



General Directorate of Health Affairs  
Qassim Region  
Public Health Administration



## Childhood Immunization Program, Qassim Surveillance Report 2011

### Authors

**Dr. Refqi Ismail Mahmoud**

Surveillance Officer, Infectious Disease Unit  
Infectious Diseases & Vector Control Department

**Dr. Fahmi Hussein Emam**

Surveillance Officer, Infectious Disease Unit  
Infectious Diseases & Vector Control Department

**Dr. Hussein Mohammed Hussein**

Director, Infectious Diseases & Vector Control Department

### Contributors and Reviewers

**Dr. Saulat Jahan**

Head of Research and Information Unit

**Dr. Abdullah Mohammed Al-Saigul**

Director General Assistant for Public Health

## **Infectious Diseases & Vector Control Department**

### **Director**

Dr. Hussein Muhammad Hussein

### **Surveillance Officers**

Dr. Fahmi Hussein Emam

Dr. Refqi Ismail Mahmoud

### **Health Inspectors**

Mr. Saleh Abdullah Al-Qobair

Mr. Suliman Al-Marshood

### **For further information about this report, please contact:**

Infectious Diseases & Vector Control Department

Phone: 3266939 Ext. 101

Email: [prevent-qaseem@moh.gov.sa](mailto:prevent-qaseem@moh.gov.sa)

## Introduction

Vaccination against childhood infectious diseases is one of the best primary prevention activities. Well conducted community vaccination programs had managed to eradicate smallpox, to eliminate measles from some continents and to control many deadly infectious diseases. The history of childhood vaccination in the Kingdom of Saudi Arabia goes back to the year 1964, initially by campaigns through maternity and children health care centers. In 1981 the King issued a royal decree making the essential immunization a pre-requisite for the birth certificate. Furthermore, the Saudi Ministry of Health (MOH) adopted Primary Health Care (PHC) as the first line contact for care and the main provider for all PHC programs including Maternal and Child Health (MCH) Program. These had made a major positive change towards organizing and monitoring vaccination programs. Table 1 displays milestones in the history of vaccination in the Kingdom of Saudi Arabia.

**Table 1: History of Vaccination in the Kingdom of Saudi Arabia**

Year	Vaccine
1964	BCG for risky groups
1968	IPV (voluntary) DPT (for new babies)
1970	BCG (as routine for new babies)
1974	OPV (as routine for new babies)
1979	Royal decree for linking birth certificate with vaccination card ( BCG + DPT + OPV )
1983	Measles
1991	MMR + Hep B
2002	Tetra act Hib ( Hib + DPT )
2005	Penta vaccine (Hib + DPT + Hep. B )
2008	Hep A + Varicella vaccine
2009	PCV (pneumococcal conjugated vaccine)
2013	Rota + MCV4 ( meningococcal conjugated vaccine- ACYW135 - ) + Hexa vaccine ( DTaP + Hib + Hep + IPV )

### **Vaccination and Surveillance of Vaccine-preventable Diseases**

For the vaccination program to be effective, a suitable surveillance program should be established to manage its resources; to monitor vaccination coverage; to identify weaknesses and foci; and to monitor vaccine side effects. The vaccination surveillance should have a closely linked surveillance for the targeted diseases. Vaccine coverage surveillance was established in 1991. It is similar to the infectious diseases surveillance. All health care institutes that provide the vaccination services are requested to report monthly their activities using a standard reporting form. BCG and first dose of hepatitis B vaccine are given at birth at the delivery site, mostly hospitals. District hospitals weekly inform the districts health PHC Centers supervisory office about babies born to register them at PHC Centers (PHCC) vaccination register. First visit of the baby to PHCC is conducted at the age of two months. Vaccinations are documented on the vaccination card, vaccination register and the baby's file. Mothers are given appointment for the next well baby care visit. Mothers are usually reminded by the clinic nurse before the next appointment. For mothers who fail to keep the appointment, visits are rescheduled and they are informed on telephone.

Vaccine side effects surveillance program was established by the MOH in 2002. All suspected cases are notified by the treating physicians to the infectious diseases department within 24 hours, using a standard form. The PHCC where the child was vaccinated completes the surveillance as per the system guidelines. All side effect notifications are forwarded to the central MOH by fax.

Children who were born after 1990 are expected to have received hepatitis B vaccine during their childhood. The current hepatitis B prevalence among adults is 17.2/100,000 . All pregnant mothers are supposed to be screened for hepatitis B as part of the routine antenatal care. Hepatitis B positive mothers are advised to present to hospitals for delivery early enough and to carry their antenatal card with them all the time. At delivery the baby of positive mother is given hepatitis B vaccine as routine as well as hepatitis B immunoglobulin within 12 hours of delivery then the routine hepatitis B vaccine is completed as usual and the baby 's hepatitis B status is closely monitored.

**The program specific objectives are:**

1. To raise the coverage rate for each antigen to be not less than 95%.
2. Eradication of Poliomyelitis and Tetanus Neonatorum.
3. Elimination of Measles, Mumps and Rubella.
4. Reduce the morbidity and mortality from the target diseases.

Table 2 displays the national immunization program schedule in the Kingdom of Saudi Arabia.

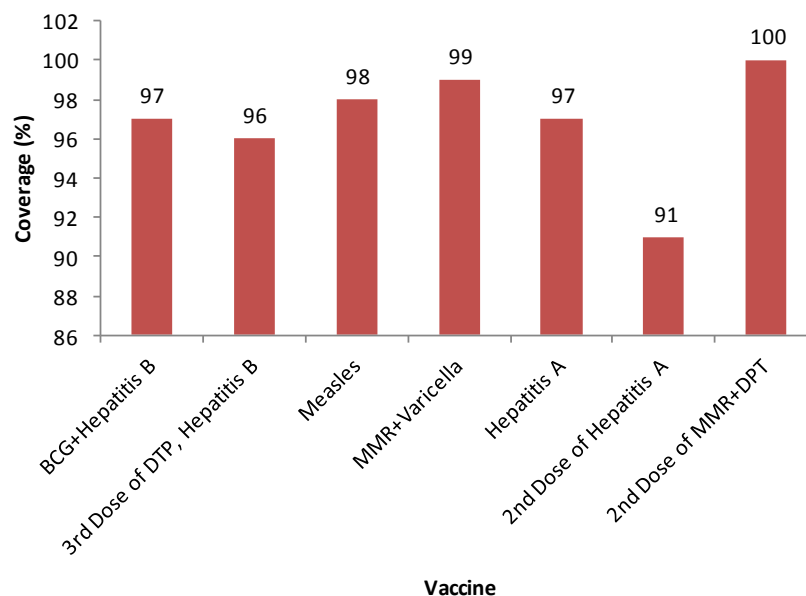
**Table 2: National Immunization Program Schedule in KSA (2011)**

Visit	Vaccine	Visit	Vaccine
At Birth	BCG	9 Months	Measles
	Hepatitis B		OPV
2 Months	IPV	12 Months	MMR
	DTP		Varicella
	Hepatitis B		Pneumococcal Conjugated Vaccine
	Hib		
	Pneumococcal Conjugated Vaccine		
4 Months	OPV	18 Months	OPV
	DTP		DTP
	Hepatitis B		Hib
	Hib		Hepatitis A
	Pneumococcal Conjugated Vaccine	2 Years	Hepatitis A
6 Months	OPV	Vaccination on entry in first class of primary school (Vaccination in the School)	OPV
	DTP		DTP (DT)
	Hepatitis B		MMR
	Hib		Varicella
	Pneumococcal Conjugated Vaccine		

### Immunization Unit in Qassim

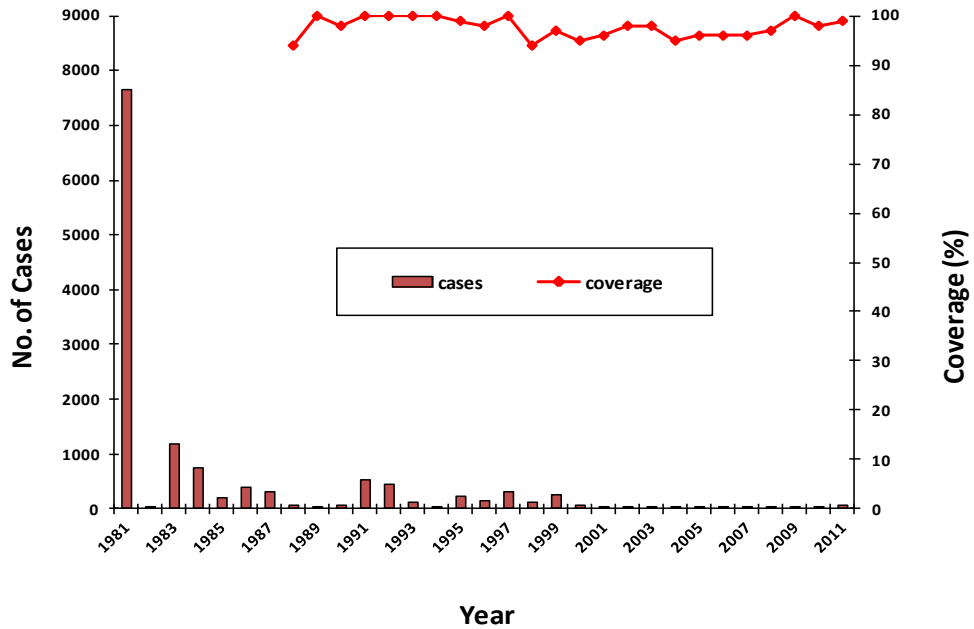
The regional vaccination program follows the national one. All resources are supplied through the national MOH concerned departments and all of the program activities are conducted and closely monitored by the central department. Government health care facilities in Qassim region involved in the Vaccination program are 151 PHCC and 15 Hospitals. In addition, there are three other governmental health facilities other than Ministry of Health, these are the National Guard health center, Security Forces health center and, Military Forces health center. There are private health sector enrolled in the vaccination program, it includes five private hospitals and thirteen private clinics. Figure 1 displays the coverage of routine EPI immunization in Qassim during the year 2011.

**Figure 1: Coverage of Routine EPI Immunization: Qassim, 2011**

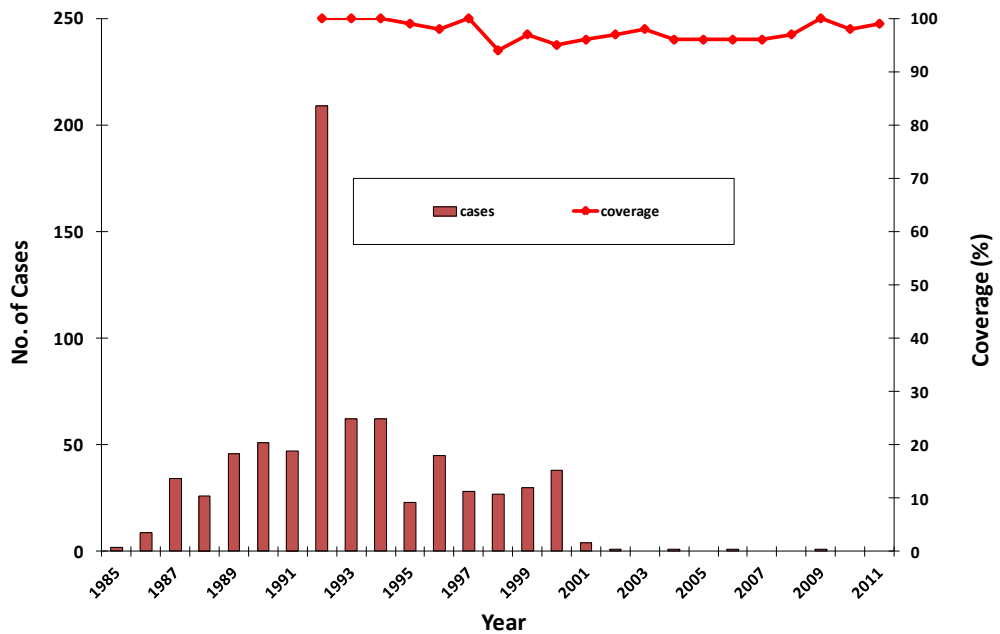


Childhood vaccination has led to decline in the incidence of targeted diseases such as measles, rubella and chicken pox. In Qassim, a declining trend in the number of notified measles cases corresponding with high measles vaccination coverage, can be noticed (Figure 2). Similar decreasing trends are noticed for notified rubella cases after rubella vaccine introduction (Figure 3). Recent introduction of varicella vaccine in 2008 has resulted in a sharp decline of the number of notified chickenpox cases (Figure 4).

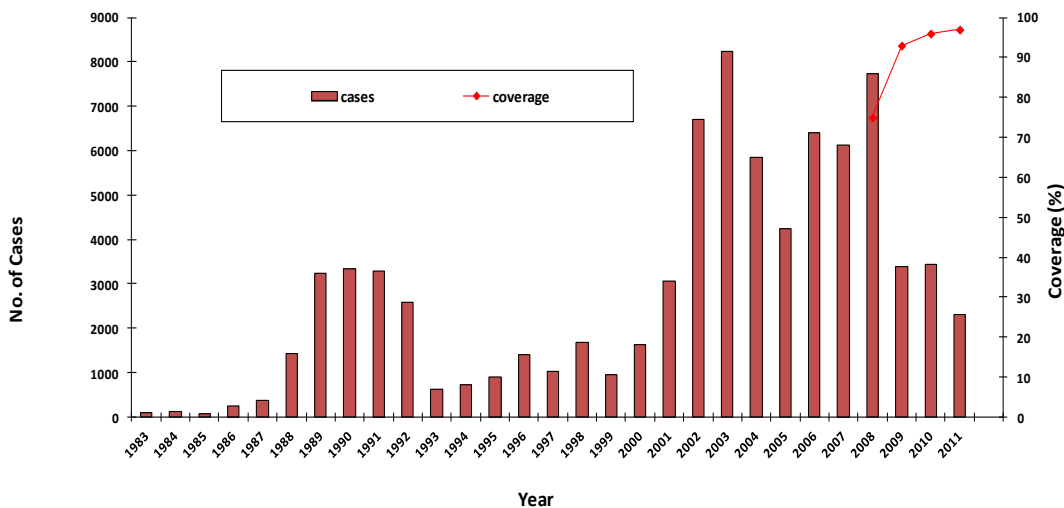
**Figure 2: Measles Cases and Vaccination Coverage: Qassim, 1981-2011**



**Figure 3: Rubella Cases and Vaccination Coverage: Qassim, 1985-2011**



**Figure 4: Chickenpox Cases and Vaccination Coverage: Qassim, 1983-2011**



**Supplementary Immunization Campaigns 2011**

In 2011, a vaccination campaign against measles, mumps and rubella was launched in two stages. The first stage aiming to vaccinate all the students of primary, intermediate and secondary schools in the region. The results of the first stage of the campaign showed the total number of students (except those of first class of primary stage) targeted was 226,288 students, the vaccinated number was 225,947 resulting in a coverage of 99.76% . The total number of targeted students in first class of primary school was 21,864 students while the total number vaccinated was 21,926 leading to 100.2% coverage. Obtaining more than 100% coverage may be attributed to errors in estimation or possible miscalculation of denominators.

The second stage of the campaign targeted all pre-school children in the age group 0-6 years, university students, military students, and other age group 19-24 years outside these facilities. Almost all pre-school children were vaccinated during this stage of the campaign. The estimated vaccination coverage for university students and military students was 76.1% and 42% respectively. Similarly, the group comprising of 19-24 years age, neither enrolled in university nor military institutions, had an estimated vaccination coverage of 46.2%.



### **Screening Pregnant Women against HBsAg**

Screening of pregnant women for HbsAg is an important strategy for Hepatitis B control. All pregnant women are expected to be screened for hepatitis B during their gestation as part of the routine antenatal care. During the year 2011, a total of 129 hepatitis B positive pregnant women were detected comprising 5.3/1,000 of total registered deliveries; seven of these were expatriates. Out of 121 babies born to these positive mothers, 116 (95.9 %) were given hepatitis B immunoglobulin within 12 hours of delivery. A total of 113 (93.4%) babies were followed up for 12 months. No HbsAg positive case was detected among these babies.

## References

- Centers for Disease Control and Prevention [CDC]. (1999). Ten great public health achievements—United States, 1900-1999. Retrieved from <http://www.cdc.gov/mmwr//preview/mmwrhtml/00056796.htm>
- Heymann, D. L. (2008). Control of communicable diseases manual. (19th ed.) Washington, DC: American Public Health Association.
- Khalil, M. K. M., Al-Mazrou, Y. Y., AlHowasi, M. N., & Al-Jeffri, M. (2005). Measles in Saudi Arabia: from control to elimination. *Annals of Saudi medicine*, 25(4), 324–328.
- Khalil, M. K., Al-Mazrou, Y. Y., Al-Jeffri, M., & Al-Ghamdy, Y. S. (2001). Measles immunization in Saudi Arabia: the need for change. *Eastern Mediterranean health journal*, 7(4-5), 829–834.
- Mishkhas, A. A., Alneel, O. M. H., Hamid, M. A., & Ibrahim, A. H. (2005). Manual for vaccination room staff. Riyadh: Ministry of Health, Saudi Arabia.
- Nelson, K. E. & Williams, C. M. (2007). *Infectious Disease Epidemiology: Theory and Practice*. (2nd ed.). Sudbury, MA: Jones and Bartlett Publishers Inc.
- The Health Ministers Council for G.C.C. States. (1996). Manual of immunization for G.C.C. States. Riyadh: Executive Board of The Health Ministers Council for G.C.C. States.