



ASSESSMENT OF ROUTINE IMMUNIZATION IN RURAL AREAS OF ETAWAH OF THE DISTRICT OF UTTAR PRADESH

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ABSTRACT

Introduction: Vaccine-preventable infectious diseases are one of the main causes of morbidity and mortality in children that can easily be prevented by immunization. Vaccination is proven and one of the most cost-effective child survival interventions. All countries in the world have an immunization program to deliver selected vaccines to the targeted beneficiaries, especially focusing on pregnant women, infants, and children who are at a high risk of diseases preventable by vaccines.

Materials and Methods: The present cross-sectional study was conducted in rural areas of Etawah district in January 2018- August 2018. Total 90 immunization sessions were conducted. Information was gathered with the help of a pre-tested structured questionnaire.

Results: Supervision by the higher authority was only in 17.3% of session sites. Information, education, and communication (IEC) material was displayed only in 27.7% of session sites. Four key messages by auxiliary nurse midwife (ANM) were given in only 40.0% of session sites. Due list was available in 64.4% of session sites. About 23% session sites had no mobilizers. Vaccine and diluents were available in 77.8% of session sites. 88.4% sessions were conducted as per plan.

Conclusion: There was a lack of supervision and provision of health education through IEC material. There was also a lack of waste disposal measure. Activities like orientation training of ANM for waste management should be planned and repeated at regular intervals.

Keywords: Process evaluation, special immunization, session sites, vaccines, and logistics

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INTRODUCTION

Vaccines are a cost-effective method of preventing many infectious diseases. Several deaths in premature children can be prevented by immunization.¹ Vaccine-preventable infectious diseases are one of the main causes of morbidity and mortality in children that can easily prevent by immunization.² Immunization has been one of the most significant, cost-effective and stimulatory public health interventions. About one-quarter, or 25%, of under-5 mortality, is due to vaccine-preventable diseases.³ All countries in the world have an immunization program to deliver selected vaccines to the targeted beneficiaries, especially focusing on pregnant women, infants, and children who are at a high risk of diseases preventable by vaccines.⁴ The quality of vaccines is one of important factor for the success

of immunization programme which in turn depends on proper storage and handling of vaccines.⁵ In spite of lots of effort by government and other health agencies, approximately 10 million children and infants in India remain unimmunized which is the highest number of such children in the world.⁶ In 1974, WHO launched Expanded Programme on Immunization (EPI) against six most common preventable childhood diseases. The Government of India launched EPI in 1978 with the objective of reducing mortality and morbidity from vaccine-preventable diseases of childhood.⁷ It was realized that merely providing vaccine just to achieve targets without giving adequate attention to the quality of immunization services doesn't guarantee a reduction in disease morbidity & mortality.⁸

This study was undertaken to focus on inspecting actual logistics availability, vaccination techniques, and safety issues at Routine Immunization (RI) session sites of Primary Health Centres (PHC) of Etawah District.

MATERIAL AND METHODS

The present cross-sectional study was conducted in rural areas of Etawah district in Jan 2018-Aug 2018 after obtaining Ethical committee permission from ethical committee of UPUMS, Saifai.

Ninety immunization session sites were monitored during routine immunization. 90 sites were randomly selected from 27 PHCs of 8 blocks of Etawah district. At each session site auxiliary, nurse midwife/female health worker (ANM/FHW) was interviewed by pretested and predesigned performa and monitored for the vaccine administration and logistic. Data was entered and analyzed using Microsoft Excel 2010. Results were presented in the form of percentages.

RESULTS

Table 1 shows that out of 90 session sites that were monitored the list of beneficiaries was available in 64.4% sessions and mobilizers were present in 76.6% sites. ANM gave four key messages only in 40.0% sessions and Information, Education, and Communication (IEC) material was displayed only in 27.7% session sites.

Table 2 shows that the status of the vaccine administration process evaluation during immunization was found to be satisfactory. Of 90 session sites, ANM administrated the vaccines using the correct technique in 94.5%. Correct site and route of vaccination were found in 100%, an adequate dose of vaccine was found in 100% and correct age of administration was found in 95.5% session sites.

Table 3 shows status of cold chain, logistics, safety issues at session. It was found that all vaccines along with diluents were available in 77.8%, auto-disable syringes and needle were available at 95.0% and time of reconstitution was written on vial at 91.1% session sites. ANM was using hub cutter and disposed waste in proper manner only at 53.3% session sites. During monitoring, no stick injury to ANM was found.

Table 1: Status of IEC activity and infant mobilization during an immunization session

Parameters	Number N=90	Percentage
Due list of beneficiaries available	55	64.4
Mobilizer present	69	76.6
All four key messages after vaccination given by ANM	36	40.0
IEC material displayed	25	27.7

IEC: Information education communication, ANM: Auxiliary Nurse Midwife

Table 2: Status of vaccine administration process evaluation during immunization session

Parameters	Number N=90	Percentage
Correct administration technique	85	94.5
Correct site and route of administration	90	100
Correct dose of vaccine	90	100
Correct age of administration	86	95.5

Table 3: Status of cold chain, logistics, and safety issues at session site

Parameters	Number N=90	Percentage
All vaccines along with diluents available	70	77.8
AD syringes and needle available	85	95
Time of reconstitution written on the vial	82	91.1
Using hub cutter and proper disposal of waste	48	53.3
Needles prick injury to ANM	0	0

ANM: Auxiliary nurse midwife, AD: Auto disabled

DISCUSSION

For achieving high coverage of immunization and better function of the system supervision is an essential factor. Supervision by the higher authority was only in 17.3% of session site that was much lower may be due to lack of planning of supervision. IEC materials were displayed only in 27.7%, which also was poor as during vaccination we can provide information about the vaccine and important health-related issue to the attendant by IEC. Four key messages are essential for the success of immunization and must be given to the attendant of the beneficiary because without these messages attendant does not know where to come for next visit, what are the possible side effects. In the present study, we found that four key messages by ANM were giving in only 40.0% of the visited site that was unsatisfactory. In 48% of the session, hub cutter was used and the proper disposal of waste was done so there was bio waste problem.

List of the beneficiary was available in 64.4% of session site. The infant mobilization to session site reduces if we are not preparing the list of due beneficiary infants. Manjunath and Pareek in his study reported that around 9.7% of mothers lacked information about the session as on maternal knowledge and perception about routine immunization.⁹ These mothers require active mobilization. Only one or two mobilizers were present in session at 76.6% sessions and at 24.4% there were no mobilizers. Parmar et al had also found 100% presence of AWW, ASHA, and FHW at all session sites. At 92% of sites, community mobilization was done by ASHA and AWW.¹⁰ Regarding the availability of vaccine and diluents were available in 77.7% of the site. This was mainly because of the shortage of bacillus Calmette Guérin (BCG) vaccine and non-availability of a colored bag for waste disposal. In National Immunization Program review no tracking of dropouts and left outs and missing opportunities due to wastage concerns were also identified.¹¹ In cold chain and logistics at vaccine sites, vaccine vial monitor for polio and pentavalent vaccine and shake test for freeze sensitive vaccine were satisfactory. However, reconstitution time was not written on vaccine vial for almost 8.9% of the site, which is important for the prevention of toxic shock syndrome that may occur in the measles vaccine. Other vaccine safety aspects like the correct site for vaccination, dose, and age were satisfactory. The injection safety issue was also good in the district. No ANM reported needle prick injury that is because of proper training on vaccine administration. Pandit and Choudhary in his study from the same district in 2004.¹² He has reported more than 19% of annual needle stick injuries among service providers in district Anand, India. 81.6% of sessions were conducted as per plan. About 18.4% of sessions were not conducted as per micro-plan due to various reasons such as session planned in routine immunization, the session will be planned a few days back, staff deputed for training, staff on leave, and vacant post. Lack of staff and resources for service delivery has also been reported by the National Immunization Program review by WHO.¹²

CONCLUSION

In the present process evaluation study, we found that. There was a lack of supervision. There was a lack of providing health education through IEC material. There was a lack of waste disposal measure. There was a lack of mobilization of beneficiaries. The planning process and maintaining a cold chain process were good. All logistics were available except for the shortage of BCG vaccine. The cold chain was properly maintained. Vaccine administration process was good.

RECOMMENDATION

Activities like orientation training of ANM training for waste management should be planned and should be repeated at regular interval. Strengthening the cold chain systems should be done. Vacant posts of FHWs should be filled so that all sessions can be conducted. IEC material should be displayed which provide the opportunity of giving health education to the parents of the beneficiary.

REFERENCES

1. Cheriyan E. Monitoring the vaccine cold chain. *Archives of Disease in Childhood*. 1993 Nov 1;69(5):600-1.
2. Singh A, Chaudhari A, Mansuri S, Talsania N. Process evaluation of special immunization weeks in rural areas of Ahmedabad district. *International Journal of Scientific Study* 2015;3(4):111-4.
3. Lahariya C. A brief history of vaccines & vaccination in India. *The Indian journal of medical research*. 2014 Apr;139(4):491.
4. Bellamy C. *Early childhood: The state of World's children by United Nations Children's Fund*. UNICEF House, New York. 2004.
5. Sanghavi M. Assessment of routine immunization program at primary health centre level in Jamnagar district. *National J Med Res*. 2013 Oct;3(4):319-23.
6. Government of India. *Immunization Handbook for Medical Officers*. Dept. of Family Welfare. Ministry Of Health & Family Welfare. Edition 2008:15, 130
7. Park K. *Park's Textbook of Preventive and Social Medicine*. M/S Banarsidas Bhanot Publishers. 20th Edition 2009: p377

8. Patel T, Raval D, Pandit N. Process evaluation of routine immunization in rural areas of Anand District of Gujarat, Healthline, 2011; 2 (1): 17-20
9. Manjunath U, Pareek RP. Maternal knowledge and perceptions about the routine immunization programme--a study in a semiurban area in Rajasthan. Indian Journal of Medical Sciences. 2003;57(4):158-63.
10. Parmar A, Parmar N, Pandya C, et al. Process evaluation of routine immunization (RI) and growth monitoring services during mamta day (village health and nutrition day) in Sinor block of Vadodara district, Gujarat, India, National Journal of Community Medicine, 2014; 5 (4): 378-382
11. World Health Organization. National Immunization Programme Review – India; 2004
12. Pandit NB, Choudhary SK. Unsafe injection practices in Gujarat, India. Singapore Medical Journal 2008; 1;49(11):936.

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