THE ORGANIZATION AND DELIVERY OF
VACCINATION SERVICES IN THE EUROPEAN UNION

# CYPRUS

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# Cyprus

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## Governance

The Child and Adult Immunization Programme in Cyprus is set out at the national level by the Ministry of Health of the Republic of Cyprus, following recommendations from the National Advisory Committee on Immunizations. The aim of the immunization programme is to maintain and increase the already high levels of immunization of all children at the appropriate age and recommended doses. To achieve this, the Ministry of Health and, more specifically, the Directorate of Medical and Public Health Services, which is the responsible body, has adopted the Expanded Programme on Immunization and closely adheres to WHO recommendations. The immunization programme is an ongoing process, modified and updated according to changes in epidemiological data and international scientific knowledge and recommendations. Based on these recommendations, and in an effort to ensure a unified approach to the administering of vaccines, the Ministry of Health has published a vaccination booklet with the recommended programme, as well as background information on the vaccines, their side-effects and contraindications, which is disseminated to all health workers involved in the administering of vaccines (both in the public and private sectors) (Figure 1).

In addition to the vaccines shown in Figure 1, for the last three years the HPV vaccine has also been introduced and is given free to all girls in the first class of secondary school (11–12 year olds).

Although vaccinations are not mandatory in Cyprus, immunization coverage is very high. According to 2017 data, 97% of children were covered with DTP3 (Figure 2)

**Figure 1** Immunization scheme

| VACCINE \ AGE | Birth | 2 Mths | 4 Mths | 6 Mths | 8 Mths | 12 Mths | 13 Mths | 15 Mths | 18 Mths | 20 Mths | 24 Mths | 4-6 Yrs | 14-15 Yrs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diphtheria Tetanus Pertussis | | DTaP | DTaP | DTaP | | | | DTaP | | | | DTaP | |
| Polio | | IPV | IPV | IPV | | | | IPV | | | | IPV | |
| Haemophilus Influenza – type b | | Hib | Hib | Hib | | Hib | | | | | | | |
| Pneumococcal conjugated | | PCV | PCV | | | PCV | | | > PCV | | | | |
| Hepatitis B | | Hep B | Hep B | | Hep B | | | | | | | | |
| Meningococcal C conjugated | | | | | | Men C | | | | | | | |
| Measles Mumps Rubella | | | | | | | MMR | | | | | MMR | |
| Varicella | | | | | | | Var | | | | | Var | |

Vaccines that are given special findings

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pneumococcal conjucated | | | | | | | | | | > PCV | | | |
| Pneumococcal Polysacharide | | | | | | | | | | PPV23 | | | |
| Meningococcal Polysacharide | | | | | | | | | | Men Polyscharide | | | |
| Hepatitis A | | | | | | | | | | Hep A | | | |
| Tuberculosis | BCG | | | | | | | | | | | | |
| Influenza | | | | Influenza | | | | | | | | | |

**Adult Vaccination**

1. Td Adults – given if recommended doses were missed and as a booster dose every 10 years
2. Hepatitis B (HepB) – given to adults who belong to high risk groups
3. Measles- Mumps- Rubella (MMR) – given if recommended doses were missed
4. Influenza – given to high risk groups and for other specific indications

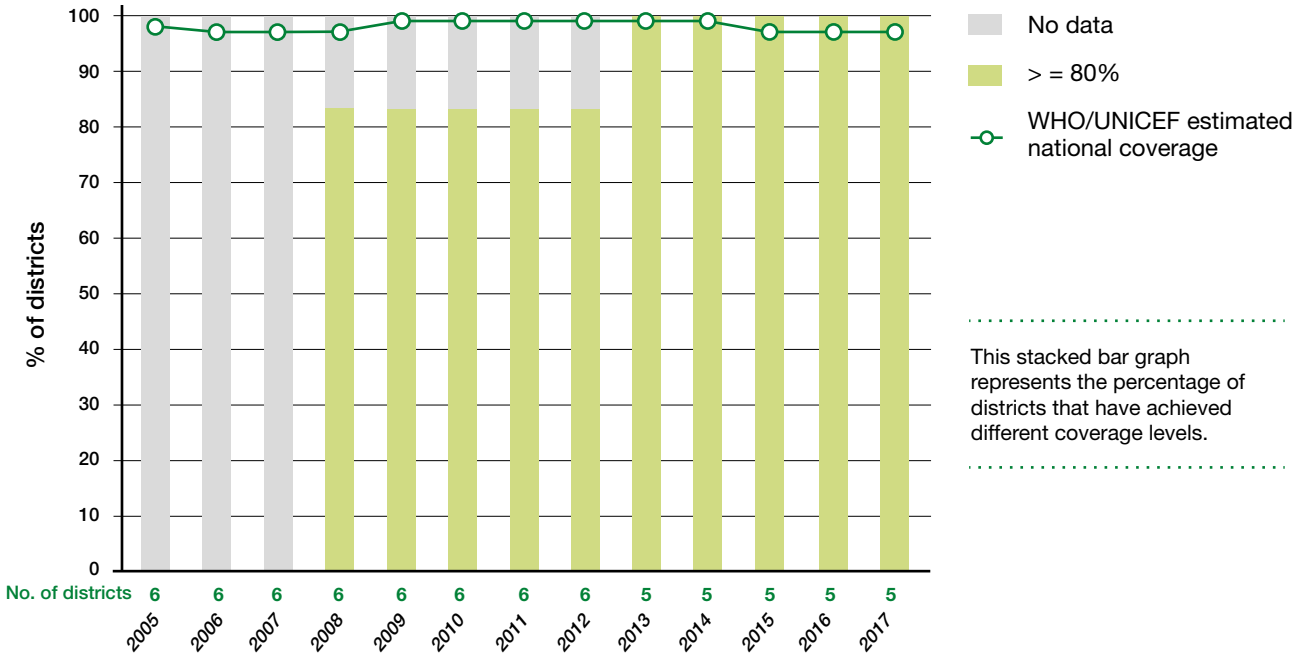
**Shape**

[ ] Indicate the range of recommended ages for immunization

[>] Indicate vaccines to be given if previously recommended doses were missed or given earlier

*Source*: Ministry of Health, 2016

**Figure 2** DTP3 coverage in Cyprus, 2005–2017




*Source*: WHO, 2018

and 90% were covered against MMR (WHO, 2018). These data are derived from national surveys conducted by the Ministry of Health, covering children of 17–24 months of age. These surveys are repeated every three years and are carried out according to WHO recommendations and guidelines.

As a result of the high immunization coverage, no measles cases were reported during 2015 and 2016 in Cyprus and only eight cases during the period from February 2017 to January 2018.

The high immunization coverage is mainly due to several incentive schemes, including:

- Provision of vaccines free of charge to all children in the public sector, regardless of their nationality or socioeconomic status. Children who are asylum-seekers or refugees living in government-organized accommodation are also vaccinated free of charge by the Ministry's medical and public health services. Newly arriving refugees are immunized with some basic vaccines such as DTaP and IPV within 48 hours of their arrival.

- A significant percentage of children are also immunized by their private paediatrician. In this case the cost is paid out-of-pocket or covered by the parents' private health insurance.

- Cooperation between the public and private sectors to promote vaccination. Every year a campaign is organized to inform not only health professionals but also children and their parents about the benefits of vaccination. The campaign includes newsletters and messages in radio and TV programmes and the distribution of leaflets.

- The Vaccination Coverage Intervention Action is undertaken annually to ensure that all children at primary schools (public and private) are vaccinated according to the recommended programme. More specifically, at the beginning of each school year health visitors check all pupils' vaccination cards to ensure that they are vaccinated according to the recommended programme; in cases of incomplete vaccinations, they inform the parents or guardians of the importance of, and the necessity to proceed with, the vaccination of their children. In April of the same school year the vaccination cards are rechecked in order to assess the result of this intervention. Results are usually quite good. Children can also be vaccinated at schools.

Regarding **adult vaccination against influenza**, the Ministry of Health, following recommendations from

WHO and the European Centre for Disease Prevention and Control, recommends vaccination of those belonging to the following high-risk groups, in order to reduce the number of patients, the severity of infection, and the number of deaths:

- citizens over 65 years;
- residents in nursing homes and patients in long-term care institutions;
- children and adults with chronic lung disease or cardiovascular disease;
- people with chronic kidney disease;
- people with chronic metabolic disease, including diabetes mellitus;
- people with HIV infection;
- people with neurological disease;
- immunosuppressed individuals;
- people with sickle cell anaemia or other haemoglobinopathies;
- children and adolescents who require long-term aspirin therapy;
- pregnant women after the first trimester of pregnancy;
- people working or living in places where the aforementioned high-risk groups live; and
- health workers.

There are no complete data for adult vaccination against influenza, except for those who have been vaccinated in the public sector. According to Health and Hospital Statistics (Cyprus Statistical Service, 2015), around 13 000 adults (belonging to the above-mentioned high-risk groups) are vaccinated every year in the public sector. Influenza activity in Cyprus is monitored through three systems: syndromic surveillance in primary care, virological surveillance, and surveillance of severe illness and deaths. Recent data show that influenza intensity is low in Cyprus compared to most other EU/EEA countries (European Centre for Disease Prevention and Control, 2018b).

## Provision

Children can go to either the public or the private sector for vaccination. Immunization in the public sector is carried out at hospitals and health centres by health visitors or nurses, as well as at schools by the school health services, under the guidance of public health doctors and after receiving written consent from the parents. In the private sector vaccinations are carried out by paediatricians or, for adults, by general practitioners. In the public sector the responsibility for calling and follow-up lies with local health visitors, while in the private sector it lies with primary care paediatricians.

## Financing

The vaccines used in the public sector are centrally purchased through a tender by the pharmaceutical services of the Ministry of Health and are provided free of charge to all children regardless of income, socioeconomic status and nationality. The seasonal influenza vaccine is also provided free of charge to all persons over 65 who apply to public hospitals. These people, regardless of whether they are entitled to free medical care or not, can apply for vaccination directly at hospitals or health centres, using their identity card to confirm their age. For other age groups, vaccination against influenza is provided free of charge only to those people who are eligible for free health care in the public sector. The total cost of vaccines and vaccination services provided by the public sector is borne exclusively by the Ministry of Health.

For vaccinations carried out in the private sector, doctors purchase vaccines from pharmacies and are then reimbursed directly by the patients or by private health insurance. According to the price list issued by the Cyprus Pharmaceutical Services in March 2018, the maximum retail price (i.e. the maximum price pharmacies can charge when selling medications) was set at €14.23 for the MMR vaccine and at €25.93 for the vaccine against seasonal influenza (Pharmaceutical Services Cyprus, 2018). However, patients pay paediatricians or general practitioners much more for vaccination in the private sector.

It is estimated that 42% of children are vaccinated in the public sector and 58% in the private sector. However, more recent estimates indicate that during the financial crisis more children were vaccinated in the public sector than in the private sector.

## Key barriers and facilitators

The financial incentives mentioned above, and because all children and certain categories of adults can be vaccinated free of charge in the public sector, as well as the monitoring of the vaccination coverage of children, have contributed to the high vaccination coverage in Cyprus.

There are no serious barriers that make it difficult for children to have access to vaccinations. According to a survey conducted in 2015 (Ministry of Health, 2016), the main reasons reported by parents for not vaccinating their children were "child's sickness" (67%), followed by "lack of vaccine" (9.8%), "lack of time" (7.6%), "lack of interest" (6.5%), "limited information" (3.3%), and "other reasons" (8.7%). Despite the high rates of vaccination, there is still room for improvement. According to the 2015 national vaccination survey, approximately 2% of the population rejects vaccination.

For influenza vaccination, there is no evidence on barriers or facilitators. However, barriers might include possible ignorance of the existence of the vaccine and the importance of vaccination against influenza, particularly for older people, as well as misinformation and the anti-vaccination movement. Facilitators are likely to include the free-of-charge provision of the vaccine and the information provided for the population by the services of the Ministry of Health and private doctors.

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