

MASS D.P.T. VACCINATION IN AN URBAN COMMUNITY*

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The list of diseases against which immunization procedures are available is already impressive. However, in developing countries, like India, the difficulty lies in putting this knowledge into practice. To make people realize the importance of these procedures to ensure their active cooperation is a difficult task, because of factors such as ignorance, illiteracy, lack of health-consciousness, religious and social prejudices, etc. The task is extremely difficult in rural areas, but even in urban areas it is not easy. Mass immunization programmes provide an opportunity for studying factors related to participation or otherwise in such a programme.

A mass D.P.T. (diphtheria-pertussis-tetanus) vaccination programme was undertaken in Aurangabad in June, 1966. The experience gained is reported as it is believed that not only will it provide help for further work in this area but it may also prove useful for planning similar programmes in other urban communities:

Background Information

Aurangabad city has a population of 87,579 (Census, 1961). A large

number of cases of diphtheria, whooping cough and tetanus are seen and treated in the Medical College Hospital. Incidence rates have not been calculated since grossly inadequate reporting generally makes the figures misleading. There is no reason to believe, however, that these diseases are less common in this urban area than in similar areas elsewhere in India. A scheme to carry out mass DPT vaccination for children, 3 months to 5 years of age, was drawn up. It was implemented through the cooperative efforts of our Department, the Municipality and Urban Community Development project staff.

It was felt that initially the programme should be started on a limited scale and subsequently on the basis of experience gained, other parts of the city would be covered. The scheme covered Begumpura and Jaisingpura areas which form a compact unit at one corner of the city.

To make people aware of the programme, various ways of reaching them were used. Articles were published in the local newspapers. These pointed out the dangers of common infectious diseases and their effect upon child health. It was stressed that the diseases can be prevented by D.P.T. injections. The achievement of some Western countries in controlling these diseases through such methods

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was mentioned to arouse the people's sense of effort by emulation. Slides were exhibited in the local cinemas for a few days in advance. Appropriate posters were displayed in the area at prominent places. Handouts giving the relevant information were distributed. The programme was discussed with the school-teachers in the area and they were requested to convey the message to children and their parents. Information regarding the centres, dates and timings was published repeatedly.

Personal contact was established with the parents by one of us (M.J.J.), social workers and staff of the municipality by house-to-house visits. Visits were made early in the morning in order to contact the fathers also before they went out to work. The importance of getting protection for the children by participation in the programme was urged. Only households with children were contacted. Questions raised by the parents were answered. Parents were informed regarding vaccination centres and timings. Information was collected from these households as per questionnaire. Pre-testing of this questionnaire was thought unnecessary as only simple, factual information was collected. These visitors could not cover all the households up to the day of vaccination, as the persons available for this purpose fell short of expectation. Announcements regarding vaccination work were made in the area on the day of vaccination by loudspeakers.

The injections were given on a Saturday afternoon and Sunday morning—timings thought most suitable for parents. Three centres were located at convenient places in the area. Participating parents were requested to send their friends and neighbours with children. At one centre located in a

portion of the township where house-visiting was deficient, immediate visits were made and the children brought to the vaccination centre. Information regarding these households was also collected.

Observations

Information collected from 409 households was analysed and is presented. The population covered may be called a sample-population. Table 1 shows its distribution with reference to religion.

Table 1. *Distribution of sample and general population according to religion.*

Religion	Sample %	General %
Hindu	66.5	51
Muslim	23.7	38
Buddhist	9.8	7
	100	100

Table 2 shows the distribution of the households of the sample and general population according to the educational level of the parents.

Table 2. *Distribution of sample and general population by educational level of parents.*

Education level	Mother		Father	
	Sample %	General %	Sample %	General %
Illiterate	74.33	74.69	33.25	47.35
Literate without educational level	11.00	13.40	23.97	20.04
Primary	8.80	10.38	19.32	23.58
Matriculation or higher secondary	5.14	1.31	19.06	7.04
Beyond matriculation	0.73	0.22	4.40	1.99

Table 3 shows the distribution of the sample and general households according to family size.

Table 3. *Distribution of sample and general population by family size.*

Size of household	Sample %	General %
Single	0	11.23
2—3 members	7.8	23.93
4—6 members	47.9	38.20
7—9 members	28.4	18.77
10 or more members	15.9	7.87
	100	100

Table 4 shows the immunizational status of the children brought for vaccination. Except for one child (who had been given 2 injections of D.P.T. earlier) no one had received this inoculation before.

Table 4. *Immunizational status of participating children.*

Immunization	Per cent protected
Smallpox vaccination	96.1%
B. C. G. vaccination	2.4%
Polio vaccination	1.0%
D. P. T.	See text

In the programme the first injection was given to 462 children. It was found that of these the majority (about 85%) had been covered by house-to-house visits. Only about 15% were brought by the parents on their own accord. The number of households

visited from where children did not report for injections, is not known.

The second injection scheduled to be given four weeks later had to be postponed by a week because of unusual and incessant raining. Announcements were made regarding this change. 348 children were given injections, of which 68 had come for the first time. 280 received the second dose.

At the time of the third injection, 410 children were immunized. Of these, 62 were brought for the first time, 81 received the second injection and 267 the third one.

The parents of children who received only one or two injections during this programme were advised to complete the immunization schedule by subsequent injections at the Medical College Hospital.

Thus from the above it can be seen that 267 children received all the three injections during the programme, and some more will complete the course later.

Information regarding the number of children in the area covered was not collected. However, on the basis of the 1961 Census data, about 15% of the population is expected to be in the age group 3 months—5 years. Thus, there are likely to be about 750 children in this age group among 5062 residents of the area. Of these approximately 36% had a complete initial course of D.P.T. 11% got two injections and 8% only one. Many children in the two latter groups are expected to complete the course later.

Discussion

Comparison of the sample population with the general population shows that the sample contained a higher propor-

tion of Hindus than Muslims. Considering the educational level of the father and the mother in the sample and the general population, it is seen that there is a fair agreement in the proportions at different educational levels, especially for the mother. To test if the number of mothers and fathers in the various educational categories was significantly different from the number expected on the basis of the 1961 Census data for Aurangabad, the chi-square test was applied. Categories 4 and 5 (i.e. matriculation and beyond matriculation) had to be merged with category 3, as the number of expected individuals was small (less than 10). For the mothers, there was no significant difference. For the fathers, however, the distribution was significantly different. It seemed that educated fathers were different in their approach to the vaccination programme (Sathe and Shah 1965). However, their number is very small and the importance is less from the practical point of view. Separate figures of acceptability for this group would have been interesting but unfortunately they are not available. As far as the size of the family is concerned, households with no children were not visited, resulting naturally in there being no household with a single member in the sample. The families with 2-3 members were also comparatively less likely to have children between the ages of 3 months to 5 years. Hence the percentage of households in the sample with 2-3 members is less than in the general population. As a consequence of this, the proportion of households in the remaining categories is higher in the sample population.

The fact that parents of about 85% of the children brought for injections

were contacted at home previously is important. Of all the methods and media used to obtain good participation, home-visiting stands out as by far the most effective one. Based on this experience it can be said that without house-to-house visits the participation would have been extremely poor. Similar success of vaccination programmes with door-to-door visiting has been reported earlier (Gandhi, 1965).

This method of enlisting participation is not accepted by some health-education experts, as it is not likely to affect knowledge, beliefs, attitudes or health practices, though the participation is satisfactory (Khalil 1961). It may be argued that children were brought for injections only because a health-visitor had done a door-to-door campaign. However, in a mass vaccination programme "the chief objective is to get the people to take the vaccine whether or not they understand its part in the prevention of disease" (Christian 1961). It was fully realized that the long term aim of satisfactory health-education will not be achieved. Mass vaccination programmes should not and can not wait till that aim is achieved. In addition, it is felt that the achievement of motivating the parents to participate is by itself helpful and a satisfactory initial step in the achievement of long term aims.

Failure to complete the full course of three injections again illustrates the difficulty usually experienced in mass vaccination programmes. In this programme only about 58% of the children were given all the three injections, though some more will complete the course by getting subsequent doses in the Medical College Hospital.

The immunization status of the children observed was fair for smallpox

but extremely poor for B.C.G. and polio vaccination, indicating that much still remained to be done in this area.

Summary

Mass D.P.T. vaccination was undertaken in Aurangabad in June, 1966. To begin with, vaccinations were carried out in a small area to gain experience for further work. Various media for publicity like newspapers, posters, pamphlets, loudspeaker announcements, cooperation of the local people and school-teachers were used. In addition, health-workers carried out house-to-house visits in the area. 462 children came for the first injection, out of which about 85% were from families which had been previously visited.

It is felt that with the short-term aim of getting adequate participation, house-visiting is a satisfactory method.

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