District Level Comparative Analysis of Vaccination and Other Health Services

Dr. Rakesh Chandra
Professor, Department of Philosophy, University of Lucknow, Lucknow
Mr. Pravesh Dwivedi
Development Professional & Health Expert
Dr. Ritesh Dwivedi
Assistant Professor, Amity Business School, Amity University Uttar Pradesh, Noida

Abstract

Universal immunization of children against common vaccine preventable diseases is the most important aspect of childcare programs. It has long been a goal of the Universal Immunization Program. National Population Policy, 2000 has also stressed on development of Indian Immunization Program, as India is one of the largest in the world, in terms of quantities of vaccines used, numbers of beneficiaries, and the numbers of immunization sessions organized. This program is spread all across the country and seven vaccines are used to protect children and pregnant mothers against tuberculosis, diphtheria, pertusis, polio, measles tetanus and hepatitis-B. Some other supplements like vitamin A and iron tablets have also been added with this delivery mechanism to support overall nutritional level of children and their mothers. To assess the grassroot level condition, this study has tried to explore and compare the different parameters related to routine vaccination and supplement distribution in some selected districts. Role of ASHAs and ANMs is very important for this whole immunization program and to enhance the coverage in qualitative manner, certain evaluation parameters must be established like how many households are aware of sanitation, hygiene, preventive health and healthy lifestyle through ASHA and ANM work.

Key Words: Vaccination, health services, child vaccination, vitamin supplementation,

I. Introduction

A. Immunization

Immunization program is the cornerstone of public health, world over. Vaccination was practiced in India since the early 1900s, especially against smallpox, in late 1940s. In 1962, BCG inoculation was included in the National Tuberculosis Control Program. A formal program under the name of Expanded Program of Immunization (EPI) was launched in 1978. This gained momentum in 1985 under Universal Immunization Program (UIP). UIP was merged in Child Survival and Safe Motherhood Program (CSSM) in 1992-93. Since 1997 immunization activities are an important component of Reproductive and Child Health (RCH) program. A National Technical Advisory Group on Immunization (NTAGI) was setup in 2003 and a Midterm Strategic Plan (MTSP) was developed in 2004. From April 2005, immunization is an important component of RCH-II under the National Rural Health Mission (NRHM).

In the state of Uttar Pradesh, the RI sessions are held for 2 days in a week– Wednesdays and Saturdays, thus 8 sessions per sub center per month are presumed to be held. The state proposes to hold 4-8 session in a month for any sub-centre as required according to its population and beside this, immunization sessions are also being held in District Hospital, PPC, Urban Health Posts and outreach sessions in slums of big cities. Strategy aims to improve equity in access to immunization by targeting difficult-to-reach populations. It involves:

- Re-establishment of regular outreach services;
- Supportive supervision and on-site training;
- Community links with service delivery;
- Monitoring and use of data for action;

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- Better planning and management of human and financial resources.

One outreach session of Routine Immunization on Saturday will be organized as "Village Health and Nutrition Days" in the Gram Sabha of each village per month to expand access to care and improve quality. There are 51914 Gram Sabha which are functional in the State, so 51914 Village Health and Nutrition Programs will be organized per month in the villages of Gram Sabha. The improvement in fully immunized coverage from 30.3 (DLHS-3; 2007-08) to 40.9 (CES -2009) reflects an increase in access to the immunization services and left out children have been decreased from 24% (DLHS-3; 2007-08) to 17.8 % (CES 2009). CES 2009 data shows BCG coverage in the state is 76.4%, while 58.1% children are being reached with DPT 3 doses with the dropout of 24%. If we compare BCG coverage with Measles coverage, the measles coverage is 52.8% with the dropout of 30.9%. The CES 2009 data provides a base that, if children reached with BCG vaccine are being tracked subsequently in RI sessions in a systematized way then we can reduce the drop-out rate significantly. According to CES 2009 BCG coverage is 76.4 %, which is good but some Districts are having poor access.

B. Vitamin A

Vitamin A deficiency, which is one of the most common nutritional deficiency disorders in the world, is closely associated with night blindness. Vitamin A deficiency can cause eye damage and a higher risk of dying from measles, diarrhoea, or malaria. The National Program on Prevention of Blindness targets children under the age of five years and administers oral doses of vitamin A every six months, starting at the age of nine months. Government of India recommends that, children under five years receive Vitamin A supplements every six months, starting at age 9 months.

In Uttar Pradesh vitamin A is supplied by Government of India as a part of Kit A which faced a lot of ups and down. In 2010, state government procured 10,450,000 appli-caps through UNOPS which met only 20% of the requirement. Hence, UNICEF and MI support was sought in 2009 (for June 2009 BSPM round) and 2010 (for December 2010 round) respectively for holding the rounds. Since the supply from MI was received in January 2011, hence the second bi-annual round of 2010 was spilled over to 2011, resulting in supplies being used for the 1st round of 2011 in January–February 2011. District level coverage of data of 1st round held in Jan–Feb 2011 shows coverage level of 50% so far.

Waiting for Kit A supplies, the round that had to be conducted with a six month interval was then announced in December 2011, after a gap of 10 months after receiving a confirmation from GoI that Kit A would be reaching the districts in December 2011. Hence, GoI had also not approved supplies of vitamin A from MI or UNICEF to GoUP to tide off the supply crisis. After receiving assurance from GoI that kit A supply will arrive in December 2011 and in the interest of children's health, second round of BSPM was announced and was conducted from 15th December 2011 to 15th January 2012 using the balance supply which could suffice only for 36% of the children. However the supplies reached in March 2012 from GoI after the BSPM round.

Table I: Vitamin A

Vitamin A bottle(100 ml) requirement for one round	**2009**		**2010**		**2011**	
	Jun	**Dec**	**June**	**Dec**	**Jan**	**Dec**
	542647	542647	542647	542647	440556	4400556
Supply available with State for the rounds	295800 bottles provided by UNICEF	22466 kit A i.e 269592 bottles received from Centre	No fresh supply (managed through left over	10450000 appli-caps of 1 ml each received by State from UNOPS	Managed from MI supply	No supply

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			supplies)	+419208 bottles supplied by MI		
Children administered vitamin A	13334040	13885215	10492449	No round as MI supply reached in January 2011	13110201	9326196
Total targeted Children	25418066	25418066	25744940		25966797	25966797
%Coverage	53%	55%	41%		50 %	36%

II. Study

The present study attempts to investigate the behavior of different service providers related with health care delivery system including PHC /CHC and sub centers at grassroots level. Many civil society organizations have evaluated government health schemes NRHM and ICDS. Collecting these social audit reports or impact analysis brief findings provided much needed database. Discussion with guide, CSOs, health experts, common people, and elected representatives of the villages provided sound guidelines for the effective handling of study. Common people are most important stakeholder of the total exercise. School teachers living in the village area supported this whole study whole–heartedly and guided for the best. People have expressed their concerns through answering question.

The selected area in the study is spread in four district of UP viz **Bahraich, Balrampur Varanasi,** and **Lucknow**. These districts are selected on the basis of data of DLHS –3, 2007-08. In this research, 30 lactating women (having child nine to twenty four months) have been selected as respondents, using convenience sampling from 5 villages each selected randomly from 4 blocks each in above mentioned 4 districts. It is clear that total 600 respondents have been interviewed during data collection process. During the

interaction male members (preferably husband of the respondent) have also been interviewed on some crucial issues from their own perspective.

Objective of Study

To assess the delivery of different health services (immunization) related with child healthcare at grassroot level.

Sources of Data

Responses were collected through interview schedule and information collected through observation technique has been the main source of primary data. Interview schedules were used to collect primary data. The interview schedules were prepared after studying a lot of research literature, text books and consulting reproductive health experts and development workers. Reports on NFHS-3 and DLHS -3, news articles and case studies published in daily newspapers, books and magazines on reproductive health and other literature available on MCH care problems have been the main sources of secondary data.

III. Data Analysis

1. TT Vaccination is very necessary for pregnant women; it protects pregnant women and child from infections of tetanus at the time of delivery. High performing districts showed 91.33% of full TT

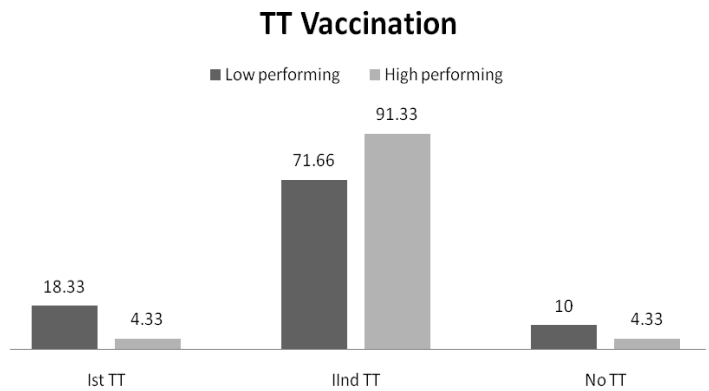

Fig 1: TT Vaccination

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vaccination while only 71.66% respondents of low performing districts were having full TT vaccination. Gap between both types of districts comes near about 20%. It's very shocking and disturbing because many other reproductive health indicators are not showing too big gap in high and low performing districts in comparison to this indicator.

Main reason of low percentage of TT vaccination in low performing district is lack of awareness in respondents. In low performing districts respondents were not serious about TT vaccination necessity and there were safe deliveries without vaccination. It means service providers are not very concerned on this issue and they have not given proper counseling to pregnant women on this matter. Majority of TT vaccination happens in Village Health and Nutrition Day (VHND) but research shows that very few respondents know about this day. Women of metro high performing districts do not know about this day, but they knew the importance of vaccination through various advertisement sources ranging from TV and other medium of communication. This study shows near about 28.63 % respondents from high performing district have knowledge of VHND.

2. As per National family Health Survey-3 2005-2006, currently 59% pregnant women are anaemic in India. As per the study, in both types of districts, nearly 45% respondents have not received Iron tablets. While under PIP 2011-12 health department has claimed

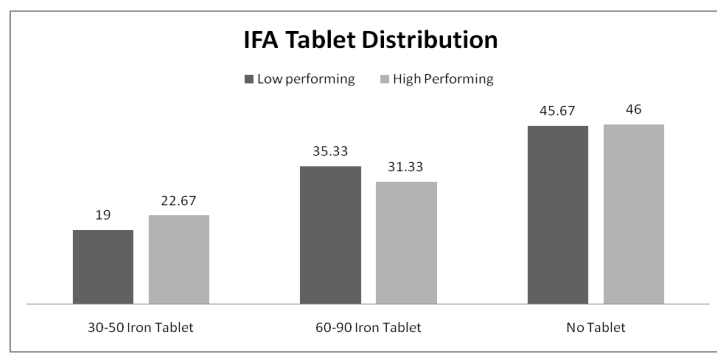

Fig 2: IFA Tablet Distribution

that iron and folic acid tablets are being proposed for all PW, whether coming for institutional deliveries or not. Provision of iron folic acid for all the pregnant women has been made for all who reach sub centers or VHNDs. It is obligation of government to ensure availability of these. Actual situation is very different as, 35.33% respondents from low indicators district and 31.33% respondents of high performing districts said yes about receiving 60 to 90 IFA tablets. It means near about 65% women are not receiving the full dose of IFA recommended by health department of UP. Under DLHS III survey only 28.4% of Lucknow and 25.6% of Varanasi women, received IFA tablets. DLHS survey also showed the same picture of IFA supply for other districts also.

3. This research also focuses on counseling pattern for consumption of IFA tablets. Feeding of IFA tablets is very necessary because mostly rural women are anemic and in rural circumstances they are not always planning for institutional delivery. Food patterns are also not good for women in rural India as women are always eating in the last, after all family members have their food. Many times, it is seen that not enough food is left for women members and they fill their stomach with water.

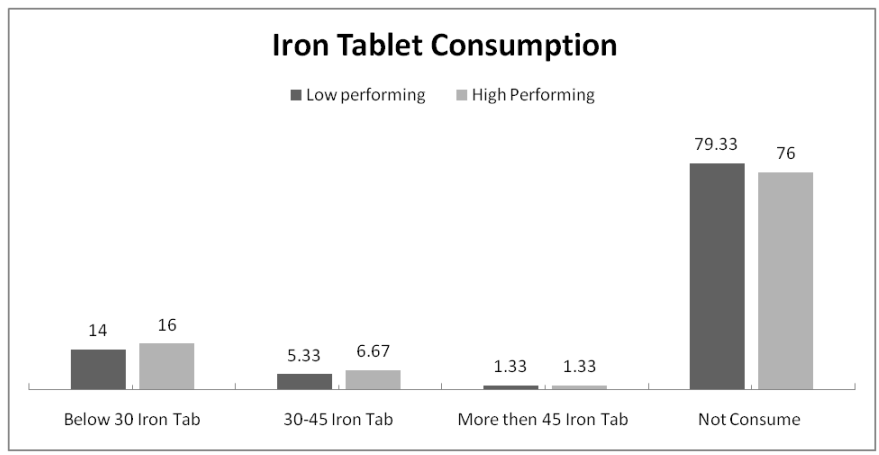

Fig 3: Iron Tablet Consumption

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This research shows 79.33% respondents from high performing and 76% from low performing districts have not taken these tablets due to various reasons. 14% respondents from high performing and 16% respondents from high performing have taken equal or less than 30 tablets during pregnancy period. ASHA and AWW distribute IFA tablets to pregnant women for completing their job only, but proper counseling towards consumption is missing altogether. Respondents do not know the importance of IFA tablets and effects of swallowing IFA tablets. Many women reported that they left consuming IFA tablets due to vomiting and black potty. Both symptoms are initial day effects of consuming IFA tabs and lack of proper counseling is the main reason behind less or irregular consumption of IFA tabs.

4. Take Home Rashan (THR) is ready to eat food, supplied by ICDS department to all pregnant and lactating women to fight with malnutrition. Data shows 98.67 % THR supply in High Performing districts and 81.67% in low indicator districts. If one looks on supply side it is really good in high performing districts.

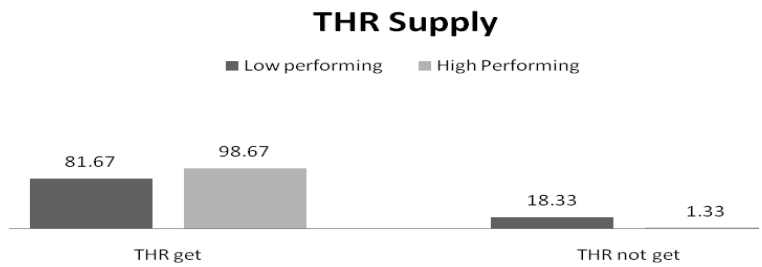

Fig 4: THR Supply

5. Consumption of Take Home Rashan is a real challenge because AWW are solely responsible for counseling of pregnant mothers and THR consumption are also very bad especially in remote districts.

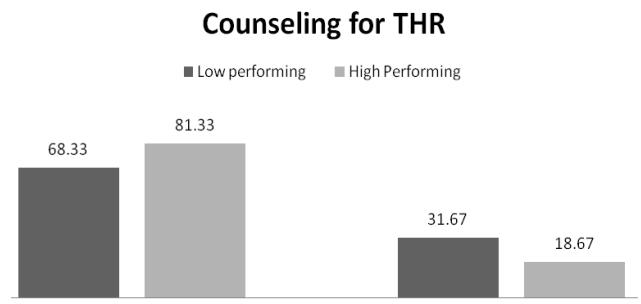

Fig 5: Counseling for THR

AWWs are not counseling pregnant women for regular intake of THR and respondents are not aware about benefits of the THR. The study shows that in low indicator districts 68.33% women intake THR regularly, while in high performing districts 81.33% respondents report for having THR. Counseling for eating THR is very necessary in low performing districts because 31.67% respondents reported about not eating THR.

6. In low performing district 33% respondents accepted that they faced emergency situations during pregnancy. Compare to this in high performing district only 15.67% women faced the emergency situation. This data reflects that in low performing district women are not taking proper care of themselves and it seems that they have not received proper care from family.

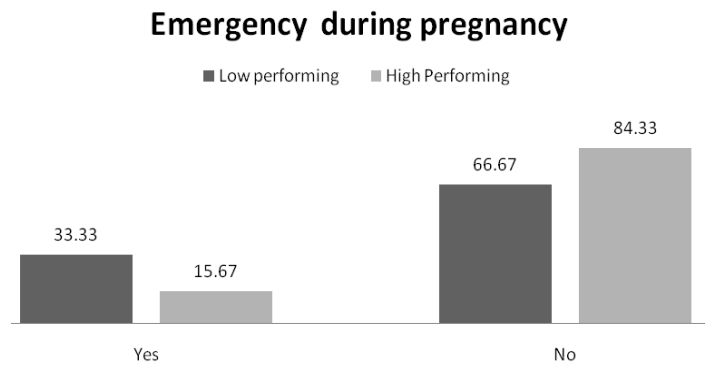

Fig 6: Emergency during Pregnancy

7. Research focuses on respondent's choice in case of emergency. Nearly 37.33% respondents from low performing and 38% respondents from high performing districts said, they would call ANM in

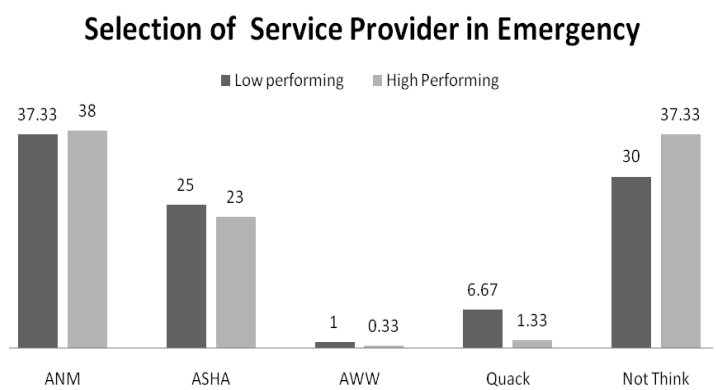

Fig 7: Selection of Service Provider in Emergency

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any emergency situation. Nearly 23% respondents of high performing and 25% respondents from low performing districts told they would call ASHA worker in any emergency situation. In low performing districts 6.67% respondents said that they would rush to the nearby village in case of emergency.

In figure 7, 33% women faced emergency and about 30% from same districts do not even think about calling the right person in some emergency situation. The findings show that one third of respondents do not even know the danger signs during pregnancy. This situation reflects that counseling part is very weak in low performing districts and indeed it is major concern in improving the maternal and child health indicators in these districts.

8. This research finds the counseling practices inappropriate at the grassroots level and counseling on health and nutrition by ANM, ASHA and AWW is very weak. About 47.67% respondents from low performing districts and 55.33% from high performing district told they have been advised on health and nutrition. ASHA & AWW both are living in the same village with the respondents but it was very unfortunate that 52.33% respondents from low performing and 44.67% respondents from high performing districts told they were not counseled by any health worker for even once.

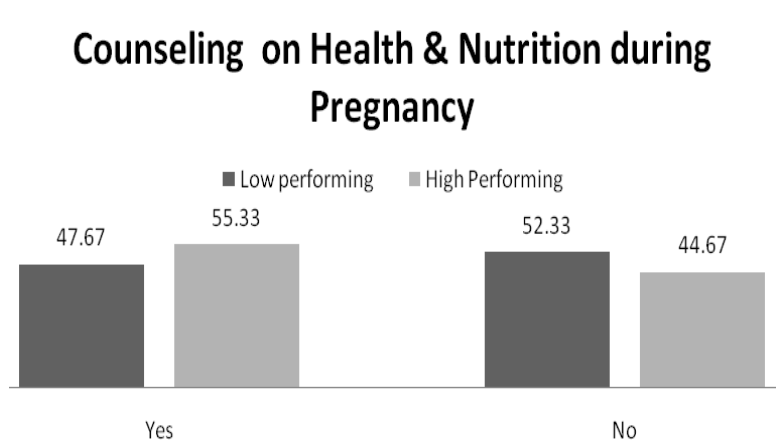

Fig 8: Counseling on Health and Nutrition during Pregnancy

9. According to data polio vaccination is very high and seems satisfactory. 92.33 % people from low indicators and 94.33% from the high performing districts completed zero dose polio vaccination in regular vaccination program. Only 7.67% from low and 5.67% from high indicators districts respondents have not gone for zero dose polio vaccination. Here respondents accepted that they have been covered through special polio campaigns also.

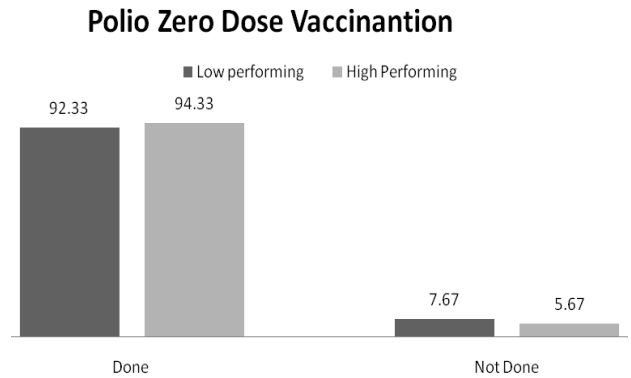

Fig 9: Polio Zero Dose Vaccination

10. Hepatitis-B Zero Dose vaccination is very high and adequate. 91.33 % people from high indicators and 89.33% from the low performing districts completed zero dose HB vaccination. Only 10.67% from low and 8.67% from high indicators districts respondents have not gone for zero dose HB vaccination.

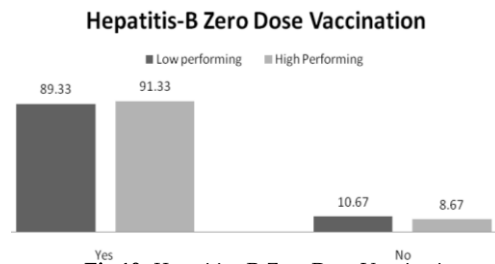

Fig 10: Hepatitis –B Zero Dose Vaccination

11. BCG vaccination is also very high and at satisfactory level as 90.33 % people from low indicators and 89.33% from high performing districts has been covered under

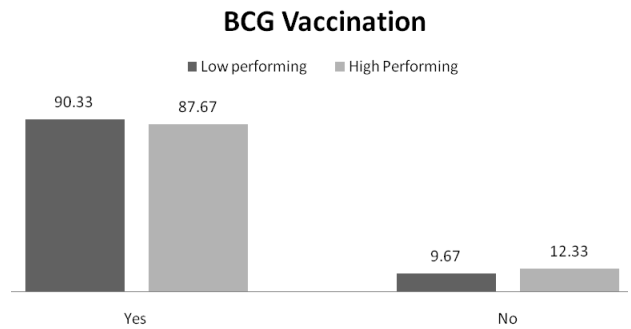

Fig 11: BCG Vaccination

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BCG vaccination. About 9.67% respondents from low and 12.33% from high indicators districts have not been covered under BCG vaccination. BCG vaccination needs to be strengthened more as tuberculosis patient are rapidly growing in India and BCG vaccination protects from tuberculosis.

12. Vaccine of DPT protects child from three diseases diphtheria, pupates and tetanus. Full protection needs three doses of DPT vaccine administered at one and half month, two and half and three and half months. Research shows that 66.67% respondents from high indicator districts have full dose of DPT however only 57.33% from low indicator district respondents received the same. Result shown 21% respondents from low and 16.33% respondents from high indicator districts are only administered two doses of DPT. 8.67% from high indicator and 12.33% from low indicator districts respondent administered only one dose of DPT vaccine. It's very sad that parents take his baby for DPT dose but not completing full course of vaccine. Somehow it's also failure of counseling because at the time of first dose vaccination, proper counseling will motivate parents to complete the course.

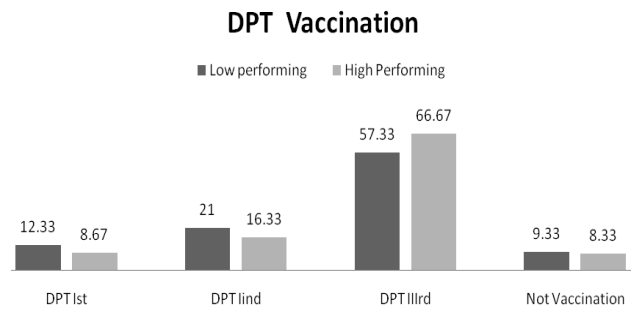

Fig 12: DPT Vaccination

13. Full protection needs four doses of HB vaccine in which administration starts from zero day then one and half month, two and half and three

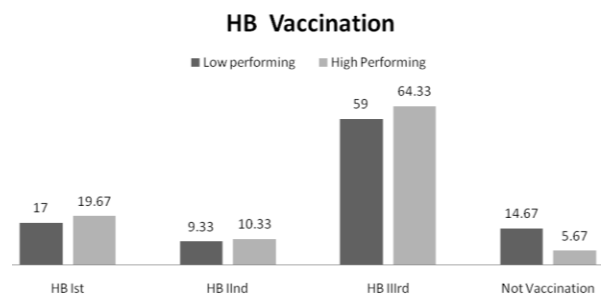

Fig 13: HB Vaccination

and half months, it is a regular pattern followed in routine immunization program of NRHM. Research shows that 64.33% respondents from high indicator districts are having full dose of HB however only 59% from low indicator district respondents received all three doses. Result shown 9.33% respondents from low and 10.33% respondents from high indicator districts have been administered only two doses of HB. 19.67% from high indicator and 17% low indicator districts respondents have been administered only one dose of HB vaccine.

Again research marked that due to lack of counseling, community people come forward for one time to save life of their children from this dangerous disease but do not complete the full course of vaccine. This goal can be easily achieved by proper counseling itself and better service delivery.

14. India will become a polio free country in this year as announced by World Health Organization. Vaccination of polio is being done by two ways in India, first through routine vaccination program and second organized through special campaigns. Research showed that 64.67% respondents from high indicators had full dose of routine polio vaccine however only 68.67% from low indicator respondents received all three doses. Result shown 10% respondents from low and 10.67% respondents from high indicator districts have only been administered with two doses of polio vaccine. 16.33% from high indicator and 17.67% from low indicator districts respondents have

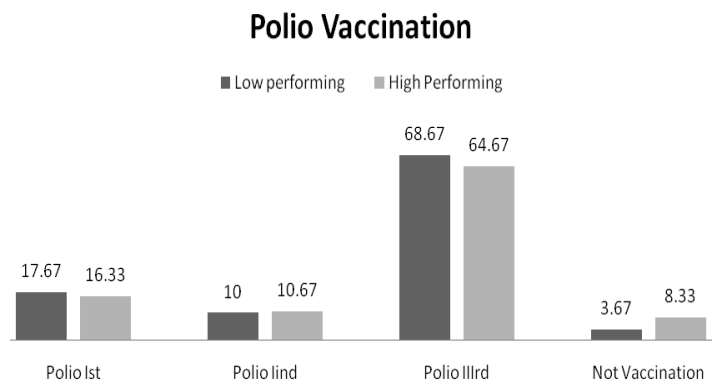

Fig 14: Polio Vaccination

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been administered with only one dose of polio vaccine. Respondents said that they have been covered through multi step polio vaccination campaigns.

15. Measles vaccine is a highly effective vaccine and prevents child from this dangerous disease. This vaccine acts by stimulating the innate immune response and provides long term protection against the disease.

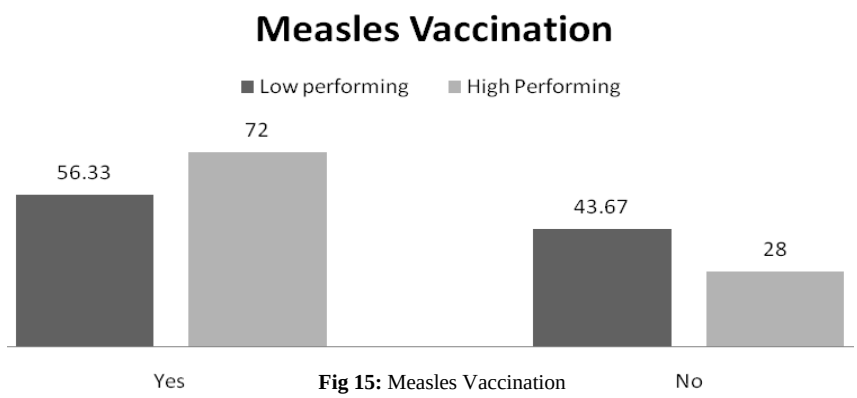

Fig 15: Measles Vaccination

Measles vaccination is very important for the safe life of child. About 56.33 % of respondents from low indicators and 72% from high indicators districts had measles vaccination done. About 28% from high performing and 43.67% from low performing districts children were not given measles vaccination. Gap between high and low performing districts is very high and this is a matter of worry because protection from measles is very necessary for child's life.

16. Research shows, in high performing districts, 67% respondents went for vitamin A supplement however in low performing districts 61.33% respondents went for vitamin A Vaccination. 38.67% respondents from low indicator districts have not

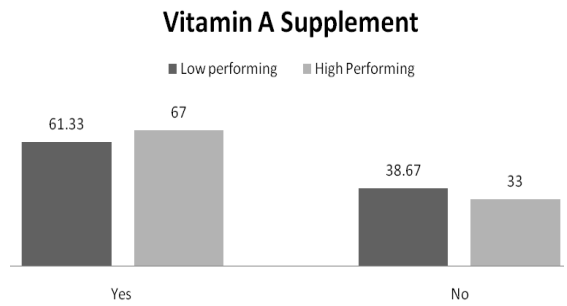

Fig 16: Vitamin A Supplement

taken vitamin A supplement and 33% respondents from high performing districts also have not taken vitamin A supplement.

17. Full protection needs four doses of HB vaccine, four doses of polio vaccine, three doses of DPT vaccine, BCG, Measles and Vitamin-A within zero days to nine month period. Research shows that 41.00% respondents from high performing districts received full vaccination however only 36.67% from low indicator respondents received the same. This data is really very bad because trends of vaccination are quite good but regularity is an issue. Again research proves proper counseling by field based staff and home visits is surely inadequate to improve the grassroot level condition.

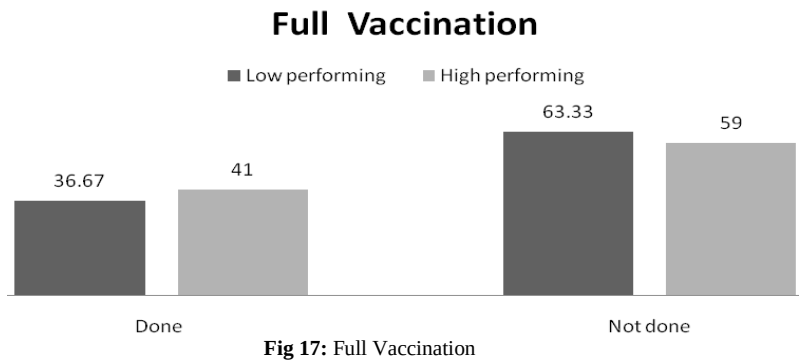

Fig 17: Full Vaccination

IV. Conclusion and Suggestion

A. TT Vaccination and IFA consumption

TT vaccination and IFA consumption are very low in low performing districts. This shows that awareness among people living in high performing districts is good enough and respondents know the importance of TT vaccination. Research suggests that there should be some special interventions in low performing districts for spreading awareness on this issue.

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B. Take Home Rashan (THR)

Pregnant women are getting THR every week from the AWW centers. Sometimes Quality of THR is an issue in Uttar Pradesh because its distribution is in loose form and availability of these nutritional foods is inadequate in AWC. Govt of UP must learn from adjoining state of MP where THR is being supplied in packed packets.

This study also shows that more than 50% respondents having monthly income below Rs 2000 and they cannot afford expensive dry fruits or fruits for their pregnant women. In this case, if proper counseling is done and pregnant mothers start taking THR regularly then mothers and their babies both will remain safe and healthy.

C. Routine Immunization

This study made an attempt to explore the immunization status of pregnant women and children (0-12 months old) for different vaccines which was measured through recall method or vaccination card.

Research shows polio vaccination is very high and seems satisfactory. More than 90% people from low and high indicator districts have completed zero dose polio vaccination. On the other hand, 64.67% respondents from high indicators having full dose of routine polio vaccine however only 68.67% respondents from low indicator district received all three doses. It can be concluded that polio vaccination have been implemented quiet well.

Hepatitis-B Zero Dose vaccination is also very high and adequate. 91.33% people from high indicators and 89.33% from the low performing districts completed zero dose HB vaccination.

BCG vaccination is also very high and satisfactory. 90.33% people from low indicators and 89.33% from the high performing districts completed BCG vaccination.

Research showed that 66.67% respondents from high indicators were having full dose of DPT however only 57.33% from low indicator district respondents receive the same. It is not satisfactory level of vaccination and it has to be improved through better service delivery.

Research showed that 64.33% respondents from high indicators were having full dose of HB however, only 59% from low indicator respondents received all three doses.

56.33% respondents from low indicators and 72% from high indicator districts having measles vaccination done. Research showed that 41.00% respondents from high performing districts received full vaccination however only 36.67% from low indicator respondents received the same. DLHS survey also tells the same story as the coverage of full immunization had declined from DLHS-1 to DLHS-2 (44 percent to 26 percent) but it has increased gradually to 30 percent in DLHS-3.

In today's scenario where India is going to become a superpower in the world, this level of healthcare facilities are indeed very shameful and one has to investigate why National Rural Health Mission and other health machinery have failed towards this objective of universal routine immunization.

D. Vitamin A

Vitamin A is essential for the functioning of immune system and for healthy growth and development of children. Immunization contacts offer unrivalled opportunities for delivering vitamin A to children who suffer from deficiency. Nearly one third

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respondents in both types of districts have not taken Vitamin A supplement and it is very alarming condition to deal with.

E. Counseling Services

If people/pregnant mothers become aware about importance of vaccination and all other safeguards during pre and post pregnancy condition through counseling services they will come forward in more numbers to avail the facilities. But it is very much clear from the research findings that counseling service has not been provided in needed manner to all beneficiaries. To improve this condition ASHA, Anganwadi workers and other service providers have to work hard and ensure the reach of facilities at doorstep.

It is suggested that the ASHAs and ANMs must be incentivized for counseling, home visits, immunization and preventive checks as a routine part of their job and the incentive must be paid for each home visit (even Rs. 2 to Rs.3 per visit is good enough).

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