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Short communication

Daily immunization services: A moral duty, not an empty slogan

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ABSTRACT

Background: Immunization services in Armed Forces hospitals are provided once or twice a week leading to children missing important vaccines. Vaccines offered are restricted to vaccines provided under the Universal Immunization Programme (UIP). This system is inadequate to meet the challenge of providing 100% immunization to children in a station. Two large service hospitals were selected for provision of daily immunizations under the 'CHOICE' banner (Comprehensive child Healthcare, OPD services and Immunization Clinic Everyday), which was conducted under the supervision of the Pediatrician. The immunization delivery before and after institution of the daily immunization program was compared.

Method: This retrospective study compares the vaccine delivery rate of two systems, namely a restricted approach providing UIP vaccines on a weekly basis and a comprehensive approach providing both UIP as well as optional vaccines on a daily basis.

Results: There was a significant increase in attendance at the immunization clinic, which was progressive over the years with the comprehensive approach. The delivery rates of all vaccines increased, in particular the combination vaccines. The workload per immunization session showed a concomitant decrease.

Conclusion: Daily immunization is a better method of vaccine delivery to children, leading to a marked increase in attendance at the immunization clinic and utilization of hospital services.

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Introduction

Immunization in the Armed Forces is generally conducted through the Family Welfare Centers, usually on fixed days of the week. Most service hospitals run immunization clinics once a week under the aegis of the health section of the hospital. Usually, only the vaccines under Universal

Immunization Programme (UIP) i.e. BCG, OPV, DPT and Measles are administered and parents are given advice on the other optional vaccines available in the market. Besides the tremendous rush of children and their attendants on that particular day, this practice often results in a considerable amount of inconvenience to the patients especially when the day fixed for immunization is a gazetted holiday or the

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Table 1 – Number of doses administered of vaccines provided free of cost in Hospital A (figures in parenthesis indicate percentage change from 2002).

Year/Vaccine coverage	01 Jan 2002–31 Dec 2002 (weekly immunization)	After daily immunization		
		2003 (01 Jan–31 Dec)	2004 (01 Jan–31 Dec)	2005 (01 Jan–31 Dec)
BCG	1320	1560 (18.18)	2708 (105.15)	2107 (59.62)
Hep-B	1080	1968 (82.22)	3172 (193.7)	5241 (385.27)
OPV	3840	5376 (40)	9868 (156.97)	11,876 (209.27)
DPT	4032	4632 (14.88)	6412 (59.02)	7514 (86.35)
Measles	1152	1212 (5.2)	1832 (59.02)	1915 (66.23)
MMR	264	696 (163.63)	1296 (390.90)	1339 (407.19)
Total	11,686	15,444 (32.16)	25,288 (116.39)	29,992 (156.64)

caretakers of the child are unable to bring the child for immunization due to other commitments. This results in a number of children missing the dose, thereby defeating the very purpose of the immunization program. Additionally, because of the big crowd, adequate attention to the child's health status cannot be provided and the whole exercise is reduced to just another chore.

Administering immunization on once a week fixed day basis has the disadvantage of missing a large number of children who are sent back due to non-availability of vaccine services on the day they attend the hospital for some other reason. We felt that the present system of providing limited vaccines on a weekly basis was highly inadequate, leading to missed opportunities for immunization, dissatisfaction and loss of clientele and lack of sufficient supervision due to the large number of babies being handled on a particular day.

Keeping this in mind, two large service hospitals were selected for a revision of the present immunization practice and the "Daily Immunization Clinic" was launched, under the CHOICE (Comprehensive child Healthcare, OPD services and Immunization Clinic Everyday) banner. Availability of all vaccines (including the 'optional' ones), under the guidance of the Pediatrician was ensured along with additional facility of sick and well baby care and health education of parents. The present study reviews certain aspects of the results of these changes, namely attendance at the immunization clinic, workload and vaccine delivery rate.

Material and methods

This was a hospital based, retrospective study carried out in two large service hospitals (Hospital A and B). The study

period was divided into two parts, pre and post implementation of 'CHOICE'. Data collected in both these periods were compared. The daily immunization clinic was run under the direct supervision of the Pediatrician posted to the hospital and was held in close proximity to the Pediatric OPD, which provided outpatient services to children under the 'CHOICE' banner. All vaccines including optional ones (Chicken Pox, Hepatitis A, Typhoid, Haemophilus Influenza vaccine, Acellular DPT, Combination vaccines etc) were offered. While in Hospital B all the UIP vaccines were provided free of cost, in Hospital A, additionally, MMR and Hepatitis B were provided free of cost. The optional vaccines were made available by a hospital approved vaccine dealer at subsidized rates on the prescription of the Pediatrician. In addition, well baby services were incorporated in the immunization clinic to assess growth & development of the child.

A standard, pre tested format for collection of data was used. This assessed the number of children attending the Immunization OPD during the study period in addition to the number of vaccine doses used.

Results

In Hospital A, immunization clinic was conducted on a weekly basis upto 31 Dec 2002 under which only government supplied vaccines were provided. From 01 Jan 2003, the immunization time table was changed to a daily schedule. Over 3 years, after introduction of 'CHOICE', there was a threefold increase in immunization clinic attendance. The increment of vaccine doses was progressive over 3 years, being 32% 116% and 156% respectively in the years 2003, 2004 & 2005. During the same period the average attendance per day at the immunization

Table 2 – Number of doses administered of optional vaccines in Hospital A (figures in parenthesis indicate percentage change from 2002).

Year/Vaccine coverage	01 Jan 2002–31 Dec 2002 (weekly immunization)	After daily immunization		
		2003 (01 Jan–31 Dec)	2004 (01 Jan–31 Dec)	2005 (01 Jan–31 Dec)
Hepatitis B	1080	1968 (82.22)	3172 (193.7)	5241 (385.27)
Hib	96	876 (812.5)	1088 (1033.33)	1598 (1564.58)
Chicken pox	12	76 (533.34)	110 (816.67)	139 (1058.34)
Hepatitis A	12	156 (1200)	172 (1333.34)	103 (758.34)
Typhoid	108	186 (72.22)	236 (118.51)	338 (212.96)
Combination Vaccines	24	588 (2350)	736 (2966.67)	1003 (4079.17)
Total	1332	3850 (189.03)	5514 (313.96)	8422 (532.28)

clinic fell from 101 in 2002 to 54.72 in 2005 when the clinic was run six times a week. The delivery rates of routine UIP (Table 1) and optional vaccines during the study period are shown in Table 2 & Fig. 1.

In Hospital B, the immunization schedule upto 31 Mar 2006 was once a week on Saturdays. From 01 Apr 2006, 'CHOICE' was introduced. There was a 34–78% increase in the various UIP vaccine coverage over a period of 1 year. There was a concomitant decrease of approximately 47% in the average attendance per immunization clinic between 2005 and 2007 when the clinic was run six times a week. Table 3 shows the increase in the administration of vaccines supplied under UIP to the patients. There was a substantial utilization of the optional vaccines in the first year of their introduction in Hospital B as depicted in Table 4.

Discussion

The National Immunization Programme has achieved only partial success against six killer diseases and the immunization umbrella having failed to cover all children. Coverage of UIP vaccines shows a progressive decline with vaccines administered in infancy and childhood as many as 18 million children did not receive any coverage in India in 2001–2002.^{1,2} Various reasons have been put forward to explain this gap between conception and implementation i.e. ignorance,³ inconvenience,⁴ lack of motivation,⁵ geographical isolation and availability of health infrastructure.⁶ The limited success in achieving full immunization coverage has necessitated the search of ways to expand coverage effectively.

We observed that providing immunization services on all working days of the week resulted in an increase of 3-fold in the immunization coverage in the two hospitals studied. The increase was most marked with combination vaccines. With the level of awareness amongst the clientele increasing due to information from the media, there is a demand from the parents for provision of optional vaccines and combination vaccines.

The workload on each immunization session decreased 38–75%, due to its being spread over the week. Availability of the Pediatrician in the vicinity of the immunization clinic by

Fig. 1 – Number of doses administered of optional vaccines in Hospital A (figures in parenthesis indicate percentage change from 2002).

Table 3 – Number of doses administered of UIP vaccines in Hospital B (figures in parenthesis indicate percentage increase).

Year/Vaccine coverage	01 Apr 05–31 Mar 06 (weekly immunization)	01 Apr 06–31 Mar 07 (daily immunization)
BCG	1795	2415 (34.54)
OPV	3662	5396 (47.35)
DPT	2027	3363 (65.91)
Measles	432	770 (78.24)

its incorporation with the OPD services also facilitated the supervision of vaccination. It also gave an opportunity for a comprehensive checkup of the child for growth & development and a platform for provision of health messages.

While the increase in immunization delivery is heartening, it also highlights a glaring issue; as there was no marked increase in the target population, we presume that approximately 10,000 children in Hospital A and approximately 4500 children in Hospital B, were being missed every year during the initial schedule of immunization. This fact alone reflects the alarming inadequacy of the present immunization schedule followed in most service hospitals.

Over the past few years, multinational pharmaceuticals have generated attention towards optional and combination vaccines e.g. those against hepatitis A, Haemophilus influenzae B, chicken pox and so on and their use has been accepted by the Indian Academy of Pediatrics in selected circumstances under the guidance of a Pediatrician. The decision to provide optional vaccines through 'CHOICE', using a 'single window' or 'cafeteria' approach was taken after noting that many parents insisted on combination/optional vaccines. Their non-availability in the Service Hospital earlier resulted in the child being immunized in a civil setup ("if you don't give it, somebody else will"), leading to loss of clientele satisfaction and the risk of the child receiving non-standardized vaccines or schedule. Also once the child is taken to the private practitioner, the health providers in services virtually 'lose' the clientele & the parents end up paying unnecessarily for their baby's healthcare. The optional vaccines, provided by the dealer at institutional rates, were cheaper than the retail rates (e.g. a particular vaccine being retailed at Rs 1450.00 was given to the patient at a cost of Rs 950.00). As the financial transactions were carried out directly between the vaccine dealer

Table 4 – Number of doses administered of optional vaccines in Hospital B.

Year/Vaccine coverage	01 Apr 05–31 Mar 06 (weekly immunization)	01 Apr 06–31 Mar 07 (daily immunization)
Hep-B	—	966
Hib	—	329
Chicken pox	—	153
Hepatitis A	—	105
Typhoid	—	227
Combination vaccines	—	405

and parent, the fear of potential for financial irregularities was unfounded.

It is felt that the time has come for health service planners to look into this important aspect of healthcare delivery. Immunization and well baby services are among the most important preventive services that can bring down infant mortality. The formulation of a uniform policy on immunization, incorporating the provision of daily immunization services, optional vaccines on payment, health education and well and sick baby care, (coined by us as 'CHOICE' (*Comprehensive child Healthcare, OPD services and Immunization Clinic Everyday*)) requires a proactive attitude of the administrators and pediatricians in service hospitals.

In hospitals where a Pediatrician is not posted, the daily immunization services may be provided by the Station Health Officer and in his absence, by the Health Section of the hospital, supervised by a Medical Officer.

Key messages

- a) Provision of CHOICE (*Comprehensive child Healthcare, OPD services and Immunization Clinic Everyday*) is no longer an empty slogan or jargon for popularity. It is the need of the hour & an essential moral duty on part of the providers of healthcare to the children.
- b) It is necessary to move with the times and accept the importance of adopting an 'umbrella or cafeteria approach' and provide all vaccines including the optional vaccines on the advice of the Pediatrician.

- c) Involvement of the Pediatrician in the conduct of the immunization clinic is vital as it comprehensively incorporates well and sick baby care, health education and immunization services.

Conflicts of interest

All authors have none to declare.

REFERENCES

1. Chhabra P, Nair P, Gupta A, Sandhir M, Kannan AT. Immunization in urbanized villages of Delhi. *Indian J Pediatr.* 2007;74:131–134.
2. WHO India. *Universal Immunization Program National Review Report*. Available from: http://www.whoindia.org/EN/Section6/Section284/Section286_507.htm; 2004. Accessed 01.04.07.
3. Yadav RJ, Singh P. Immunization status of children and mothers in the state of Madhya Pradesh. *Indian J Community Med.* 2004;29:147–148.
4. Yadav S, Mangal S, Padhiyar N, Mehta JP, Yadav BS. Evaluation of immunization coverage in urban slums of Jamnagar city. *Indian J Community Med.* 2006;31(4):10–12.
5. Singh P, Yadav RJ. Immunization status of children in India. *Indian Pediatr.* 2000;37:1194–1199.
6. Datar A, Mukherji A, Sood N. Health infrastructure & immunization coverage in rural India. *Indian J Med Res.* 2007;125:31–42.