Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2016; 4(9A):3208-3212 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjams.2016.v04i09.005

Original Research Article

Assessment of Facilities for Routine Immunization at Urban Health Centres of Rajkot city, Gujarat, India, November 2014

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Abstract: 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. The World Health Organization launched the Expanded Program on Immunization (EPI) in 1974 globally with focus on prevention of the six childhood vaccine-preventable diseases by the year 2000. Present study was conducted to assess the Routine Immunization (RI) facilities at Urban Health Centres (UHCs). Objectives of this study to assess availability of manpower, logistics, training status of Medical Officers and status of cold chain for RI at UHCs. A facility based cross sectional study carried out in all 18 UHCs of Rajkot Municipal Corporation in November 2014. They were evaluated as per Govt. prescribed RI check list. Out of total 17 MOs, 70.6% had received training on RI within 1 year. Out of total sanctioned ANM posts, only 65.8% were filled. 83.3% UHCs had updated RI micro plan. 50% UHCs had map of catchment area. Only 5.6% UHCs had made RI coverage chart but not displayed. 77.8% UHCs had fixed and trained cold chain handler. Cold chain equipments were available at all places. Updated micro plan were not available at all places.
Keywords: Routine Immunization, Training, Micro plan, cold chain, manpower, Urban Health Centre

INTRODUCTION

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[1]. The World Health Organization launched the Expanded Program on Immunization (EPI) in 1974 globally with focus on prevention of the six childhood vaccine-preventable diseases by the year 2000[2]. Immunization Program in India was introduced in 1978 as Expanded Program of Immunization. This gained momentum in 1985 as Universal Immunization Program (UIP) and implemented in phased manner to cover all districts in the country by 1989-90[3].

In spite of lots of effort by government and other health agencies, approximately 10 million children and infants in India remain unimmunized which is highest number of such children in the world[4]. While Full immunization coverage rate was 54.8% (all doses up to age of one year) in Gujarat according to DLHS 3 survey (2007-08)[5] and in Rajkot city coverage rate was 68.2%[6]. It was realized that merely providing vaccine just to achieve targets without giving adequate attention to quality of immunization services doesn't guarantee a reduction in disease morbidity & mortality.

Urban Health Centre (UHC) is a key place for implementing routine immunization program and storing of vaccines. Failure to maintain cold chain practices results in loss of vaccine potency[7,8]. Problems related to cold chain functioning and handling both in government and private sector have been reported from developed and developing countries alike[9-19]. Present study was conducted to assess the RI facilities at Urban Health Centres (UHCs). Objectives of the study were to assess the training status of medical officers, status of cold chain and availability of logistics and manpower for Routine Immunization at UHCs.

MATERIALS & METHODS

There are 18 UHCs in Rajkot city. RI activities conducted in every UHC regularly. 50 ANMs working in all these UHCs are vaccinating children in various field areas of Rajkot city. All the 18 Urban Health Centres, Rajkot Municipal Corporation, Rajkot were assessed for "RI" by Community Medicine Department, P.D.U. Govt. Medical College, Rajkot. This evaluation was carried out in nine working days during 18/11/2014 to 27/11/2014. Everyday two Urban Health Centres were visited for detail assessment.

Assessment team consisted of one resident doctors and one faculty member of community medicine department. Standard Performa recommended by Govt. of India for Facility level assessment for Routine Immunization was used for assessment. This Performa contains various indicators for monitoring the activities of the RI. It includes the availability of manpower, all essential logistics, their maintenance and also monitoring regarding any Vaccine Preventable Diseases and Adverse Effect Following Immunization. The data entry was done in Microsoft Office Excel 2007 and analysis was done using the same software.

RESULTS AND DISCUSSION

The present study was conducted among total 18 UHCs of Rajkot Municipal Corporation, Rajkot during Year 2014.

Table 1 shows that out of total 18 sanctioned posts of MOs, 01 (5.55%) post was not filled. Out of total 76 sanctioned posts of Auxiliary Nurse Midwives (ANMs), 50(65.79%) were filled. There were only 9 posts of Health visitor (HV) sanctioned and of these only 6 were filled. HV and ANM is the key person for Routine Immunization operations. Out of 17(100 %) MOs, 12(70.58%) had taken training of RI within last one year, but 2(11.76%) MOs had never taken any training on RI.

Table 2 revealed that 15(83.33%) out of 18 UHCs had updated RI micro plan available**.** Out of total 18 UHCs, 13(72.22%) UHCs had ANM Roster, 9(50.00%) had map of catchment area. However, only 7(38.88 %) UHCs found to have supervision plan and only 5(27.77%) had Communication/Mobilization plan. This table shows that as high as 94.44% UHCs had not made RI Coverage Chart and not a single UHC displayed the Chart. NIHFW study in various states of India in 2009 observed poor results regarding planning as compared to present study i.e. map of catchment area was not available in 61% of PHCs as compared to 50% in present study, 4% PHCs displayed coverage monitoring charts as compared to the present study in which no any UHCs has displayed chart[22]. Plan for supervision was available in 39% of UHCs in the present study. While Patel T et al study in Anand district, Gujarat observed that plan for supervision available in only 6.8% of the PHCs[23].

Table 3 showed that most of the cold chain equipments were available in all the 18(100%) UHCs except stand for ILR which was not available in 02 UHCs and stabilizer for connecting DF to power were not present in 01 UHC. Geetu Singh et al in Sitapur district of Uttar Pradesh observed 8% did not have functional stabilizer.[24] The GOI protocol [17,18] also recommended that ice-lined refrigerators and deep freezers be supported on wooden blocks and be located at least 10 centimetres away from walls. The present study observed these as 89% and 100% respectively. It was recommended[17,18] that ice-lined refrigerators, deep freezers and refrigerators would maintain a temperature of 2° to 8° C and a temperature maintenance chart. In present study, observed that 100% of the organizations maintained temperature chart, 100% recorded temperature twice and 100% maintained temperature in optimal range.

Handbook on Immunization guidelines [17] by the government of India also recommended that each equipment should be connected to voltage stabilizer with permanently secure plug and socket. Aggarwal et al [9] reported a number of shortcomings concerning the cold chain such as power failures and improper and inadequate maintenance of cold chain equipment. Defective stabilizers and electricity plugs and sockets were the reason of breakdown in many cases as reported in Haryana [20]. Among 18 UHCs, the maintenance of cold chain was appropriate in almost all aspects. But, Icepacks were correctly placed in DF in only 07(38.88%) UHCs. It was observed that 4(22.22%) UHCs had non functional generators and only 1(5.55%) UHC had functional generator. Samant Y et al [21] showed that generator facility was there in 65% of PHCs .The potency of vaccines depends on maintaining the cold chain-that is, a prescribed temperature range of 2-8°C during transport and storage[20]. Bachani et al [19] reported a shortage of temperature maintenance equipment. Unlike Ethiopia [15], UK [11] and Australia [14], the present study observed one designated worker as cold chain handler in 83% of organizations and trained in 77% of organizations.

Table 4 revealed that All UHCs had adequate availability of vaccines for next one week. It was observed that all the logistics were observed to be in adequate quantity for next one week in all 18 UHCs. All drugs were available in all UHCs as per requirement shown in RI Checklist except Zinc tablet, which was not available in any of the UHCs.

Table-1 Status of sanctioned and filled posts in UHCs

Sanctioned Posts fully filled	No. of sanctioned posts	No. of filled posts	Percentage of filled post
MOs	18	17	94.44
HV	09	06	66.67
ANM	76	50	65.79
AWW	294	280	95.24
Urban ASHA	280	261	93.21

Table-2 Availability of updated RI Micro plan and its components in UHCs

Availability of updated RI micro plan	No. of UHC	Percentage
Available	15	83.33
Not available	03	16.66
Total	18	100.00
RI components	**No. of UHC**	**Percentage**
ANM roster	13	72.22
Map of catchment area	09	50.00
Beneficiary/Injection load	14	77.77
Supervision plan	07	38.88
Communication/Mobilization plan	05	27.77
RI Coverage Chart	**No. of UHC**	**Percentage**
Chart made & displayed	00	00.00
Chart made but not displayed	01	05.55
Chart not made	17	94.44
Total	18	100.00

Table-3 Availability of logistics and their maintenance at UHCs

Cold chain equipments	No. of UHCs	Percentage
Vaccine and logistics stock register available	18	100.00
ILR in working condition	18	100.00
Working thermometer inside ILR	18	100.00
Stabilizer(ILR) present	18	100.00
Stand of ILR present	16	88.88
Deep freezer (DF) in working condition	18	100.00
Working thermometer inside DF	18	100.00
Stabilizer(DF) present	17	94.44
Stand for Deep Freezer present	18	100.00
Cold chain Maintenance	**No. of UHCs**	**Percentage**
All available vaccines stored inside ILR	18	100.00
Temperature inside ILR between 2 to 8 degree c	18	100.00
No Frozen vaccines inside ILR	18	100.00
Temperature log books maintained and updated	18	100.00
Other medicines stored inside ILR	00	00.00
Ice packs correctly placed inside DF	07	38.88
Availability of generators	**No. of UHCs**	**Percentage**
Available	01	05.55
Not available	13	72.22
Available but not functional	04	22.22
Total	18	100.00

Table-4 Availability of vaccines and their logistics at UHCs

Vaccines- diluents available	No. of UHCs	Percentage
BCG	18	100.00
BCG diluents	18	100.00
Measles	18	100.00
Measles diluents	18	100.00
tOPV	18	100.00
Hepatitis B	18	100.00
DPT	18	100.00
TT	18	100.00
Pentavalent	18	100.00
Logistics availability	**No. of UHCs**	**Percentage**
AD (0.1 ml) syringes	18	100.00
AD (0.5 ml) syringes	18	100.00
5 ml reconstitution syringes	18	100.00
Blank RI cards (Mamta Card)	18	100.00
Red & black bag	18	100.00
Plastic spoon/cap for vitamin-A	18	100.00
Adequate vaccine carriers	18	100.00
Cold box(5-10 litre)	18	100.00
BP apparatus	18	100.00
Functional Hub cutter	18	100.00
Drugs	**No. of UHCs**	**Percentage**
ORS packets	18	100.00
Paracetamol	18	100.00
Vitamin A solution	18	100.00
Zinc tablets	00	00.00
IFA tablets	18	100.00

CONCLUSION

Approximately 1/3 posts of ANM were not filled. Two MOs had never received training on. Updated micro plan was not available in all UHCs. Components of RI micro plan like, supervision plan and communication/mobilization plan available in few UHCs. Coverage chart was not made in almost all UHCs. Cold chain maintenance was satisfactory at all UHCs. Vaccines, drugs and logistics stocks were adequate except zinc tablets which was not available at any of the UHCs. Reorientation of MO, ANM, and pharmacist regarding immunization should be conducted once every year. The sanctioned posts at various UHCs should be filled completely especially ANM and HV. Routine immunization coverage chart should be prepared and displayed at every UHC. Cold chain handler should be fixed and trained at every UHC. Zinc tablets should be made available at every UHC.

ACKNOWLEDGEMENT

Authors would like to acknowledge all staff members of UHCs and Rajkot Municipal Corporation, , Rajkot for their cooperation and support the during study.

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