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**Shishir Kumar**

PG 3<sup>rd</sup> Year, Department of  
Community Medicine Uttar  
Pradesh University of Medical  
Sciences, Saifai, Etawah,  
Uttar Pradesh, India

**Pankaj Kumar Jain**

Professor & Head, Department  
of Community Medicine Uttar  
Pradesh University of Medical  
Sciences, Saifai, Etawah,  
Uttar Pradesh, India

**Sandip Kumar**

Professor, Department of  
Community Medicine Uttar  
Pradesh University of Medical  
Sciences, Saifai, Etawah,  
Uttar Pradesh, India

**Corresponding Author:**

**Pankaj Kumar Jain**

Professor & Head, Department  
of Community Medicine Uttar  
Pradesh University of Medical  
Sciences, Saifai, Etawah,  
Uttar Pradesh, India

## A cross sectional study for assessment of immunization services and knowledge of vaccinator (ANM) on vaccination site (Session site) at district Etawah

**Shishir Kumar, Pankaj Kumar Jain and Sandip Kumar**

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### Abstract

**Background:** Improper coverage of the immunization facilities among various regions indicate out the need of assessing knowledge, attitude and practice (KAP) with regard to immunization among the vaccine handlers of the immunization session sites.

**Objective:** Assessing the immunization services and knowledge of the vaccinator at various immunization session sites of the district Etawah.

**Setting:** The study was conducted among Auxiliary Nurse Midwife (ANM) at vaccination (session) site of all Community Health Centers (CHCs) and Primary Health Centers (PHCs) in district Etawah. Data pertaining to the various observations of the immunization sites was collected using a semi-structured questionnaire.

**Result:** In the present study it has been observed that most of the ANMs at the immunization sites of the district of Etawah, were found to be adequately educated and trained for maintaining vaccine at the sites. Moreover, most of the immunization sites in the district were found to have proper logistics and immunization services as well as proper condition of the vaccine vials. Most of the vaccine handlers were reported to have proper knowledge on vaccination procedures.

**Conclusion:** Although most of the participants are trained once or twice but there are some specific sectors where the participants are needed to be informed and trained.

**Keywords:** Community health centers (CHCs), immunization, vaccine, primary health centers (PHCs)

### Introduction

The Universal Immunization Program begun in India in 1985, with a productive coverage as one of its essential objectives. Immunization has been considered as one of the highly successful and cost-effective process of health intervention. A few reports from the studies conducted in developing nations demonstrates that health workers appear to be overwhelmingly worried about raising coverage of vaccination. The quality of the immunization facilities has been neglected which is considered to be as equally significant for the accomplishment of the ultimate objective of disease reduction. It is found that there are limited numbers of studies that focus on vaccine management in this area context <sup>[1, 2]</sup>. Targets for Immunization coverage laid down under the Universal Immunization Program, seems to be hard to accomplish despite the full endeavour of government and voluntary organizations. Improper coverage of the immunization facilities among various regions indicate out the need of assessing knowledge, attitude and practice (KAP) with regard to immunization among the vaccine handlers of the immunization session sites <sup>[3]</sup>. The study aims to add to the existing body of knowledge on the management of vaccines from this area perspective. Thus, study focuses at assessing the immunization services and knowledge of the vaccinator at various immunization session sites of the district Etawah. The study discusses the practice of vaccine handling and management at the various immunization session sites. It is intended that the results of this study could be used to reinforce knowledge on the various immunization services at the various immunization session sites at Etawah.

**Materials & Methods**

Using the purposive sampling method, a cross sectional study was conducted at the vaccination site (session site) in district Etawah for assessment of immunization services and knowledge of vaccinator. The study was conducted among Auxiliary Nurse Midwife (ANM) at vaccination (session) site of all Community Health Centers (CHCs) and Primary Health Centers (PHCs) in district Etawah. The study was carried out from March 2018 to July 2018. The immunization process was observed across thirty-five CHCs and PHCs in the district Etawah. Data pertaining to the immunization process in the session sites were collected using a questionnaire by interviewing the ANM at the session sites. One session site was visited by the researcher from each session site.

**Data collection**

Data pertaining to the various observations of the immunization sites was collected using a semi-structured questionnaire by interviewing the ANMs at the session sites. An observational checklist was maintained and used as a study toll for the study. The study was conducted under the full consent of the participants in the immunization session sites.

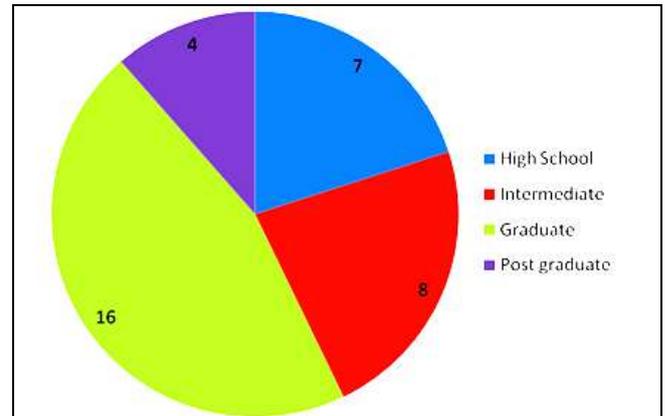
**Statistical Analysis**

The information generated from the survey and observations were entered into MS-Excel following which various statistical analyses were performed. The quantitative

variables were expressed as percentages.

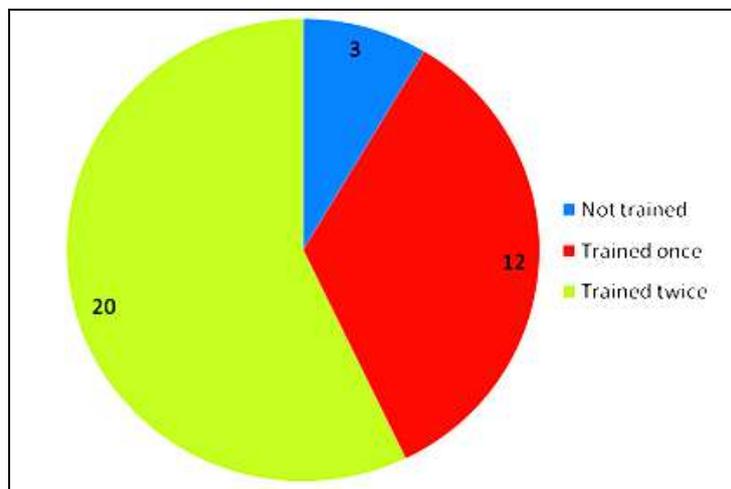
**Result**

It has been observed from the study that majority of the participants in the study were graduates. Only a few numbers of study subjects were found to have post-graduation educational qualification. fig 1



**Fig 1:** Figure representing the educational status of the participants

It has been observed from the study that majority of the participants in the study were graduates. Only a few numbers of study subjects were found to have post-graduation educational qualification.



**Fig 2:** Figure representing the training status of participants working in the immunization session sites

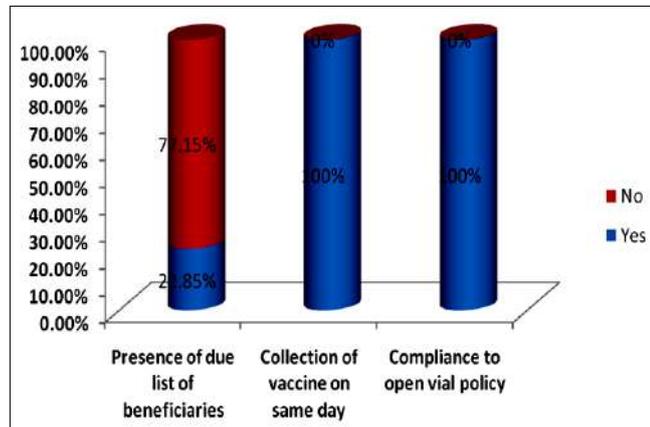
It has been observed from the study that majority of the participants working in the various immunization session sites were trained twice in the process of immunization.

Only a few participants were found not to be trained in the immunization procedures at the various immunization session sites. Fig 2

**Table 1:** Knowledge of the participants on various vaccination procedures

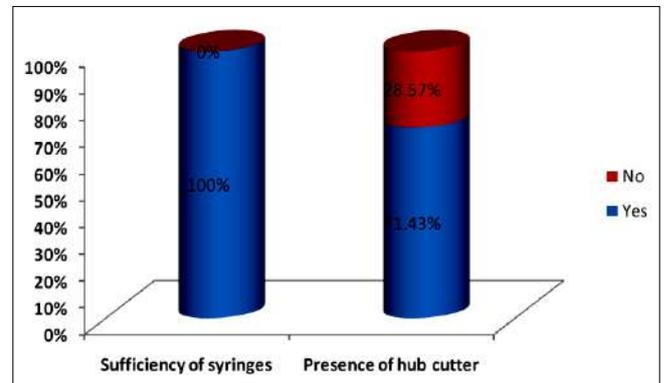
	Adequate N (%)	Inadequate N (%)
Recommended time for usage of BCG vaccine after reconstitution	34 (97.1)	1 (2.8)
Recommended time for usage of measles vaccine after reconstitution	31 (88.5)	4 (11.4)
Maximum age for administration of BCG vaccine	22 (62.8)	13 (37.1)
Maximum age for administration for OPV vaccine	30 (85.7)	5 (14.2)
Timing of birth dose of hepatitis B vaccine	32 (91.4)	3 (8.5)
Schedule for giving pentavalent vaccine	33 (94.2)	2 (5.7)
Schedule for giving vitamin A	18 (51.4)	17 (48.5)
Key messages given after immunization	26 (74.2)	9 (25.7)

While recording the knowledge of the participants on various vaccination procedures it was observed that 97.1% of the participants had the adequate knowledge of recommended time for the usage of vaccine after reconstitution. Similarly, 88.5% and 85.7% of the participants had the knowledge of the recommended time for usage of measles vaccine after reconstitution and maximum age for administration for OPV vaccine respectively. Almost half of the participants in the study (48.5%) did not have the adequate knowledge of the schedule for giving vitamin A. A large percentage of participants (37.1%) also did not have the adequate knowledge of the maximum age for the administration of BCG vaccine. Table 1



**Fig 3:** Figure representing the characteristics of immunization services in the various immunization sites.

It has been observed that only 22.85% of the total immunization sites had the due list of beneficiaries maintained in the immunization sites. Majority of the immunization sites (77.15%) did not have the due list of beneficiaries in the sites. All the immunization sites considered for the study collected the vaccine on the same day as well as they had compliance to open vial policy. Fig 3



**Fig 4:** Figure representing the logistics at immunization session sites

On observing the logistics available at the various immunization sites, it has been observed that all the immunization sites under consideration had sufficient number of syringes at the immunization sites. However only 71.43% of the total immunization sites under study had hub cutter installed at the sites. Fig 4

**Table 2:** Table representing the condition of the vaccine vials at the immunization sites

	Yes N (%)	No N (%)
Presence of opened vials post 28 days of opening	0 (0)	35 (100)
Vaccine vial monitors were intact	35 (100)	0 (0)
Time of reconstitution of vaccine was written	34 (97.14)	1 (2.86)
Reconstituted vaccines were used in recommended time	35 (100)	0 (0)
Proper diluents were used for reconstitution of vaccine	35 (100)	0 (0)
Empty vaccine vials were kept in plastic/zipper bag	27 (77.14)	8 (22.86)

The condition of the vaccine vials at the immunization sites were observed and recorded for study. Among all the immunization sites under consideration it has been observed that in all the immunization sites the vaccines vial monitors were found to be intact. The vaccines in all the immunization sites were found to be reconstituted using proper diluents and all of them were found to be used in the recommended time. It was also observed that at all the immunization sites if there were any opened vaccine vials, they were not older than 28 days of opening. Among the entire immunization sites only one immunization site was observed where the time of reconstitution of the vaccine vials was not written. Almost 22.86% of the immunization session sites were found not to have kept the empty vaccine vials in separate plastic/zipper bags. Table 2

**Discussion**

Immunization is one of the most cost effective public health interventions, which is directly or indirectly responsible to prevent the bulk of mortalities in under-fives<sup>[4]</sup>. From the study it has been observed that majority of the participants from the various immunization sites were graduates. These findings were contradictory to the one

reported by Manuel *et al.*, where it was observed that most of the study subjects were reported to have just having High school training. The investigation uncovered that, majority of the study subjects were having normal learning and inadequate information pertaining to support of vaccines for immunization<sup>[5]</sup>.

It was also observed from the study that majority of the participants working in the various immunization session sites were trained twice in the process of immunization. There were only a few untrained participants observed at the immunization sites. This indicated that majority of the ANM working at the immunization sites at Etawah district were well trained for the maintenance and effective running of the immunization sites. In a study conducted by Mallik *et al.*, the vaccine handlers were found to have improper knowledge of the vaccines, improper knowledge of maintenance etc. indicating that the vaccine handlers were not properly trained in the respective field which was contradictory to our findings<sup>[6]</sup>.

It has been found from the study that majority of the participants had the knowledge on various vaccination procedures such as recommended time for the usage of vaccine after reconstitution, the recommended time for

usage of measles vaccine after reconstitution, and maximum age for administration for OPV vaccine respectively. This may be explained as a result of the proper training of the ANM working at the various immunization session sites. However, a large number of participants in the study did not have the adequate knowledge of the schedule for giving vitamin A and the maximum age for the administration of BCG vaccine indicating that although most of the participants are trained once or twice but there are some specific sectors where the participants are needed to be informed and trained. Joshi *et al.*, in his study reported that fifty-two percent of the vaccine handlers got training in the related field twice or more while thirty-six percent of them were trained only once. About eleven percent of the vaccine handlers were found to have no training in vaccine management<sup>[7]</sup>.

While observing the characteristics of the immunization services it was observed that majority of the immunization sites did not have the due list of beneficiaries at the sites. However, all the immunization sites were found to collect the vaccines on the same day as well as they had compliance to open vial policy. The logistics available at the various immunization sites indicated that all the immunization sites had sufficient number of syringes at the immunization sites. However, a few immunization sites under study did not have hub cutter installed at the sites. On observing the condition of the vaccine vials at the immunization sites it was found that in majority of the immunization sites the condition of the vaccine vials as well as the related conditions for the maintenance of vaccines were found to be adequate and in proper condition. Our study was found to be consistent with Sinha *et al.*, where it was observed that in majority of the immunization sites the vials were marked properly with date and time of opening. It was also found that the opened vials were kept separately in plastic boxes and zipper bags<sup>[8]</sup>. A similar observation was also reported by Sreegiri *et al.*, where it was observed that in all the immunization session sites vaccine vials and diluents were kept in a plastic spread (zipper sack)<sup>[9]</sup>.

### Conclusion

In the present study it has been observed that most of the ANMs at the immunization sites of the district of Etawah, were found to be adequately educated and trained for maintaining vaccine at the sites. Moreover, most of the immunization sites in the district were found to have proper logistics and immunization services as well as proper condition of the vaccine vials. Most of the vaccine handlers were reported to have proper knowledge on vaccination procedures. However, although most of the participants are trained once or twice but there are some specific sectors where the participants are needed to be informed and trained.

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