

The effect of MMR campaigns on Measles in the Kingdom of Saudi Arabia

To meet the goal of measles elimination by the year 2000, the kingdom conducted mass MMR vaccination campaigns for all school children. The first campaign was conducted in September - October 1998, targeting intermediate and secondary school children in the age group 12 - 18 years. In this campaign, 1,629,565 students were vaccinated, achieving a 96.4% coverage of the target children. In January and February 2000, the second stage of the campaign was conducted targeting all primary school children and first grade intermediate school children in the age group 6 -13 years, 2,412,078 students were vaccinated with a 96.6% coverage of the target children. MMR evaluation study revealed that the second campaign was targeted at the optimum time and for the optimum age groups, and the MMR vaccine used was justified to be safe. (Al-Mazrou et al. 2001)

In the year the first stage of the campaign was implemented (1998), 5519 measles cases were reported in the kingdom, and the number decreased to 617 in the year 2000; this is the lowest number of cases ever reported since measles surveillance began in Saudi Arabia in 1980. Indeed, the overall and age-specific measles incidences

were sharply decreased compared to that of 1998 (see the table below). Among the age of primary school children, 1390 measles cases were reported in 1999 and only 188 cases in 2000, compared to 2446 cases in 1998. This represents 43% and 92% reduction in measles incidence respectively.

The exact net effect of these campaigns on the disease incidence needs more time. Within the same strategies for measles elimination the laboratory diagnosis and surveillance of measles have been implemented since January 2001, rubella was added as another target for elimination as well. In addition, a genomic analysis of measles virus isolate will be considered to identify the type of measles virus circulating in the kingdom.

Several factors are responsible for the reduction in measles incidence in the kingdom. These factors include sustainability of a high measles two-doses vaccination coverage for children under one year (over 90%) and the high vaccination coverage among school-aged children (96% in both campaigns).

The present comprehensive measles and rubella elimination activities in the kingdom may lead to reduction in the number of susceptibles in the

population, especially among age groups more relevant for measles transmission (school children) and may reduce the speed at which new susceptibles enter into the population. Therefore, measles may not be recognized as a public health problem by medical professionals and parents. Accordingly, clinical diagnosis of these two Rash and Fever Syndromes (RFS) should be brought to the attention of all new graduates and recruits joining the medical services in the country.

High population density among illegal migrants in Jeddah and Makkah, and importation of the measles virus from endemic countries remain the main challenges for the elimination target.

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References:

1. Al-Mazrou et al. Evaluation of MMR campaign: Immunogenicity and safety. Saudi Ministry of Health. 2001.
2. Saudi Ministry of Health, EPI surveillance registries, 2000.

Table 1: Percentage of measles reduction in 1999 and 2000, compared to 1998 measles cases

Age Group	Number of cases (% decreased)			
	1998	1999*	2000**	
< 1 yr.	433	350 (19%)	151	(85%)
1-4 yrs.	702	432 (38%)	167	(76%)
5-14 yrs.	2446	1390 (43%)	188	(92%)
15-44 yrs.	1853	640 (65%)	111	(94%)
45 & over	85	3 (96%)	0	(100%)
Total	5519	2815 (49%)	617	(89%)

* The first campaign was implemented in September - October

** The second campaign was implemented in January - February

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