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Assessment of cold chain at outreach session of routine immunization in Jamnagar district of Gujarat

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Abstract

Routine Immunization is one of the most cost effective public health interventions and was first introduced in India in 1978. Yet, despite the concerted efforts of the government and other health agencies, a large proportion of venerable infants and children in India remain unimmunized particularly in rural areas. The present study was conducted to assess outreach session of routine immunization in rural area of study district. Total 20 immunization sessions were observed. At majority of session sites planning of immunization sessions, cold chain maintenance, alternate vaccine delivery mechanism was satisfactory. Out of 20, 10% sessions were not conducted against planned on the date of visit. Time of reconstitution was mentioned on BCG vials and Measles vaccine vial at all sessions. Refreshing training of ANM, regular supervision and effective review meetings should be conducted. Supervisory supervision should be used as corrective measure and rechecking of facility at interval for correction.

Keywords: Cold chain, outreach session, supervision

Introduction

Immunization is one of the most well-known and effective methods of preventing childhood diseases. With the implementation of Universal Immunization Programme (UIP), significant achievements have been made in preventing and controlling the Vaccine Preventable Diseases (VPDs). Immunization has to be sustained as a high priority to further reduce the incidence of all VPDs, control measles, eliminate tetanus and eradicate poliomyelitis^[1]. Outreach sessions are organized mainly for rural and urban slum areas. The frequency varies from place to place, twice a week to twice a month or even once a month. In some centres sessions are carried out according to fixed plans. The criteria for organizing outreach sessions in an area include number of beneficiaries, low socio economic status, poor access to health facility, and low immunization coverage. The venues for immunization are Anganwadi Centres, schools, local libraries, temples, homes of volunteers or a common place and even tree shades in villages. Immunization outreach session site is most vulnerable point of cold chain^[2]. For this reason present study was conducted to assess the status of cold chain system at field site sessions of PHCs.

Material and methodology

A cross sectional study was undertaken during January-march 2015 in rural area of the study district. Study district have ten talukas. Study units were taken according to Multistage sampling method^[3]. One Primary Health Centre (PHC) from each taluka two Sub-centres (SCs) (one good performing and one poor performing) from the selected PHC were taken. Thus, total 20 centres (twenty SCs) were identified for the study. Pretested questionnaires regarding cold chain and vaccine management, supervision were filled up by personal observation of session site. Data entry and analysis done in Microsoft excel 2010.

The ethical approval from the Institutional Ethical Committee was obtained before conducting the study.

Results

Total 20 sessions were observed. Out of which 10% sessions were not conducted against

planned on the date of visit and 80% sessions were held at Anganwadi. Majority of session sites (90%) displayed IEC materials.

Table 1: Condition of vaccines in observed outreach sessions

	n=20	
	Yes	%
All vaccines & diluents inside the intact zip pouch	17	85%
Any vaccine with VVM status 3 or 4	0	0%
Any vaccine with expiry date	0	0%
Vials taken according to due list of beneficiary for out sessions	14	70%

At majority of the outreach sessions, vaccines and diluents were brought inside intact zip pouch (85%). None of the session site had all vaccines and diluents were wrapped in paper before putting in zip pouch, None of the outreach sessions had any vaccine with VVM status 3 or 4 and at expiry date. At 14 session site (70%), Vials were taken according to due list of beneficiary for out sessions.

At more than half of the outreach sessions (60%) hard frozen ice packs were found It was observed that reconstitution of the vaccine (BCG and Measles) was done according to requirement at all the outreach sessions. Alternate Vaccine Delivery system were there for distribution of vaccine at all session.

Table 2: Condition of Vaccine carrier in outreach session

	n=20	
	Yes	%
Cleanliness of vaccine carrier	20	100%
Any visible cracks in vaccine carrier	5	25%
Proper lid closed without any visible gap	17	85%
Covered with belts properly	17	85%

Cleanliness of vaccine carrier was good at all visited outreach sessions. Visible cracks in vaccine carrier were present in 25% of sessions. Lid were found to be properly closed without any visible gap at 17 sessions(i.e.85%) belt over the lid was fastened on 85% of vaccine carriers at session site.

Table 3: External and internal supervision of outreach session

Supervision	n=20	
	Yes	%
Supervision by MO/HV	17	85%
External supervision*	12	60%

*External supervision by THO/BHO, RCHO, SMO, CDHO or WHO monitor

Table 3 shows in last month almost same proportion i.e. 85% outreach sessions were supervised by MO or HV. While external supervision was done at 60% of outreach sessions in last month.

Discussion

There were 20 Outreach session of routine immunization observed at field site.90% sessions were held as per plan schedule and displayed IEC material at session site. In similar type of study Dr. Sonal dindol *et al.* [5] Out of which 26.66% sessions were not conducted against planned on the date of visit. More than half i.e. 53.3% sessions were held at Anganwadi. At 90% session sites IEC materials were displayed. According to guideline outreach session is always

held according to micro plan even in case of ANM on leave. IEC material has also important tool for the identification of session.

At majority of the outreach sessions, vaccines and diluents were brought inside intact zip pouch (i.e.85%). Vaccines and diluents were wrapped in thick paper before putting in vaccine carrier. None of the outreach sessions areas had any vaccine with VVM status 3 or 4 and with expiry date. Number of vials brought to outreach sessions were according to due list of beneficiaries at more than two third of places visited. It was observed that reconstitution of the vaccine was done according to requirement at all the outreach sessions. At all outreach sessions, time of reconstitution of vaccine was noted on vials. In a study conducted by Makwana NR *et al.* [5] 87.3% session sites all the vaccines were within expiry date and at 57% session sites time of reconstitution were written on BCG and measles vaccine vials.

Cleanliness of vaccine carrier was good at all visited outreach sessions. Visible cracks were present in 25% vaccine carrier. Lid of vaccine carrier were found to be properly closed without any visible gap at 85% of sessions but belt over the lid was fastened on 85% of vaccine carriers sessions.

Most of the outreach session were supervised by MO/HV that included 85% of the outreach sessions, while two third of total sessions were supervised by external supervisor in last month session (table 3). In similar study by Dr. Kapil J. Govani [6] found that out of 56 urban outreach sessions, 94.6% sessions had supervision by MO and 64.3% sessions had external cross checking in last month which differed from our study. For quality maintenance of outreach session, supportive supervision become major contributor.

Conclusion

This study reveals Alternate vaccine delivery mechanism and cold chain maintenance at session site was quite good. Refreshing training of ANM, regular supervision and effective should conducted. Supervision should be supportive and supervisory visits can be used as an opportunity to improve the knowledge and skills of health staff.

Recommendations

Proper conditioning of icepacks must be done before putting them into vaccine carrier for outreach session of immunization. Vaccine vials and ampoules were wrapped in thick paper before putting in polythene bag/ zip pouch to prevent them from touching the icepacks. To prevent wastage of the vaccine, due list of the beneficiaries should be prepared and vial should be procured accordingly. Lid of the vaccine carrier should be kept properly closed. There should be regular supportive supervision of outreach session by Medical officer/ Health visitor/ External supervisor.

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