MISSION HARYANA

BY
JADWANI PARTIK VASANTBHAI

PGDHM
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**POST GRADUATE DIPLOMA IN HOSPITAL AND HEALTH MANAGEMENT
NEW DELHI
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Certificate of Internship Completion

**Internship Training
At
Child Health
NHM Haryana**

Study Title

**PIE – Post Introduction Evaluation of PENTAVALENT Vaccine
In Yamuna nagar and Mewat district of Haryana state**

SUBMITTED BY – Jadwani Pratik

UNDER THE GUIDANCE OF

**Dr.Preetha G S
Assistant Dean (Research)
IIHMR Delhi**



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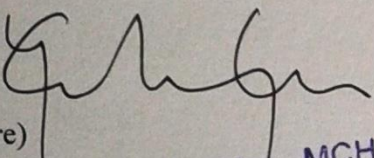
TO WHOM IT MAY CONCERN

This is to certify that Mr. Jadwani Pratik Vasantbai has successfully completed his internship in our organization from February 5, 2014 to May 2, 2014. During this internship he has worked on project "**Post Introduction Evaluation of PENTAVALENT Vaccine** in Yamunnagar and Mewat district of Haryana state" & also co-ordinated for the Supportive Supervision of Programmes under the guidance of me and my team at National Rural Health Mission, Haryana..

.....
(any positive/negative comments).

We wish him good luck for his future assignments.

(Signature)


Deputy Director - MCH & EPI
Directorate General Health
Services, Haryana Panchkula

Certificate of Approval

The following dissertation titled " **Post Introduction Evaluation of PENTAVALENT Vaccine** in Yamun nagar and Mewat district of Haryana state " 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.

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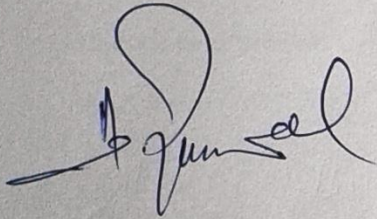
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This is to certify that Jadwani Pratik Vasantbhai student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at Child Health – NHM Haryana from 5th February, 2014 to 30th April, 2014.

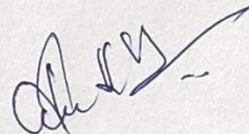
The Candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical.

The Internship is in fulfilment of the course requirements.

I wish him all success in all his future endeavours.



Dr. A.K. Aggarwal
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Certificate from Dissertation Advisory Committee

This is to certify Jadwani Pratik Vasantbhai, a graduate student of the Post – Graduate Diploma in Hospital and Health Management has worked under our guidance and supervision. He is submitting this dissertation titled “PIE – Post introduction evaluation of pentavalent vaccine in district Mewat and Yamunanagar of Haryana state” at Child Health Division, NHM Haryana in partial fulfilment of the requirement for the award of the Postgraduate Diploma in Hospital and Health Management.

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

Signature

~~Dr Preetha G S~~

Dr. Preetha GS

Assistant Dean (Research)

IIHMR, New Delhi

Certificate By Scholar

This is to certify that the dissertation titled " **Post Introduction Evaluation of PENTAVALENT Vaccine** in Yamun nagar and Mewat district of Haryana state " submitted by Jadwani Pratik Vasantbhai enrolled no. PG/12/064 under the supervision of Dr.Preetha G S for award of Postgraduate Diploma in Hospital and Health Management of the institute carried out during the period from 03/02/2014 to 31/04/2014 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, title in this or any other institute or other institution of higher learning.

Jadwani P.
Signature

FEEDBACK FORM

Name of the Student: Jadwani Pratik Vasantbhai

Dissertation Organisation: National Health Mission
Haryana.

Area of Dissertation: Routine Immunisation

Attendance: 95%

Objectives achieved: ALL OBJECTIVES REGARDING THE PROJECT
WERE ACHIEVED.

Deliverables: IMPACT OF THE NEW VACCINE INTRODUCTION WAS
EVALUATED.

Strengths: DEDICATED AND HARD WORKING.

Suggestions for Improvement: SHOULD DO EXTENSIVE LITERATURE
REVIEW.

- SHOULD IMPROVE REPORT WRITING SKILLS.

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

Medical Officer, CHM
National Rural Health Mission
Haryana, Panchkula

Date:

Place:

AKNOWLEDGEMENT

“Any accomplishment requires the grace of god as well as help and good wishes of many people and this work is not different.”

I would like to express my gratitude to all especially my Institution and my faculty members who made the completion of this dissertation possible.

I deem it the rarest life time opportunity to express my sincere and deepest sense of gratitude to Dr. Rakesh Gupta, Mission Director, NRHM -Haryana for giving me opportunity for the summer training in your esteemed organization and for his permission for this important study and also for his timely advice, supervision and moral support during my study period.

I express my thanks to Dr. Suresh Dalpat, Deputy Director, Child Health – NHM Haryana, I feel highly honoured to express my most profound gratitude to Dr. Suresh Dalpat, Deputy Director, Child Health – NHM Haryana for giving me the opportunity and resources to pursue my project work.

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My words ends to acknowledge the debt of my family. Thanks to Almighty for giving a place in this wonderful world and the opportunity called –LIFE.

Place – Panchkula

Jadwani Pratik

ABSTRACT

A study for Post introduction evaluation of vaccine focuses on a range of programmatic aspects, such as pre -introduction planning, vaccine storage and wastage, logistics of administering the vaccine, and community receptiveness to the vaccine.

A study will be conducted to evaluate post introduction of pentavalent vaccine in the state of Haryana. The evaluation will be based on an analysis of primary data collected from the health facilities. A cross-sectional survey will also be conducted to assess the qualitative issues after the introduction of pentavalent vaccine regarding the staff training, cold chain management and open vial policy, supervision, monitoring, and community acceptance.

Quantitative analysis will be done for analyzing the previous DTP vaccine coverage and dropout rate with new vaccine to identify and implement quality care practices that lead to optimum utilization of the available resources with the view to improve Haryana's current Infant and Neonatal Mortality numbers.

This study will help to find out the gaps and issues in new vaccine introduction and provide evidence based recommendations for planning and improvisation of new vaccine introduction in Haryana or other state. It will also help to minimize the gaps when introduction of pentavalent vaccine in other state and improve planning and management of program.

It is a cross sectional study with random sampling in Mewat and Yamunanagar district with 5 facility in each district. Semi structured questionnaire tool is used which was developed by WHO for Post Introduction Evaluation of new vaccine. Data collection will be done by interviewing key health provider like MO, Cold chain handler, LHV and ANM by document reviews and onsite observations. A questionnaire is used for community evaluation by interviewing mother or caregiver of household.

Key Finding

- Training manuals not readily available at the sites.
- Training for the liquid pentavalent vaccine was done before switch at all levels by cascade. Trainings went well. Not all members mainly staff nurse of the health facilities were trained.
- Clean wastage sites. Safe injection practices followed.
- Wastage not calculated at any level.

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ABBREVIATION

UIP – Universal Immunisation Program

GAVI – Global Alliance for Vaccine and Immunisation

NTAGI - National Technical Advisory Group on Immunization

CHC- Community Health Centre

PHC- Primary Health Centre

SC – Subcentre

MO – Medical officer

ANM – Auxiliary Nurse Midwife

LHV- Lady Health Visitor

ORGANIZATION PROFILE

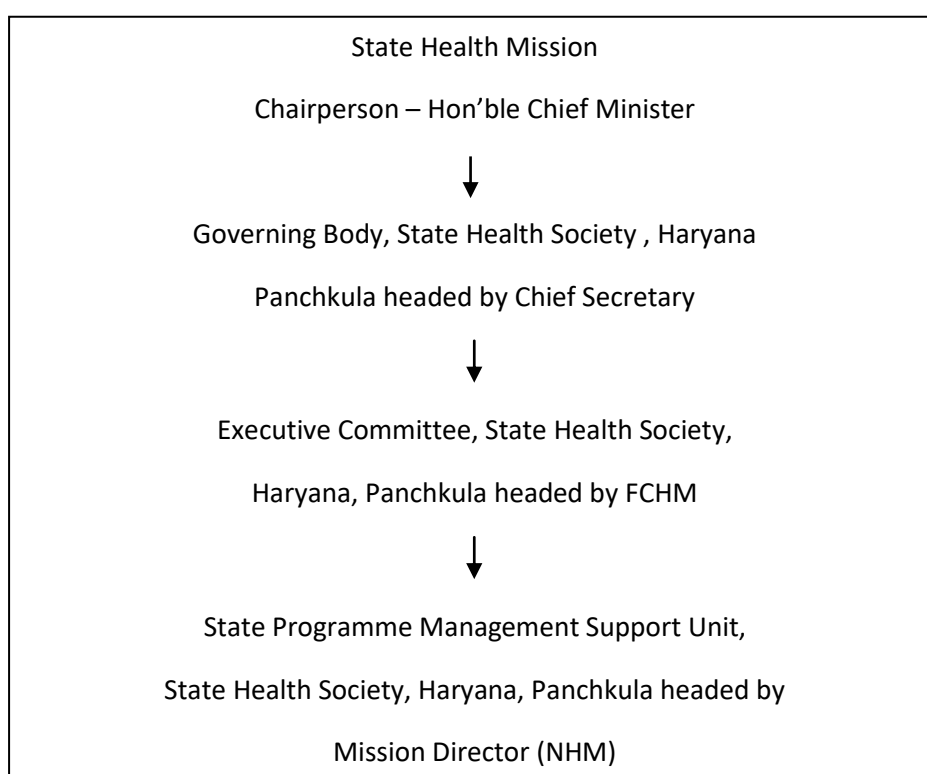
A. Introduction

The National Rural Health Mission seeks to provide effective health care to rural population throughout the country. It aims to undertake architectural correction of the health system to enable to effectively handle increased allocations as promised under the National Common Minimum programme. It has as its key components provision of a female health activist in each village; a village health plan prepared through a local team headed by the Health & Sanitation Committee of the Panchayat. It aims at effective integration of health concern with determinants of health like sanitation & hygiene, nutrition, and safe drinking water through a District Plan for Health. As per mandate under NRHM the State Health Society has been reconstituted under the Chairmanship of Chief Secretary, Haryana adopting multi department approach and involvement of all stake holders.

□ Mission – Mission of NRHM is to improve the quality of life of people by providing better Health Services. It strives to help people improve their productivity and reduce risks of diseases and injury in a cost-effective way.

□ Vision--NRHM seek to establish long-term relationships with groups and individuals to enable them to continue to work to achieve optimal health. It delivers cost-competitive health promotion services with patient's satisfaction and accountability.

Structure of State Health Mission



B. Some of functions and duties of health department:

Health department has manifold functions and duties which are as under: - 1. Provide promotive, preventive, curative and rehabilitative services to the community through primary health care delivery system.

2. Provide equitable and quality health care at primary, secondary and tertiary level.

3. Extension, expansion and consolidation of rural health infrastructure.

4. Respond to the local community health needs and request.

5. It takes many steps for population stabilization.

6. Provide Reproductive and Child Health Services with the objective of reducing MMR & IMR.

7. Provide immunization services against vaccine preventive diseases of childhood as well as pregnant mothers against tetanus during child birth.

8. Provide Family Welfare Services.

9. Provide Essential Obstetric Care.

10. Enforcement of PNDT Act to prevent Sex Determination.

C. Programme Implementation Plan for 2013-14

State of Haryana has made steady progress in NRHM implementation during first phase of NRHM (2007-2012). State has now reached the stage from where it requires taking a leap forward. There has been considerable increase in the funds absorption capacity over the last few years, particularly after 2008-09. NRHM have however identified certain loose ends which need to be tightened up in the next phase. 2012-13 continues to retain the proposal of 2011-12, barring few structural changes necessitated by sub optimal achievement in certain areas.

Program management needs a revamp both at state and district level. While on one hand state is averse to creating extra posts under NRHM but on the other this need people who can manage the program at district and sub district level. Community processes and main streaming of AYUSH have been weak areas. This year NRHM is proposing to link these two weak areas to strengthen both of them. It is proposed that MO (AYUSH) will function as community process manager at block level to look after ASHA, SMS, IBSY and HBPNC programs. AYUSH

doctors otherwise well equipped to handle such programs have been underutilized. They will be paid extra honorarium for community process work.

ASHA program in Haryana has started moving; there has been increasing realization that if ASHA moves everything else would move along with it. There are two structural changes proposed this year in ASHA program: first, there will be an ASHA

supervisor from among the best performing ASHA at PHC level who will be paid extra honorarium for the work and second, there will be increased honorarium for ASHA for ensuring service delivery to SC and BPL population. In 2012-13, proposing 3000 new ASHAs in rural areas according to population norms. It is also proposed to have ASHA in urban areas to provide much needed extension services in urban slums.

State has proposed a new weekly Iron Folic Acid supplementation (WIFS) program for adolescent girls in college in all the district. This will supplement the effort of Indira Bal Swasthya Yojana (IBSY) for controlling anemia in children and adolescents.

Analysis of expenditure in last few years has revealed that while salary component has been almost fully utilized, the expenditure in services and procurement has not been commensurate. In new PIP, it has been proposed to link honorarium with performance- there will be fixed component of honorarium which will be same as in last PIP plus a variable component which will be based on performance and can go up to 50 percent of the fixed honorarium. State has proposed to bolster its procurement wing to cut down delays in procurement.

MANAGERIAL TASKS I DID WITH RESPECT TO THE DEPARTMENTS

During the three months of working period in the office, I mainly co-ordinated for the various programmes of child health . Also, I was involved in below mentioned activities.

After one month of extensive training period,I did three district visit for supportive supervision of various child health programmes such as

- Essential newborn care supportive supervision in Districts narnaul, sirsa, yamunagar

- Routine immunization supportive supervision in above all three districts.
- On job training to staff nurse and ANM on ENBCR.
- Data entry of all the finding then analysed the data and explain with higher authority of respective Districts person such civil surgeon, DIO.
- Quality assessment of Special newborn care unit and cold chain room
- **LEARNINGS IN INTERNSHIP TIME**

1. I came to know about various health programmes managed by the organization.
2. Work culture in govt. organizations as we think, is not the same everywhere.

In NRHM Haryana there is lot of pressure of work in most of departments .

3. This provided me an opportunity to field exposure .
4. I came to know the harsh reality of health conditions prevalent in Haryana state.
5. I learned the various programmes run by GOI regarging Child Health Programmes

I got the training of

Essential new born care,

Routine Immunization,

Home base New born care,

IMNCI (integrated management of newborn child illines.

7. Research type activities are very less held in NRHM, Haryana. This project by me created a niche in NRHM to think about the involvement of Researchers & health managers in their organization.
8. I also attended review meetings of CMO & also aware with points discussed in IMR reduction. These provided me a lot of knowledge & a platform to learn.
9. Last but not the least, I came to know that career in public health management is not as easy

INTRODUCTION

Haemophilus influenza type b (Hib) is a gram-negative bacterium that can cause serious disease such as meningitis and severe pneumonia, primarily among young children. It was estimated to have caused 8.1 million cases of serious Hib diseases, and 371,000 deaths globally in the year 2000¹. In India, an annual estimated 2.4 to 3.0 million cases and 72,000 deaths in under-5 children were attributed to Hib diseases^{1,2}. Hib is the leading cause of bacterial meningitis and second leading cause of bacterial pneumonia among young children, accounting for 40-50% of all cases of bacterial meningitis and 25-30% of all pneumonia cases.

The National Technical Advisory Group on Immunization (NTAGI) in India recommended the introduction of Hib vaccine in the Universal Immunization Program (UIP) in 2008². Vaccination is a primary tool for prevention from severe Hib disease, and the WHO recommends that Hib-containing vaccines be included in all routine infant immunisation programs.

The combination vaccine against diphtheria (D), pertussis (P) and tetanus (T) is the core part of the childhood vaccination in India. In 2010, more than 85% of infants have received DPT vaccine, representing 109 millions of immunized children. The spread of this vaccine has led to a marked reduction in these infections worldwide³. WHO recommended addition of HepB vaccination in the Expanded Program of Immunization (EPI) in 1992, to ensure reduction in overall incidence of hepatitis B infection and to reduce chronic carriage in endemic zones. In 1998, it was followed by addition of *Haemophilus influenzae* type B (Hib) vaccination considering the increasing burden of disease⁴.

With advent of various new vaccines for combating infectious diseases, promotion of combination vaccines seems essential for simplifying the increasing complexity of immunization program of any country. To ensure continuous availability and uninterrupted supply of safe and effective DTP, HepB and Hib vaccines, which are essential for smooth functioning and success of any immunization program

created a motive for the vaccine manufacturers to develop pentavalent combination vaccines.

Introduction of pentavalent vaccine in India

With the recommendation from National Technical Advisory Group on Immunization (NTAGI), the Ministry of Health and Family Welfare (MoHFW), Government of India (GoI), decided to incorporate pentavalent vaccine containing DTwP-HepB-Hib in Universal Immunization Program of India (UIP) in 2009. This incorporation of pentavalent vaccine is funded for the first two years of its introduction by a non-government organization; Global Alliance for Vaccines and Immunization (GAVI)⁵. These grants were meant for utilization of pentavalent vaccine in ten states namely; Andhra Pradesh, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Kerala, Karnataka, Punjab, Tamil Nadu and West Bengal and were expected to benefit more than 18 million children. This move of introduction of pentavalent vaccine in UIP was praised vociferously internationally, as India constitutes 34% of birth cohort in GAVI-eligible countries⁶.

Haryana was the first state in North India and overall 3rd state after Kerala and Tamil Nadu to introduce Pentavalent vaccine in Routine Immunization. The Pentavalent launch was done by Hon'ble Chief Minister on 21.12.2012 at 10.30 am at Haryana Niwas, Chandigarh. In this regard, a State media collaboration workshop was planned on 19.12.2012 at 10.30 am at Hotel Mountview, Sector – 10, Chandigarh for its wide publicity and sensitization of general public.

Immunisation Schedule in India

Pentavalent vaccine has been recommended for all infants in a three dose schedule. The first dose is scheduled at 6 weeks and the next dose is administered after a gap of at least 4 weeks and the last dose is given 4 weeks later. The administration is based upon progressive birth cohort whereby all children who present for the first dose of DPT (DPT1) will be provided first dose of pentavalent

vaccine. The infants who are already been immunized with DPT + Hep B shall complete their respective schedule.

Age	Earlier Schedule	With Pentavalent Vaccine
At birth	BCG, OPV-0, Hep-B birth dose	BCG, OPV-0, Hep-B birth dose
6 weeks	OPV-1, DPT-1, Hep-B1	OPV-1, Pentavalent-1
10 weeks	OPV-2, DPT-2, Hep-B2	OPV-2, Pentavalent-2
14 weeks	OPV-3, DPT-3, Hep-B3	OPV-3, Pentavalent-3
16-24 weeks	DPT-B1, MCV-2, OPV-B1	DPT-B1, MCV-2, OPV-B1

Table 1 – Schedule of UIP India

PIE is a post-introduction evaluation of the overall impact of the introduction of a new vaccine(s) on a country's national immunization programme. It focuses on a range of programmatic aspects, such as pre-introduction planning, vaccine storage and wastage, logistics of administering the vaccine, and community receptiveness to the vaccine. A PIE can rapidly identify problem areas needing correction within the immunization programme either pre-existing or resulting from the introduction of a new vaccine, and provide valuable lessons for future vaccine introductions.

REVIEW OF LITERATURE

1. A study on **Current Status Of Vaccine Against Diphtheria, Pertussis, Tetanus, Hepatitis B And Hib By Rushikesh P Deshpande And Balasaheb Ghongane In March 2014** shows PENTAVALENT vaccine was incorporated in UIP of India with the funding from GAVI in two state of India in 2011. The combination vaccine offers simplification of immunization schedule, reduced cost, better acceptance and logistic benefits. With heavy load of disease in the resource-poor countries, urgent efforts are needed to provide these so easy-to-use vaccines to children residing in those areas and thus saving millions of lives. The pentavalent vaccine provides a golden opportunity to curb Hib disease and hepatitis B along with diphtheria, pertussis and tetanus in the developing countries.
2. A study **On The Post Introduction Evaluation Of The Pentavalent Vaccine In Zambia** by WHO/AFRO IST East & Southern Africa, WHO/Zambia, UNICEF/Zambia, CDC, USAID, MOH Zambia in **February 2-13, 2009**. Finding of this study was Training for the liquid pentavalent vaccine was done before switch at all levels by cascade. Trainings went well. Training manuals not readily available at the sites. Not all members of the health facilities were trained. Adequate health education messages provided to community about pentavalent vaccine. Lack of awareness by mothers of the clinical symptoms prevented by vaccines. Wastage not calculated at any level.
3. **NTAGI Subcommittee Recommendations on *Haemophilus influenzae* Type b (Hib) Vaccine Introduction in India** subcommittee on introduction of Hib vaccine in universal immunization program, national technical advisory group on immunization, India. The committee noted that Hib diseases burden is sufficiently high in India to warrant prevention by vaccination. Hib vaccines have been demonstrated to be safe, both globally and in India, and extremely efficacious in all settings where they have been used. Hib vaccine fits into the UIP immunization schedule.
4. **Study done in urban area of Rohtak city in Haryana by Bhanwar Singh, Vashisht BM, Meely Panda and Pardeep Khanna** shows that drop-out rate indicates the system's inability to hold on to child once

registered. The drop- out could be due to migrant nature of urban population. Dinesh et al., also found that the importance of keeping immunization cards was even not well understood in urban areas, as cards of around one third (30.1%) of total children could not be traced by them.

5. A study done on Dropout Rates After First Dose in a Two Dose Measles Vaccination at an Immunization Clinic in Northern India. Finding of this study shows that the dropout rate between three doses of DPT for the same time period in the clinic was 10% between first and second and 20% between first and third dose. The dropout rates for measles are higher as the gap between the two visits is usually around nine months. The dropout rate between third dose and booster dose of DPT (a gap of one year) was as high as 59% which is similar to that of measles.

OBJECTIVE

General Objective-

- To evaluate the introduction process of the pentavalent vaccine in Haryana state.

Specific objective-

- To evaluate qualitative and quantitative data regarding the immunization programme and lesson learnt from pentavalent vaccine introduction in following areas.
 - Staff training
 - Cold chain and vaccine logistic management
 - Vaccine coverage and drop out
 - Immunization safety and waste disposal
 - Supervision and monitoring
 - Community awareness and acceptance of vaccines
- To identify strength and weaknesses associated with pentavalent vaccine introduction.

METHADODOLOGY

Study Population : MO – Medical Officer, Cold chain handler (LHV/Pharmacist), ANM

Study design – Cross sectional study

Sampling Technique – Random Sampling

Data collection tool- Semi structured questionnaire developed from the New Vaccine Post Introduction Evaluation Tool of WHO. This tool contains 2 components –

First Component is Questionnaire about Health Facility. Data collection will be done by interviewing key health provider - MO, Cold chain handler, LHV and ANM by document reviews and onsite observations. Second component is Questionnaire for community evolution. Interviewing mother or caregiver of 2 household for each facility.

Sample size- District selected for study were Mewat and Yamunanagar. In each district 5 facility was evaluated by interviewing facility staff and observation using standard questionnaires. 5 facilities include 1 CHC, 2 PHC and 1 SC of each PHC

Selection of District - Districts were selected on the basis of performance. The indicators are coverage, demographic, geographic and urbanisation.

Parameter	Indicator	Source
Coverage	Pentavalent 3	DLHS2
	DPT3	
Demographic	Total population size	Census 2011
Geographic	Distance from state Hq	Google map
Urbanization	Proportion of urban pop	Census 2011

Table 2 – Indicators for Selection of District

Yamunanagar is a capital of Yamunanagar district and situated on the bank of Yamuna River. Northern side of Yamunanagar District is adjoining to Himalaya and covered by Shivalik hills. Rest of the part of this District is almost plain. The peoples residing in this district are from different categories i.e. Industrialists, Businessman, Employees and Laborers. Yamunanagar had a population of 383,318, out of which males were 205,346 and females were 177,972 and the literacy rate is 95.72 per cent as per the census 2011. Yamunanagar has 4 blocks, 2 block PHCs, 18 PHCs and 112 Sub centres.

Mewat is a district in the south of Haryana with a population of 1,089,406. The literacy rate in the district is 56%. It is the high focus district of a non high focus state due to overall poor health indicators and infrastructure. It has 3 blocks, 20 PHCs and 138 sub centres.

.

Data analysis-

By Microsoft excel

The majority of data are drawn from the health-facility and caregiver questionnaire. The findings from the interviews at each level of the health service, and the observations at facility will be summarized to provide an overview of the vaccine introduction process. The collected data in the filled will entered into spreadsheets in excel, and then compile for the final analysis.

FINDING AND DATA ANALYSIS

Planning and introduction

In December 2012, Haryana government introduced pentavalent vaccine in whole state. According to WHO, 2.4 to 3.0 million cases of homophiles influenza b occurs in India with total deaths estimated to 72000 (Watt et al, 2009; NTAGI sub Committee 2009) Before Pentavalent vaccine, DPT vaccine were administered to the children below one year. Pentavalent vaccine will reduce the IMR by 4 percentages which will play a vital role to achieve national goal. Also pentavalent vaccine plays a very important role in the prevention of life threatening diseases in children and prevents children from multiple pricks of injection for DPT, Hep B and Hib. It has also lowers down the wastage factor of vaccine and syringe supplies.

In the interview at the facility level, there was no any official launch ceremony held at PHC, SC level but at CHC level SMO had launch event. A total of 95% respondents stated that there was no any changes in program and said introduction reduce some workload. All interviewee said that introduction was a smooth process in general. They stated that there was no resistance from the community at all.

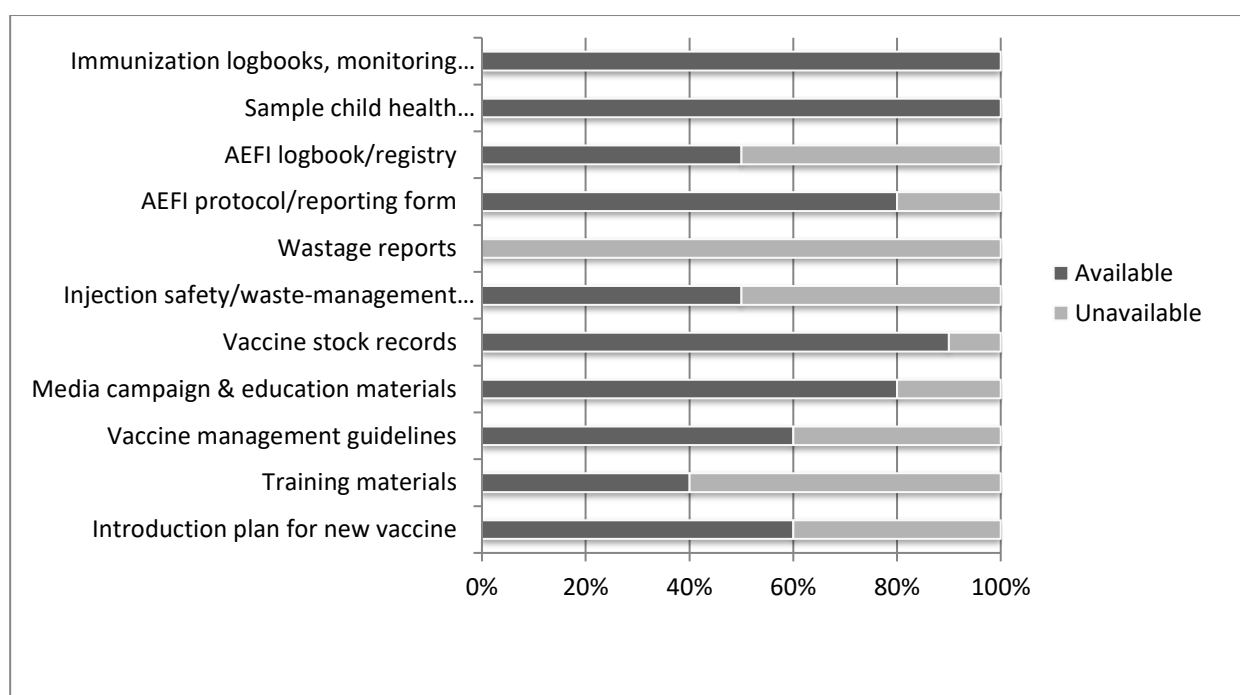


Fig. 1- Availability of documents

One issue faced during introduction planning was one PHCs in Mewat district got new vaccine one month late which led to postponement of scheduled date of the start of vaccination. Also, it was noted that some of the facilities don't have the copy of introduction plan, training material, and injection safety/waste management protocols guideline. Wastage reports were not available at any facility as they don't know how to calculate the wastage report. AEFI register was not available at some facilities and also not maintained where available. Immunization logbook or register, immunization cards were available at every facility and maintained. Vaccine stock register was well maintained and available at every facility.

Staff Training-

Training were planned and conducted for all categories of health staff before the introduction of pentavalent vaccine in the state program. These training were conducted in cascade manner: the district officials were trained at the state level workshop. The district officials trained health facility medical officers, who will train other category of health staff.

These training covered all the essential topics, such as the diseases prevented by the pentavalent vaccine, the vaccination schedule, vaccine administration, and potential adverse events etc.

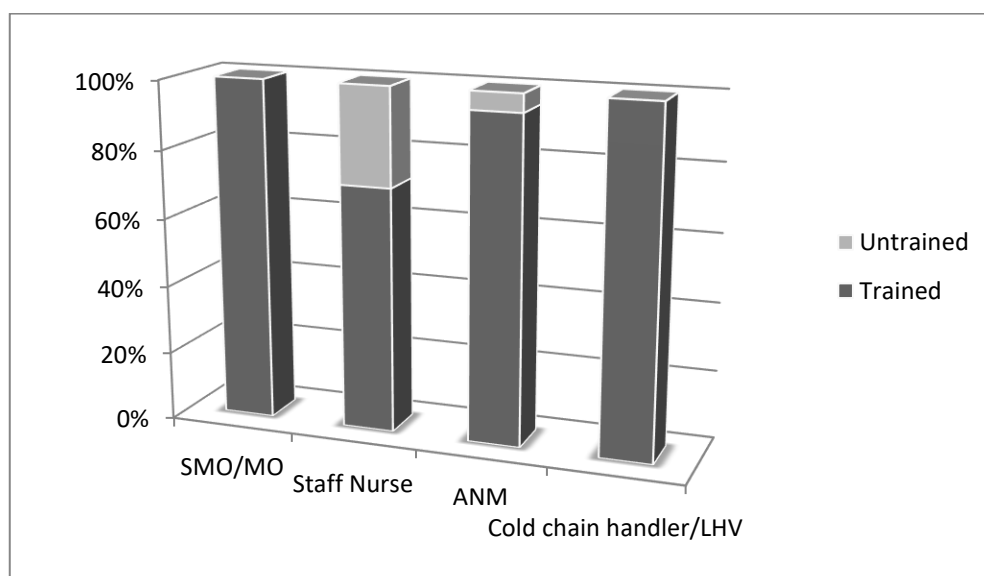


Fig 2 - Staff training status in Yamunanagar

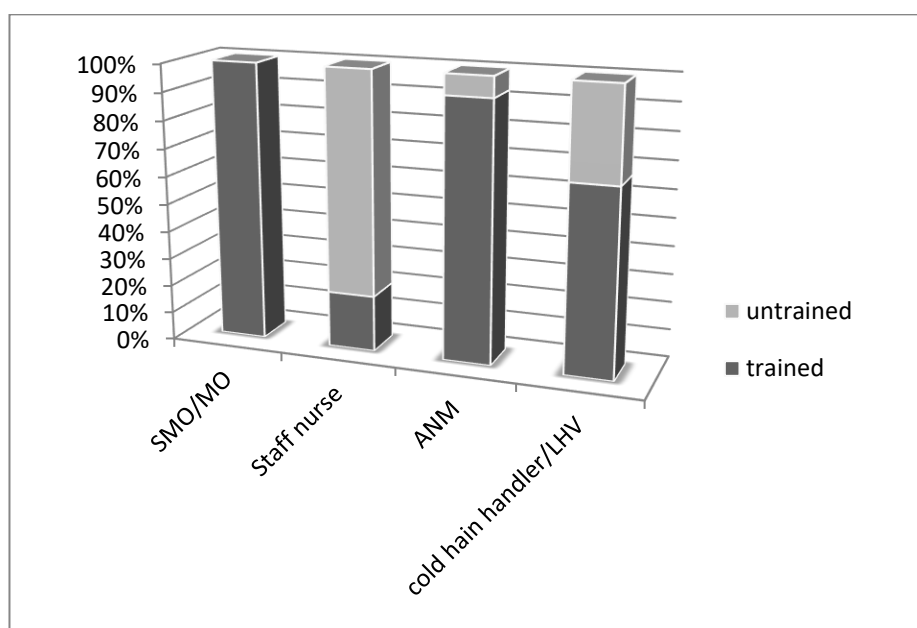


Fig.3 Staff training status in Mewat

In Yamunanagar district, most of the health facility staffs were trained for routine immunisation and new pentavalent vaccine except the staff nurses. Only about 60% of staff nurses were trained and know about the new pentavalent vaccine

In Mewat district, staff nurses were not trained and only 60% of the cold chain handler and LHV were trained.

ANM and cold chain handler are the main core active staffs which deal with the routine immunisation. When compare to these two graphs, untrained staff affect the status of immunisation. This shows unsatisfactory performance in Mewat district.

Most of the staff was aware about majority of the aspect of the pentavalent vaccine like open vial policy, storage, its side effects and treatment. Also some health workers were not providing all four key messages on immunisation to caregiver. This could be due to over workload or lack of reference material.

Cold chain and vaccine logistic management-

There was adequate cold chain capacity to store all UIP vaccine and to accommodate pentavalent vaccine at all facilities. But the maintenance of cold chain equipments was found to be inconsistent in mewat, mainly due to lack of dedicated staff and slow response time of AMC.

The cold chain and logistic related issues identified were-

- Vaccine wastage was not monitored at any facilities in both districts.
- Staffs were aware about how to defrost ILR and Deep freezer but some facility were not doing defrosting regularly when needed.
- Cold chain temperature maintaining log book was maintained properly.

Vaccine forecasting was done on the basis of due list and the previous three months consumption of vaccines.

Vaccine coverage and dropout-

The immunization coverage data were collected form health facility visited. Coverage data on DPT1 and DPT3 in April 2012 to March 2013 and first and third dose of pentavalent vaccine in April2013 to march 2014 were collected. Comparison data for these two periods indicates variable changes in coverage.

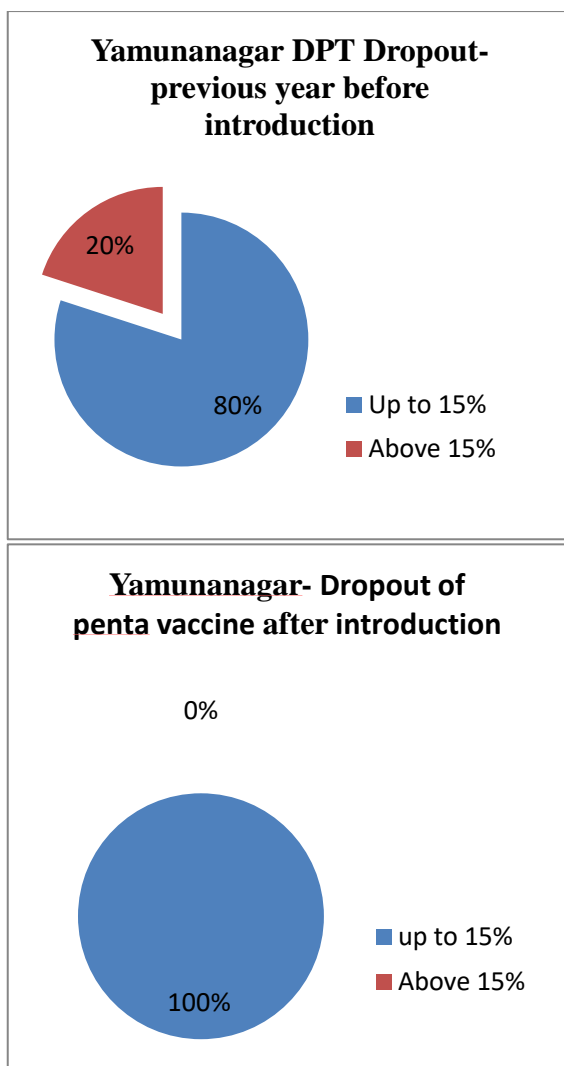


Fig. 4 Dropout comparison between DPT and Pentavalent vaccine- Yamunanagar

There was major change in the dropout rate of beneficiaries after introduction of pentavalent vaccine. In year 2012 to 2013, 20% facilities had dropout rate above 15%, which shows unsatisfactory performance. After introduction of pentavalent vaccine, dropout rate becomes improved and all facility dropout rates come under 15%.

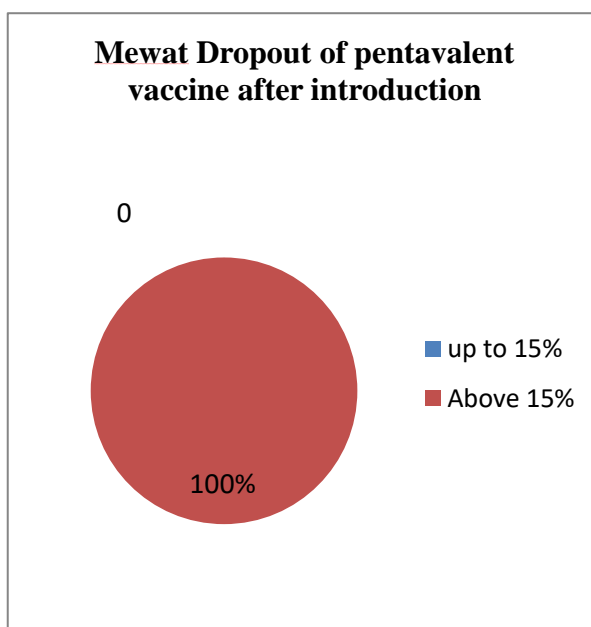
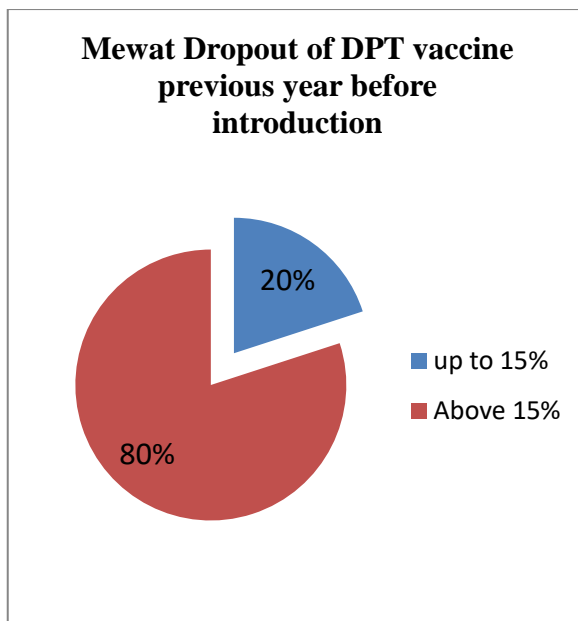


Fig. 5 - Dropout comparison between DPT and Pentavalent vaccine- Mewat

But in Mewat district, dropout rate of all the facility goes above 15%. It could be due to irresponsible work by the staff or a false reporting of vaccination status.

When compare these district, Yamunanagar has a satisfactory performance while there is a need to focus on training of staff and awareness in community in Mewat district.

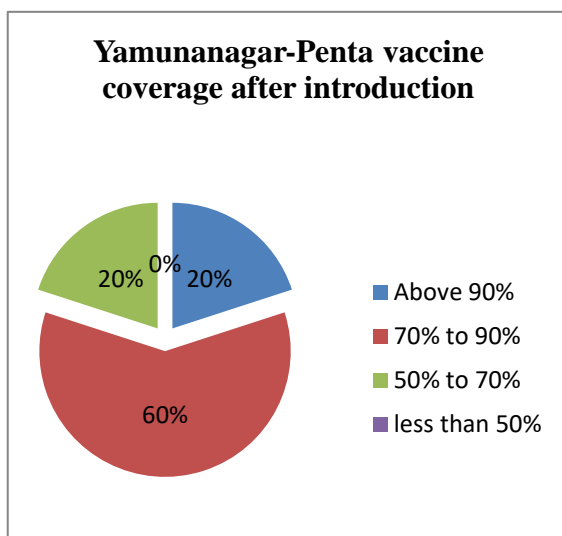
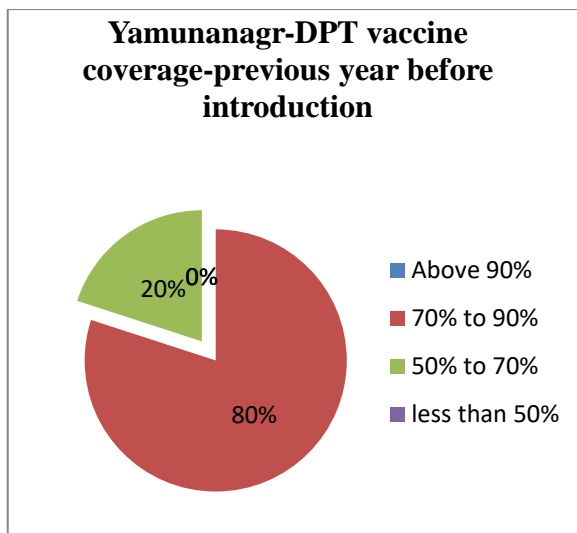


Fig.6 Coverage comparison between DPT and Pentavalent vaccine- Yamunanagar

In Yamunanagar, before introduction, 80% facilities had coverage of the DPT vaccine in 70% to 90% which was reduced after introduction of pentavalent to 60%. But 20% facilities improved their coverage above 90%.

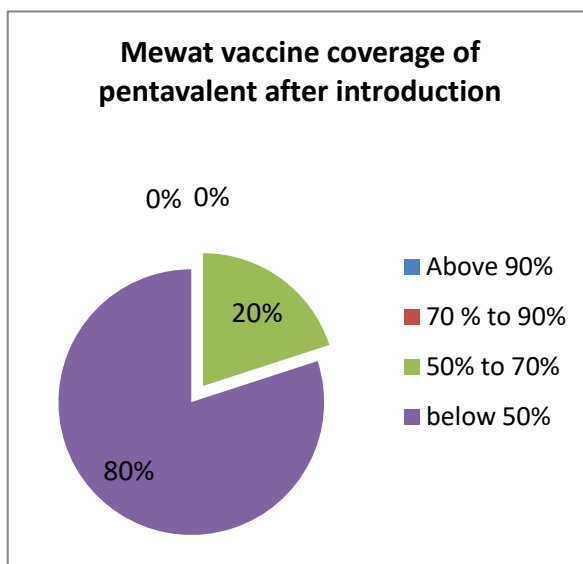
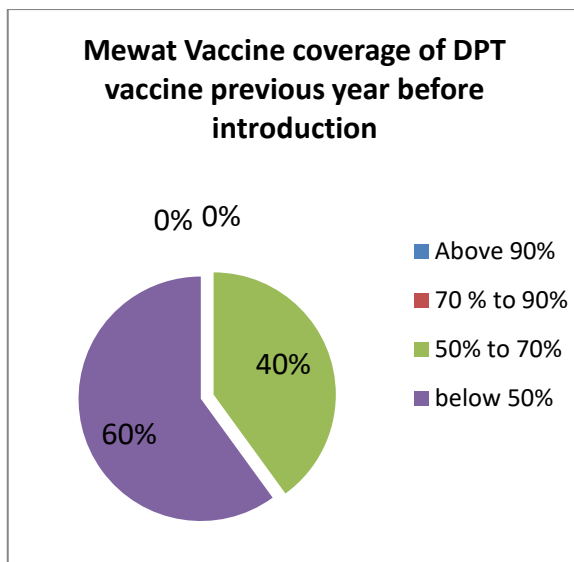


Fig.7 Coverage comparison between DPT and Pentavalent vaccine- Mewat

In Mewat district, 60% facilities had coverage below 50% and 40% facilities had between 50% to 70%. But after introduction it goes down and 80% facilities has coverage below 50%.

It shows a unsatisfactory performance in Mewat district. Many of the health facility staff was not aware about how to calculate coverage rate and dropout rates, which indicated the additional training on this point.

Supervision and monitoring-

The mechanisms were at state level to monitor routine immunization performance through district monthly progress reports, block meetings etc. Also regular supportive supervision was being conducted by state consultants.

After the study, it has found that the supervisory visits by the Medical officers of the facility were not done regularly in most of the facilities. This results to low performance and productivity of the staff. Block meetings were held regularly but all the points were not covered in meeting.

Immunization safety and wastage disposal-

Health staff was largely knowledgeable about immunization safety but few sub optimal waste disposal practice were observed. At every sub centre Hub cutter was used for collecting needle in immunization session. After the session AVD collect Open vial policy vials and the waste material which has to be disposed to PHC. At PHC, the needles were disinfected with the bleaching solution or gluteraldehyde and buried in to closed pit. The other waste material was collected by the outsourced BMW private agency.

In both the district, this BMW disposal system was followed in regularly.

Advocacy, social mobilization and communication-

State level media sensitization was conducted in October 2012 before the launch of new vaccine. State officials responded to the media queries. In workshop, all concern topics like Program Management, schedule of the vaccine, cold chain management, supplies and stock were explained and their systematic reporting was explained.

There were press releases, newspaper advertisements and radio promotion efforts for generating awareness in initial few weeks of vaccine introduction.

When asked to respondent they said that the promotional material was well distributed in the community. Banners were displayed at each sub centre, and ASHA worker distributed hand outs in community.

Community acceptance and awareness of the vaccine-

The pentavalent vaccine introduction led to the reduced number of pricks for prevention from 5 diseases, much to the satisfaction of both parents and health workers. There was awareness among caregivers about the pentavalent vaccine and largely accepted by the community including health workers, professional societies and government officials.

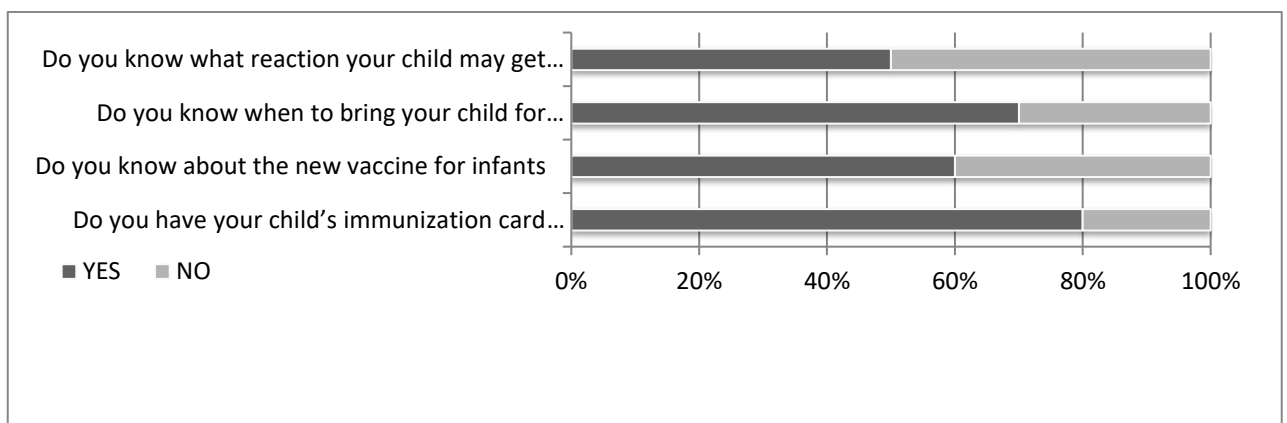


Fig 8.- Caregiver Response in Yamunanagar

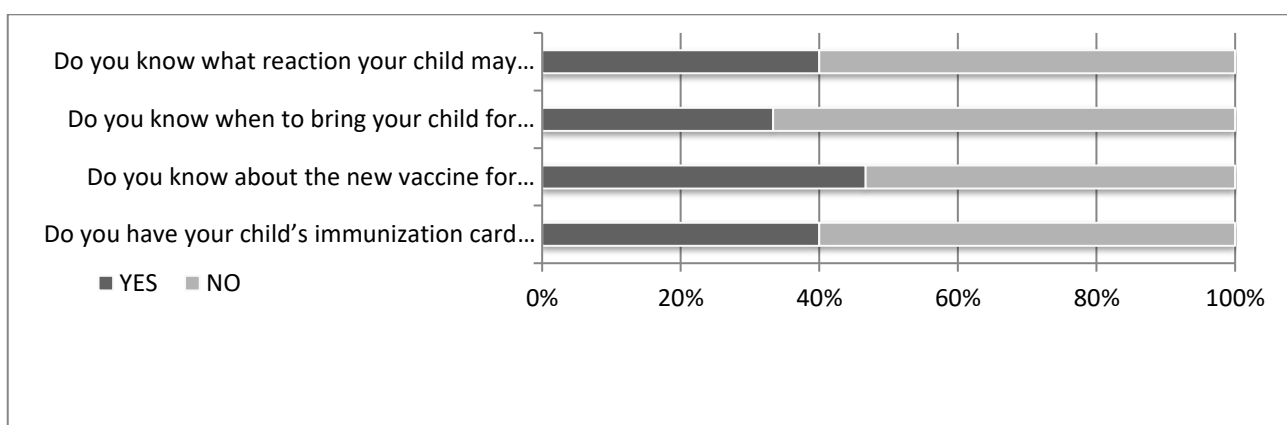


Fig. 9 - Caregiver response in Mewat

After interviewing to caregiver in both district, In Yamunanagar 80% of the mother had child's immunization card while in mewat district only 40% had immunization card. 60% people know about the pentavalent vaccine in

yamunagar while in mewat 45%. When they were asked when to return back for next vaccination, 70% respondent in yamunanagar and 32% in mewat district give yes answer. When they were asked about what are the reactions may get child after vaccination, Only 50% in yamunanagar and 40% in Mewat district gives the positive answer.

LIMITATION

Due to time constraint and limitations to study, only few facilities Medical officers, ANM, LHV were interviewed in Yamunanagar and Mewat district.

CONCLUSIONS

Overall introduction of pentavalent vaccine in Haryana state was a smooth process. Community awareness and acceptance for the new vaccine was great. After the introduction, vaccine coverage was increased when compared with the previous year. Cold chain system was good managed and well maintained in most of the facilities, this could be due to supportive supervision by the health consultants for routine immunization. Disinfection methods were properly followed for routine immunization by collecting waste material at PHC and the buried in closed pit or outsourced BMW.

Despite of these good things, there was some gaps in staff training, vaccine coverage and dropout, waste disposal system, immunization practices.

RECOMMENDATIONS

There is a need of training for the staff nurses in both districts especially in Mewat district which has a very poor performance. The entire cold chain handler should be trained. Approximately 80% of cold chain handler and LHV were trained. Also the new recruiter person should be train.

Vaccine wastage report was not calculated at any facility. Guideline should have to provide for wastage rate to all the facility. Supervisory visits should make mandatory for medical officer especially in mewat district, so the cold chain would be maintained regularly.

There is a need to consider the reasons behind the Dropout and rectify with the proper solutions. It might be due to migration, low awareness in community.

There is some increase in the dropout rate in findings when compare with DPT and Pentavalent vaccine. This could be the migration of people after taking 1st dose of vaccine.

Also there was found the differences between counts of 1st dose and 3rd dose, 3rd dose of pentavalent is higher than 1st dose given to the children this could be due to falls reporting or at the initial phase of introduction of pentavalent, people took 1st dose in private hospital and when they come to know that government also give the same vaccine in free, they come for 2nd or 3rd dose of pentavalent vaccine.

It has found that after introduction of pentavalent vaccine, coverage of the immunization was increase. This could be due to awareness in community and the public promotion through media.

Some beneficiary does not have immunization card when they come at immunization session site. This could be due to card lost by the caregiver or card not given by the ANM. Most of the caregiver doesn't know about the reactions child get after the administration of vaccine and when to bring back for next vaccination. This shows the poor performance of the staff. So there is need of training for the staff about immunization practice.

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ANNEXURE - 1
ANNEXURE - 1
Questionnaire — health facility
Questionnaire — health facility

Date of interview: _____ Name of interviewer: _____

Date of interview: _____ Name of interviewer: _____

This questionnaire was conducted at: _____

☐ This questionnaire was conducted at: _____
Health facility name: _____

☐ Health facility name: _____

Type of health facility (check one):

Type of health facility (check one):

☐ Health Centre/Clinic ☐ Health Post/Outpost ☐ Other (specify) _____

☐ Health Centre/Clinic ☐ Health Post/Outpost ☐ Other (specify) _____

Name(s) and title(s) of person(s) interviewed (please list all persons that you interviewed):

Name(s) and title(s) of person(s) interviewed (please list all persons that you interviewed):

EPI Senior Nurse/Health-care worker responsible for vaccinations (or their deputy) should be interviewed

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

Name: _____ Title: _____

Contact details of most senior person:

Contact details of most senior person: Telephone: _____ E-mail address: _____

Telephone: _____ E-mail address: _____

Documents to request at beginning of interview: (check appropriate boxes)

Documents to request at beginning of interview	Document received	Document reported to exist but not available at time of interview	Document reported to exist but not available at time of interview
Document / data	Document received	Document reported to exist but not available at time of interview	Document reported to exist but not available at time of interview
Introduction plan for new vaccine			
Training materials/reference documents utilized during new vaccine training			
Training materials/reference documents utilized during new vaccine training			
Vaccine management guidelines			
Media campaign/social mobilization/education materials			
Media campaign/social mobilization/education materials (Brochures, posters, pamphlets, etc.)			
Supervisors' stock reports			
Injection safety/waste management policy document			
Injection safety/waste management policy document			
AEFI (vaccine) reporting form			
AEFI (vaccine) reporting form			
Sample child health card/immunization card			
Immunization logbooks, monitoring forms, tally sheets, vaccine registries			
Immunization logbooks, monitoring forms, tally sheets, vaccine registries			
vaccine registries			

Abbreviation	Health-Facility Questionnaire	
PRE-IMPLEMENTATION PLANNING		
GEN	1. Were you (interviewee) working at this health facility at the time of the new Vaccine introduction?	<input type="checkbox"/> Yes <input type="checkbox"/> No Interviewer: If "No", try to get a staff member who was present when the new vaccine was introduced to participate. If not, continue with the interview although it may not be possible to answer all questions.
GEN	2. When was the new vaccine first administered at this health facility?	(DD/MM/YYYY) ____ / ____ / ____ <input type="checkbox"/> Don't know
TRAINING		
GEN	3. Please describe health-facility staff training for the new vaccine introduction, if any.	How many people from this health facility were trained? _____ Who from this health facility was trained? _____ How many of them are still working at this health facility? _____ How long was the training for health facility staff? _____ What were the key topics covered in the training? _____ Did the person from this health facility who was trained, train others in the health facility? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know Was training conducted before vaccine introduction <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, how long before? _____ Was training conducted after vaccine introduction <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, how long after? _____ Who conducted the training for health-facility staff? _____ Other comments on training _____
GEN	4. Are new vaccine introduction guidelines or educational and reference materials from the training available? Ask to see samples.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
GEN	5. Overall, were you satisfied with the training provided?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know

Abbreviation	Health-Facility Questionnaire	
VACCINE COVERAGE		
GEN	6. What is the size of the target population for infant immunizations in this health facility? What is the source of this figure? Note: <i>If not available for <1 year, get information for <2 or <5 years.</i>	<1 year of age: _____ Source of data _____
GEN	7. What formula do you use to calculate vaccine coverage? Include the source of the numerator (doses administered) and denominator (target population).	Formula Numerator source _____ Denominator source _____ Correct formula used <input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	8. What was DTP-1 and DTP-3 vaccine coverage in the year before the new vaccine introduction? Note: <i>Use year before new vaccine introduction or closest administrative period.</i>	DTP-1 _____ year _____ DTP-3 _____ year _____ Calculate drop-out rate: $(DTP1 - DTP3)/DTP1 \times 100 = \text{_____}\%$
GEN	9. What is the coverage of the first and last dose of the new vaccine for the most recent administrative period?	New vaccine first dose (NV1) coverage _____ New vaccine last dose (NVL) coverage _____ Calculate drop-out rate: $(NV1 - NVL)/NV1 \times 100 = \text{_____}\%$
GEN	10. Is coverage of the new vaccine higher or lower than DTP?	New vaccine first dose versus DTP-1 coverage rates _____% Higher ____% Lower <input type="checkbox"/> No change New vaccine last dose versus DTP-3 coverage rates _____% Higher ____% Lower <input type="checkbox"/> No change ★ Key Finding: Percentage change in coverage rate
GEN	11. Is the drop-out rate for the new vaccine higher or lower than the DTP drop-out rate?	New vaccine drop-out rate versus DTP drop-out rate _____% Higher ____% Lower <input type="checkbox"/> No change ★ Key Finding: Percentage change in drop-out rate
GEN	12. How often do you report immunization data to the district? Ask to see a report.	

Abbreviation		Health-Facility Questionnaire
GEN	13. Have immunization registries/child health cards, etc. been updated to include the new vaccine?	Check box if updated <input type="checkbox"/> Vaccine registry/logbook <input type="checkbox"/> Child health card <input type="checkbox"/> Tally sheets/district reporting forms <input type="checkbox"/> Vaccine stock forms <input type="checkbox"/> Other (specify) _____
GEN	14. How many days a week does your site perform outreach immunization sessions, i.e. immunization sessions not conducted at the health facility?	<input type="checkbox"/> Outreach not performed _____ times per week
GEN	15. Are outreach data collected separately?	<input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	16. Do you include the new vaccine in the outreach immunization sessions?	<input type="checkbox"/> Yes <input type="checkbox"/> No. If no, reason _____
GEN	17. What changes, if any, did you have to make to outreach sessions when you introduced the new vaccine?	<input type="checkbox"/> No changes required <input type="checkbox"/> More vaccine carriers required <input type="checkbox"/> Increased number of outreach sessions <input type="checkbox"/> Other changes (specify) _____
COLD-CHAIN MANAGEMENT		
GEN	18. What is the source of power supply for cold storage?	<input type="checkbox"/> Check all that apply <input type="checkbox"/> Cold storage box <input type="checkbox"/> Refrigerator, kerosene <input type="checkbox"/> Refrigerator, electricity <input type="checkbox"/> Refrigerator, solar <input type="checkbox"/> Refrigerator, mixed power source <input type="checkbox"/> Other (specify) _____
GEN	19. The last time there was an interruption in your power supply, what did you do?	
GEN	20. Discuss any changes you had to make in the cold chain before introduction of the new vaccine. Note: Try to distinguish cold-chain expansion/replacement of equipment that is part of normal cold-chain rehabilitation from changes specifically for the new vaccine.	
GEN	21. Were there any problems with the cold chain recognized after the introduction of the new vaccine? If yes, what were the problems and have the problems been addressed? If they have been addressed, how were they addressed?	<input type="checkbox"/> No problems <input type="checkbox"/> Inadequate space <input type="checkbox"/> Frozen vaccine <input type="checkbox"/> Malfunctioning refrigerators <input type="checkbox"/> Power supply/fuel shortage <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> How resolved? _____ ★ Key Finding: Percentage health facilities observed or reported problems with the cold chain

Abbreviation	Health-Facility Questionnaire	
VACCINE MANAGEMENT, TRANSPORT & LOGISTICS		
GEN	22. Do you have immunization policy guidelines for vaccine management? If yes, have they been updated to include the new vaccine? Please provide a copy at time of interview.	<input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	23. How do you forecast vaccine requirements?	
GEN	24. How did estimated requirements change following introduction of the new vaccine?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know If yes, why? _____
PENTA	25. What did you do with remaining quantities of DTP after introduction of the new vaccine?	Check all mentioned <input type="checkbox"/> No policy <input type="checkbox"/> DTP used until finished <input type="checkbox"/> DTP to be sent to district <input type="checkbox"/> DTP destroyed <input type="checkbox"/> DTP to be sent to province/national level <input type="checkbox"/> Other (specify) _____
PENTA	26. Did you have a gap between using up DTP vaccine and receiving the new vaccine? If yes, for how long?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, how many weeks? _____
GEN	27. Have you had any vaccine expirations in the last six months? If yes, what did you do with the expired stock?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, action taken? _____
GEN	28. Have you had any vaccine with VVM in Stage III or IV in the last six months? If yes, what did you do with these vaccines?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, action taken? _____
GEN	29. Did you run out of any vaccines, including the new vaccine, or vaccine supplies in the past six months?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes, vaccines (specify) _____ <input type="checkbox"/> Yes, vaccine supplies (specify) _____ <input type="checkbox"/> No If yes, how many weeks? _____ If yes, reason for stock out _____ ★ Key Finding: Percentage of health facilities reporting vaccine or supply stock out in last six months
GEN	30. Are vaccine orders/deliveries tied to injection supplies (i.e. bundling)? Note: Look at stock records to get this information.	<input type="checkbox"/> Yes <input type="checkbox"/> No Verified by checking stock records <input type="checkbox"/> Yes <input type="checkbox"/> No

Abbreviation	Health-Facility Questionnaire	
WASTE MANAGEMENT AND INJECTION SAFETY		
GEN	31. Did you have to make any changes to your waste-disposal system for introduction of the new vaccine? If yes, explain.	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, explain _____
GEN	32. Have you experienced any problems with your waste-disposal system? Observe site.	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, explain _____
VACCINE WASTAGE		
GEN	33. What formula is used to calculate vaccine wastage and what is the source of the data. Ask for wastage report.	<input type="checkbox"/> Vaccine wastage not calculated Formula: Data source, numerator _____ Data source, denominator _____ Is formula provided correct? <input type="checkbox"/> Yes <input type="checkbox"/> No Source of data: <input type="checkbox"/> Stock books <input type="checkbox"/> Summary sheets <input type="checkbox"/> Other ★ Key Finding: Wastage report on site? <input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	34. What is the vaccine wastage rate of the new vaccine? <i>Note: If vaccine wastage rate is unknown for new vaccine because PIE is done before administrative data are available, record anecdotal reports or attempt part-year calculation.</i>	New vaccine wastage (this administrative period) _____ %
PENTA	35. What was the DTP wastage rate? <i>Note: Use year before new vaccine introduction or closest administrative period.</i>	DTP wastage (administrative period) _____ %
PENTA	36. Has the pentavalent vaccine wastage rate changed when compared to DTP wastage rate (last administrative period)?	New vaccine wastage rate versus DTP wastage rate _____ % Higher _____ % Lower <input type="checkbox"/> No change
MONITORING AND SUPERVISION		
GEN	37. How many times in the past six months have you received a supervisory visit from district or regional level or from a partner agency? Was the visit documented? Ask to see the supervisory book, copy of last report.	Number of visits _____ Is there a written report of the visit? <input type="checkbox"/> Yes <input type="checkbox"/> No Key Finding: At least one documented visit? <input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	38. If yes, who visited, and what were the problems identified?	Who visited? _____ (job title) Problems identified _____

Abbreviation	Health-Facility Questionnaire	
ADVERSE EVENTS FOLLOWING IMMUNIZATION (AEFI)		
GEN	39. Do you have a system and written protocol for monitoring and reporting AEFIs for all vaccines? Please describe the procedure. Ask for a copy of the AEFI protocol and reporting form.	<input type="checkbox"/> Yes <input type="checkbox"/> No If no, why not? _____ ★ Key Finding: AEFI system/protocol in place?
GEN	40. Did you make any changes to the AEFI protocol specifically for the new vaccine?	
GEN	41. Have you had any reported AEFIs for the new vaccine or another vaccine since the new vaccine was introduced? Note: Verify using AEFI log book/registry, if one.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know If yes: How many for the new vaccine? _____ How many for a traditional vaccine? (specify) _____ What were the AEFIs? _____ How were they handled? _____
ADVOCACY, COMMUNICATION & ACCEPTANCE		
GEN	42. Did you have an official launch ceremony at this health facility at the time of the new vaccine introduction? Note: What did it involve, was it successful, did it get much media coverage?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know If yes, describe_ _____
GEN	43. Did this health facility provide any health education messages or materials to the community about the new vaccine at the time of introduction? Ask to see copies of materials.	Check all that apply <input type="checkbox"/> None provided <input type="checkbox"/> Posters <input type="checkbox"/> Brochures <input type="checkbox"/> Health education sessions <input type="checkbox"/> Public meetings <input type="checkbox"/> Other (specify)_ _____
GEN	44. Did you experience any resistance from the community regarding the new vaccine?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know
GEN	45. Do you remember any media focus (e.g. on radio, television or newspapers) on the new vaccine?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe_ _____
HEALTH-CARE WORKER KNOWLEDGE (ask HCW, not head of health facility)		
GEN	46. What is the immunization schedule for the new vaccine?	

Abbreviation		Health-Facility Questionnaire
PENTA	47. What antigens are included in pentavalent vaccine?	<p>Check if mentioned — don't prompt but can tell afterwards</p> <p><input type="checkbox"/> Diphtheria</p> <p><input type="checkbox"/> Pertussis</p> <p><input type="checkbox"/> Tetanus</p> <p><input type="checkbox"/> Haemophilus influenzae type B (Hib)</p> <p><input type="checkbox"/> Hepatitis B (HepB)</p> <p>List others mentioned_</p>
GEN	<p>48. What disease(s) does the new vaccine prevent?</p> <p>Interviewer: For Penta ask about all five antigens <i>Hib vaccine prevents some, not all.</i></p>	<p>Interviewer: Write exact response given</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>★ Key Finding: Percentage HCWs that knew what disease(s) the new vaccine prevents?</p>
GEN	49. What information do you provide to parents before and after vaccination with the new vaccine?	<p>Check if mentioned — don't prompt but can tell afterwards</p> <p><input type="checkbox"/> Name of the vaccine</p> <p><input type="checkbox"/> Diseases it protects against</p> <p><input type="checkbox"/> Benefits to the child and the family</p> <p><input type="checkbox"/> Vaccine schedule/when to return</p> <p><input type="checkbox"/> Normal side effects?</p> <p><input type="checkbox"/> What side effects they should return for</p> <p><input type="checkbox"/> Bring vaccination card</p> <p><input type="checkbox"/> Other health messages (specify)</p> <p>Two or more mentioned? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>★ Key Finding: Percentage HCWs providing two or more accurate pieces of information to parents? <input type="checkbox"/></p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/></p>

Abbreviation	Health-Facility Questionnaire	
GENERAL IMPRESSIONS		
GEN	50. Were there any financial implications for the health facility involved in introduction of the new vaccine?	<p>Ask about the financial implications of each of the following:</p> <p><input type="checkbox"/> Don't know</p> <p>Cold chain <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify _____</p> <p>Vaccine transport <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify _____</p> <p>Wastage <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify _____</p> <p>Communication materials/media <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify _____</p> <p>Training <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify _____</p> <p>Other costs? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify _____</p>
GEN	51. What effect has the introduction of the new vaccine had on your EPI programme?	<p>Please check one that best describes the introduction:</p> <p><input type="checkbox"/> Improved the EPI programme. Please explain _____</p> <p><input type="checkbox"/> Made the EPI programme worse. Please explain _____</p> <p><input type="checkbox"/> No effect. Please explain _____</p> <p>★ Key Finding: Percentage sites reporting that new vaccine improved the EPI programme?</p>
GEN	52. In your opinion, was the introduction of the new vaccine a smooth process or problematic? Please explain.	<p>Please check one that best describes the introduction:</p> <p><input type="checkbox"/> Very smooth. No problems Please explain _____</p> <p><input type="checkbox"/> Generally smooth, minor problems. Please explain _____</p> <p><input type="checkbox"/> Somewhat smooth, some major problems. Please explain _____</p> <p><input type="checkbox"/> Not smooth. Major problems. Please explain _____</p> <p>★ Key Finding: Percentage sites reporting a smooth or very smooth introduction</p>
OBSERVATIONS AT VACCINATION SESSION		
GEN	53. Are (all) vaccines reconstituted correctly (e.g. measles, BCG, penta.)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know (N = unsafe practice)
GEN	54. Are vaccines stored/handled properly during the session, e.g. clean, organized, vaccine vials outside carrier are in foam pad?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know (N = unsafe practice)

Abbreviation		Health-Facility Questionnaire
GEN	55. Are appropriate administration techniques observed (e.g. pentavalent intramuscular injection in the thigh)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know (N = unsafe practice)
GEN	56. Are AD syringes used?	<input type="checkbox"/> Yes <input type="checkbox"/> No (N = unsafe practice)
GEN	57. Are needles recapped (look in safety box for capped needles)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know (Y = unsafe practice)
GEN	58. Are AD syringes disposed of in a safety box?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know (N = unsafe practice)
GEN	59. Is the policy on use of the open multi-dose vial observed?	Date opened marked on vial <input type="checkbox"/> Yes <input type="checkbox"/> No Open vial discarded at end of immunization session <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other observation (specify) _____ <input type="checkbox"/> Unknown (N = unsafe practice)
GEN	60. Summary: How many unsafe practices, based on questions above, were observed?	Number of unsafe practices _____ ★ Key Finding: Percentage of sites with two or more unsafe practices observed
OBSERVATION OF VACCINE STORAGE AREA		
GEN	61. Are all refrigerators clean and properly functioning?	<input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	62. Is there a thermometer inside the refrigerator?	<input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	63. Is the temperature inside the refrigerator currently between +2° and +8° C?	<input type="checkbox"/> Yes <input type="checkbox"/> No What is the temperature? _____
GEN	64. Is there a log of refrigerator temperatures?	<input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	65. How often are temperatures recorded?	<input type="checkbox"/> Twice daily <input type="checkbox"/> Daily <input type="checkbox"/> No records <input type="checkbox"/> Other (specify) _____
GEN	66. Are temperatures monitored and recorded on weekends and holidays? Note: Check specifically for holidays in _____ (insert date of most recent holiday).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Sometimes
GEN	67. Are vaccines arranged as "First expiry, First out"?	<input type="checkbox"/> Yes <input type="checkbox"/> No If no, why not? _____ <input type="checkbox"/> Not applicable. Why? _____
GEN	68. Did you observe any expired vaccines?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, which vaccine and how many? _____
GEN	For vaccines with a VVM 69. Did the VVMs that you observed indicate that vaccine is usable, i.e. Stage 1 or 2	<input type="checkbox"/> Yes, all vaccines usable <input type="checkbox"/> No, some vaccines Stage 3 or 4 (unusable) Specify vaccine and proportion unusable _____ ★ Key Finding: Percentage of health facilities reporting with any VVM in Stage 3 or 4.

Abbreviation		Health-Facility Questionnaire
GEN	For vaccines with a VVM 70. Are vaccines with VVM in Stage 2 arranged so that they are used first?	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Not applicable, no Stage 2
GEN	71. Are there spaces between the vaccine boxes/trays to allow air circulation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
HEALTH COMMUNICATION		
GEN	72. Are any posters or other literature about the new vaccine noted in the health facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No
STOCK ROOM		
GEN	73. Is injection equipment stored in good condition	Adequate space <input type="checkbox"/> Yes <input type="checkbox"/> No Clean and dry conditions <input type="checkbox"/> Yes <input type="checkbox"/> No Well organized <input type="checkbox"/> Yes <input type="checkbox"/> No (i.e. easily accessible) <input type="checkbox"/> Other observation (specify) _____
WASTE DISPOSAL		
GEN	74. How are used AD syringes being disposed of? (If not observed, ask how boxes are disposed).	<input type="checkbox"/> Safety box <input type="checkbox"/> Open bucket <input type="checkbox"/> Other <input type="checkbox"/> Other observations
GEN	75. How are used safety boxes disposed of? (If not observed, ask how boxes are disposed). Note: Specify whether box is emptied and reused or destroyed with contents inside.	<input type="checkbox"/> Incinerator <input type="checkbox"/> Pit-burned <input type="checkbox"/> Pit-exposed <input type="checkbox"/> Pit-buried <input type="checkbox"/> Above-ground area <input type="checkbox"/> Box reused <input type="checkbox"/> Other observation
GEN	76. Were discarded needles and syringes observed on the ground outside the facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No
GEN	77. Is waste-disposal site closed off?	<input type="checkbox"/> Yes <input type="checkbox"/> No ★ Key Finding: Percentage of health facilities with clean, closed-off disposal sites
GEN	78. Describe any other observation of the disposal site.	
NOTES AND COMMENTS		
	If you were unable to visit the cold store or dry store area, please mention reason. Record any interesting positive or negative anecdotes or comments by health-care workers.	

ANNEXURE - 2

Questionnaire — *mother or caregiver*

Date of interview: _____ Name of interviewer: _____

Region: _____ District: _____ Health-facility name: _____

Interview mothers/caregivers whose child has just received the new vaccine (can also talk to a group of mothers waiting to be vaccinated to get their impressions). Please modify questions as appropriate for the type of new vaccine introduced. Begin the interview by saying the following “I would like to ask you a few questions about the vaccines your child received today. The answers you give will help us learn more about how to introduce a new vaccine.” (N.B. You may need someone conversant in the local language to ask the questions).

<p>1. Do you have your child's immunization card with you today? If yes: May I please see it? Note: <i>If pentavalent vaccine is not used, ask for Hib, Hep B, and DTP separately.</i></p>	<p>Use card to answer the following</p> <p>Card present <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Vaccines received today</p> <p><input type="checkbox"/> Pentavalent <input type="checkbox"/> OPV <input type="checkbox"/> Measles <input type="checkbox"/> BCG</p> <p><input type="checkbox"/> Other (specify) _____</p> <p>Card updated?</p> <p><input type="checkbox"/> Old card (not updated to include new vaccine) <input type="checkbox"/> Old card (with new vaccine written in by hand) <input type="checkbox"/> New card (updated to include new vaccine)</p>
<p>2. What vaccine(s) did your child receive today? Note: <i>Check if answers correct by looking at vaccination card or, if card not available, verifying with clinic record.</i></p>	<p>Check one box</p> <p><input type="checkbox"/> Names all vaccines (answer correct) <input type="checkbox"/> Names some vaccines (partially correct) <input type="checkbox"/> Does not know <input type="checkbox"/> Mentions specific health benefit of vaccine (e.g. for _ Hib vaccine says, “got vaccine to prevent meningitis or pneumonia”) <input type="checkbox"/> Mentions general beneficial effects of vaccines, e.g. “my child got vaccines to keep him healthy” <input type="checkbox"/> Other (specify) _____</p>
<p>3. Do you know about the new vaccine for infants? Note: <i>Be country specific; give the time when the vaccine was introduced.</i></p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, which disease(s) do they prevent?</p> <p><input type="checkbox"/> Does not know <input type="checkbox"/> Answer correct <input type="checkbox"/> Answer incorrect</p>
<p>4. If yes to question 3. How did you receive the message about the new vaccine? Note: <i>Radio, newspaper, television, health-care worker, friend,</i></p>	
<p>5. Do you know when to bring your child for his/her next vaccination? Note: <i>If answer is no or yes but incorrect, please advise mother when next vaccination is due.</i></p>	<p><input type="checkbox"/> Yes (answer correct) <input type="checkbox"/> Yes (answer incorrect) <input type="checkbox"/> No</p>
<p>6. Do you know what reaction your child may get following his/her vaccination today? Note: <i>This question is trying to differentiate between baseline knowledge and knowledge received at current vaccination session.</i></p>	<p><input type="checkbox"/> Yes (answer correct) <input type="checkbox"/> Yes (answer incorrect) <input type="checkbox"/> No</p> <p>Interviewer: <i>If answer is no or yes but incorrect, please advise mother of potential side effects, e.g. mild redness, pain, mild swelling at injection site,</i></p>

	<i>mild fever, drowsiness and irritability.</i>
7. Other comments or observations. Record any interesting positive or negative anecdotes or comments by mothers.	