

The Improvement of Immunization Coverage by Early Immunisation of Children in Malaysia

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Introduction

ONE OF the major problems of any immunization programme concerns the extent of coverage of the population. In Malaysia the bulk of the immunization to infants and preschool children is largely performed at the child health clinics (infant welfare clinics), both in the urban as well as in the rural areas. In 1969, although approximately 50% of infants born in Peninsular Malaysia attended child health clinics (Mettrop 1970), only 33% of infants less than one year of age were fully immunized with triple antigen (DPT). One of the reasons for this poor coverage in children attending clinics is that 50% of them drop out by the age of six months (Dugdale 1969 & Chen 1975a). Therefore in the Malaysian context, in order to increase the rate of immunization of infants attending child health clinics, the primary series of immunization should be completed within the first six months of life. With this in view the University Hospital, Malaysia, has adopted the following programme of immunization since 1968. (1) simultaneous B.C.G. and smallpox vaccinations to the newborn. (2) administration of DPT and poliomyelitis vaccines commencing at the age of six weeks, when the mother comes for her post-natal check up. By this means the primary immunization is completed by the age of six months. The efficacy and safety of such a schedule has been discussed in an earlier paper (Chen 1971). Along similar lines in 1972, the Ministry of Health, Malaysia, recommended the commencement of DPT in the second month of life whereas previously it was begun during the fourth month of life.

The purpose of this paper is to examine whether there is a change in the immunization coverage of children in Peninsular Malaysia with this change of immunization schedule.

Methods

Yearly records of the number of doses of BCG, smallpox, DPT and poliomyelitis vaccines given to children in Peninsular Malaysia for the years 1968 to 1974 were examined. From the above the coverage of immunization of infants less than one year of age was then obtained.

Results

Table I shows the immunization coverage by year for children less than one year of age in Peninsular Malaysia from 1968 to 1974. For BCG, which was given soon after birth, the coverage was high (72–81%). The coverage for smallpox, which was given between three to five months of age, was between 44–50%.

Prior to the onset of the new schedule the coverage with respect to DPT immunization was between 29–36%. Currently with the change in the national schedule of immunization DPT being commenced at the second month and the third dose at the fourth month, the coverage for full DPT immunization increased to 51%. The coverage for poliomyelitis immunization for the year 1973 and 1974 was similar to that of DPT.

Discussion

The results clearly show that coverage is improved when immunization is given early in life.

Table I
IMMUNIZATION COVERAGE BY YEAR
(For children less than one year of age)
PENINSULAR MALAYSIA

Type of vaccines	% and number of children immunised													
	1968		1969		1970		1971		1972		1973		1974	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
BCG	39*	(120,829)	37*	(109,270)	41*	(122,888)	53*	(163,745)	72@	(221,706)	74@	(232,395)	81@	(251,362)
Smallpox	49	(151,596)	50	(150,042)	50	(149,412)	48	(147,452)	44	(135,318)	47	(147,722)	49	(152,182)
DPT														
1st dose	46	(142,856)	49	(145,117)	50	(149,131)	51	(157,756)	54	(166,836)	59	(185,150)	63	(193,368)
3rd dose	29	(88,386)	33	(99,490)	35	(104,560)	36	(111,171)	36	(112,370)	48	(150,160)	51	(155,874)
Poliomyelitis														
1st dose	—	—	—	—	—	—	—	—	—	—	59	(186,063)	62	(191,270)
3rd dose	—	—	—	—	—	—	—	—	—	—	45	(141,990)	49	(150,963)

* refers to newborns only.
 @ refers to all infants below one year of age.

Dugdale (1969) observed similar findings in the Kuala Lumpur Municipal clinics. 80% of these clinic patients were immunized with BCG but only 20% of the patients were fully immunized with DPT by the age of one year. As a result, in 1970, the schedule of immunization in the Kuala Lumpur Municipal Clinic was revised and DPT was begun at two months of age instead of four months. This resulted in the doubling of the coverage of the clinic patients for full DPT immunization. (Pathmanathan 1973).

Thus in Malaysia it seems that the rate of immunization of children, attending child health clinics, can be increased by (a) starting immunization as early in life as is possible, (b) giving simultaneous administration of several antigens, thus providing maximal protection within the fewest number of visits, and (c) completing the primary series of immunization (other than measles and reinforcing doses of DPT and poliomyelitis) by the age of six months.

As only 50–60% of infants in Peninsular Malaysia attend child health clinics, in order to increase coverage, efforts should be directed to increase the attendance of children to these clinics. But until such time as health education to women folk in the importance of continuous health supervision and immunization can be achieved one has to depend on other measures in increasing the rate of immunization. This can be done by immunizing children whenever they are available. In Peninsular Malaysia 73% of all births are delivered in hospitals or at home by trained midwives (Malaysia 1975). Immunization with BCG and smallpox can be given at all these maternity hospitals and at home by trained midwives and *jururawat-desa* (community nurses). In Peninsular Malaysia, since approximately 50% of mothers attend post-natal clinics, they can be asked to bring along their babies for immunization at these post-natal clinics.

However, many children, especially those from lower income families, do not attend child health clinics, they do come to the hospitals or health centres when they are sick. This opportunity should be taken to immunize such children when immunization is not contraindicated e.g. in the presence of minor afebrile illnesses. Further, patients who are admitted to hospitals are often fit for immunization on discharge. However, few have been immunized as exemplified by the fact that of the toddlers admitted to the University Hospital, Kuala Lumpur only 25% of them were fully immunized with D.P.T. and 11% with polio-

myelitis vaccine (Chen 1975b). Therefore it is possible to raise the coverage by immunizing children seen in hospitals and in health centres.

Summary

The coverage of immunization of infants less than one year of age for the years 1968 to 1974 in Peninsular Malaysia is presented. Immunizations given early in life achieve a much higher coverage than that given later in childhood. With the change in the national schedule of immunization, when DPT is given earlier in life i.e. at the second month the coverage for full DPT immunization increased by 15%.

In the Malaysian context, where 50% of the infants attending child health clinics drop out by the age of six months, it is crucial to complete by the age of six months the primary series of immunization (other than measles and reinforcing doses of DPT and poliomyelitis vaccines). This can be done by immunizing children as early in life as is possible and giving simultaneous administration of several antigens, giving the maximal number of immunizations in the fewest number of visits.

The rates of immunization of the community can further be improved by immunizing children in the post-natal clinics and also in the outpatient clinics of hospitals and health centres and in the hospital wards.

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