

Controlling meningitis in Makkah

An outbreak of meningococcal meningitis (MCM) appeared in the holy city of Makkah during Ramadan 1412 Hejira (February-March 1992). As a prompt action to protect people, the Ministry of Health (MOH) started a mass vaccination campaign among both residents and pilgrims coming for Umrah.

The vaccination was for *Neisseria meningitidis* groups A and C with polysaccharide vaccine. The vaccination campaign continued in the subsequent months to ensure the highest possible coverage. To determine the coverage rate in Makkah for this vaccine before the Hajj season of 1413 Hejira, we conducted a study during the second half of Shaaban 1413 (February 1993).

A random population sample from Makkah was selected using the cluster sampling technique. All the houses were selected randomly and a standard interview was completed for all households. Of the 902 people interviewed, 476 (52.8%) were male. The majority were Saudi (70.9%), followed by Pakistani (13%), Egyptian (8.5%) and Yemeni (7.4%).

The study showed that 72.6% of the people interviewed had been vaccinated against MCM between Ramadan 1412 and Ramadan 1413. After adding those who had been vaccinated in the preceding two years (12% and 1.3% respectively) and discarding repetition of vaccination in the three years, the calculated vaccination coverage rate for MCM in Makkah in Ramadan 1413 was 85.9%.

Most of the participants (57.2%) received their vaccinations in primary health care centers or government hospitals (Figure 1). Fifty-three percent of the participants believed that the vaccine was protective for one or two years, while 30.8% believed that protection was lifelong.

Those who knew about the outbreak but didn't go for vaccination numbered 26.8%. The reasons they gave for failing to get vaccinated are found in Table 1.

Reported by Dr. Nasser Al-Hamdan and Dr. Muneer Mawlawi (Field Epidemiology Training Program)

Editorial note: For both adults and children, MCM vaccine is administered subcutaneously as a single 0.5 ml dose. Good antibody levels are

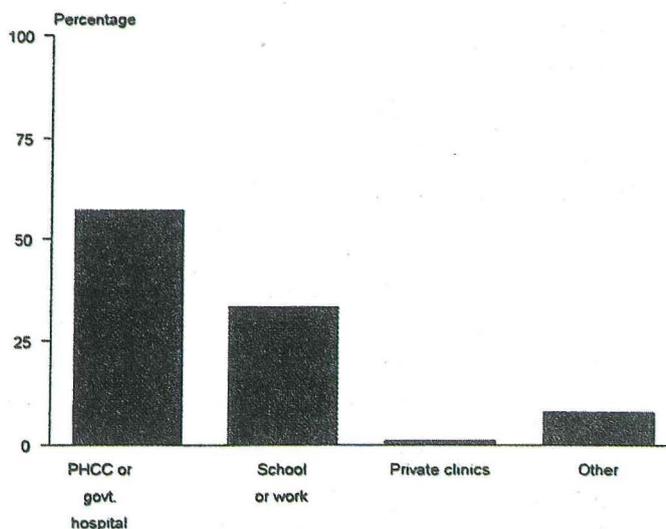


Figure 1: Most common place of vaccination (Makkah, 1412)

achieved within 10-14 days after vaccination. The serogroup A polysaccharide induces antibody in some children as young as 3 months of age, although a response comparable to that seen in adults is not achieved until 4 or 5 years of age; the serogroup C component does not induce a good antibody response before age 18-24 months (1). Vaccination for MCM is beneficial for international travel; in certain high-risk groups (e.g., contacts of patients and medical personnel); and in aborting communitywide outbreaks such as this one. Some of the pilgrims were coming from sub-Saharan Africa (the "meningitis belt") and the Indian subcontinent. Both places are endemic for MCM, which is associated with crowding in small areas. A successful immunization program requires both an

effective vaccine and an effective system to deliver it. The MCM vaccination campaign was effective and, according to Ministry of Health statistics, no single case of MCM was reported in Makkah during the 1413H Hajj season. The role of primary health care centers and governmental hospitals in achieving good coverage is clear. Because the epidemic meningococcal disease peaks in the late winter to early spring, the Ministry of Health needs to continue strict vaccination programs because the pilgrimage period is shifting to cooler weather.

Reference

1. CDC. Meningococcal vaccines: recommendation of the immunization practice advisory committee (ACIP). *MMWR* 1985; 34:255-9.

Reason	Number	Percent
Didn't know about vaccine	27	16.7
No time for vaccination	14	8.6
Vaccine doesn't protect	9	5.6
Vaccine not available	2	1.2
No reason mentioned	110	67.9
Total	162	100.0

Table 1: Reasons for not being vaccinated (Makkah, 1412)