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Immunization Survey - Chiayi City, Taichung County, Taichung City, Miaoli County, Changhua County

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Since 1987, the Department of Health has conducted immunization coverage survey in 10 counties and cities of Taiwan Area To establish immunization rate for other counties and cities, the present surveys were conducted by the National Institute of Preventive Medicine between December 1989 and April 1990 in Chiayi City, Taichung County, Taichung City, Miaoli County and Changhua County With the Support of local health bureaus, children between the ages of 12 and 23 months were investigated of their immunization status of BCG, DPT (diphtheria, pertussis and tetanus), poliomyelitis, measles and hepatitis B vaccines

The modified clustering sampling of WHO was used in these surveys 30 clusters were randomly selected from each county (city) to include a minimum of 210 children of 12 to 23 months old To estimate the number of households needed for each cluster, basic information was collected from household registration offices of townships concerned Four townships were then randomly selected from each county (city) From each township, three lins (neighborhoods) were selected for a pilot survey According to the result of pilot study, the county was then divided into several clusters to randomly select 30 clusters for the survey During the survey, all children between the ages of 12 and 23 months, no matter whether they were registered in that area or not, were interviewed

The questionnaire includes, the background information of parents, & children immunization status and reasons for not being immunized Only holders of immunization records were accepted as immunized Children counted as completely immunized were those who received all of the following vaccines one dose of BCG, three doses of DPT and polio and one dose of measles The immunization status of hepatitis B was also surveyed

Of 9,137, 8,111, 7,945, 7,796, and 6,560 households visited in Chiayi City, Taichung County, Taichung City, Miaoli County and Changhua County respectively, 300, 339, 295, 284 and 313 children were surveyed The completely immunization coverage rates were 72%, 81 1%, 83 4%, 83 5% and 81 4%, with an average of 80 3% (see Table 1) Of them, measles had the lowest immunization rate of 80 3% The immunization rates for the four doses of hepatitis B vaccine were 96 4%, 95 3%, 93 8% and 73 8% respectively 64% to 82% of the children carried either the yellow immunization records issued for use by the Department or any immunization records issued by hospitals Only 1 to 3% of the children haven't any kinds of immunization records

Table 1. Immunization Rates by Antigen in Five Cities/Counties, 1990

	Chiayi City	Taichung County	Taichung City	Miaoli County	Changhua County	Total Average
BCG	92.7	97.0	97.3	97.2	96.2	96.1
DPT-1	97.6	98 8	98.0	97 2	96.5	97.6
DPT-2	94 6	97.4	97 7	95.8	95.2	96.1
DPT-3	90.3	94 7	95 3	93.7	92 4	93 3
Polio-1	97.6	98 2	98.0	97 2	96.5	97 5
Polio-2	94 6	96 8	97 7	96 1	95 2	96 1
Polio-3	90.3	94.7	95.3	93.7	92 4	93.3
Measles	75.7	83.8	83 7	85 6	84 3	82.6
Complete	72.0	81 1	83 4	83.5	81 4	80.3
hepatitis B-1	97.3	95 3	96 9	96 8	95.5	96.4
2nd dose, hepatitis B-2	96.0	94.7	96 6	95.1	94.3	95 3
3rd dose, hepatitis B-3	95.0	93.8	94.5	93.7	92.0	93.8
4th dose, hepatitis B-4	73 0	75 2	76.6	69.8	74.4	73.8
Complete, hepatitis B	72.7	74.6	76 6	70.5	74 8	73.8

Reasons for missed immunizations included. sickness of child (46%), and parents being busy (45%) (see Table 2). Of those who did not accept immunization because of sickness, 9% did so on the recommendation of health station nurses. Immunization rate was found to be statistically significantly related to the educational levels of parents. In general, children of parents with higher than senior high school education, parents younger than 30 years of age and children are registered in that locality tend to have higher immunization rates (see Table 3)

Table 2. Reasons for Not Being Immunized

Reasons	No	%
Child being sick	160	45 6
Parents being busy	156	44 4
Grand parents not informed, parents failed to mention	34	9 7
Serious side effects	13	3 7
Date of immunization inadequate	11	3 1
No vaccines available	5	1 4
Others	3	0 9

Results of all the previous surveys show that child sickness was cited as the major reason for not accepting immunization(2-4) Literatures review show, however, that unless the child is seriously sick in hospital, the immunization of BCG, DPT, poliomyelitis and measles on a sick child with some fever, respiratory infection or diarrhea is safe and effective(5). To eradicate measles, rubella, poliomyelitis and neonatal tetanus earlier, WHO recommends that all opportunities should be used to immume eligible children It seems from the findings that more children of older parents with lower educational levels fail to complete the vaccination, more efforts to educate parents and health workers on immunization, and more efforts to follow-up unimmunized children should be the future directions for the prevention of diseases.

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