

Vaccination Coverage in Different Countries

Global vaccination coverage

Global vaccination coverage remains at 85%, with no significant changes during the past few years. Additional 1.5 million deaths could be avoided, however, if global immunization coverage improves. It is good news that the global measles mortality has declined by 73%. By the end of 2018, 88% of children worldwide had received one dose of the measles vaccine by their second birthday, and 69% of children had been administered two doses of the measles vaccine according to NIPs (WHO, 2019).

Immunization prevents 2-3 million deaths every year. It is estimated that 19.4 million children under the age of one have not been administered basic vaccines. (WHO, 2019).

Every year, the last week of April is celebrated by WHO and partners as World Immunization Week. It aims to promote the use of vaccines to protect people of all ages against disease. Immunization is widely recognized as one of the world's most successful and cost-effective health interventions (WHO, 2019).

Each year in April, European Immunization Week (EIW) promotes the core message that the immunization of every child is vital to prevent diseases and protect life. The goal of the region-wide campaign is to increase vaccination coverage by raising awareness of the importance of immunization. (WHO, 2014).

Global vaccination coverage is monitored by WHO (World Health Organization) and ECDC (European Center for Disease Prevention and Control). However, vaccination coverage varies by country and region. It varies also by vaccine. There are also differences between vaccination programs in different countries (ECDC, 2018a).

The following is an example of vaccination coverage for measles: 14 600 cases of measles were reported in the EU and EEA countries in 2017 (ECDC, 2018, WHO, 2018). During the period of December 2018 - December 2019, 13 460 measles cases were discovered, and thus the total number of cases continued to decrease. The highest numbers of cases were reported in France (2674), Romania (1746), Italy (1689), Poland (1532) and Bulgaria (1201). There were 369 confirmed cases of measles in Slovakia, in Spain 287, in Greece 45 and in Finland 17. (ECDC, 2019).

In Europe, in 2017, vaccination coverage of the second dose of measles vaccination series was 95-99% in Norway, Portugal, Croatia, Hungary and Slovakia. Vaccination coverage was approximately 84% in France, Romania and Austria. In other countries, it was at the 85-94% level, where the herd immunity has not yet been reached (ECDC, 2018b).

Factors affecting vaccination coverage

Many factors influence vaccination coverage, not just the willingness of clients to take vaccines. The reasons may be the following: the availability of vaccines, poor flow of information, a national free-of-charge vaccination program, vaccinators' knowledge, attitudes and ability to encourage clients, as well as the attitudes of clients towards vaccination.

Health care professionals play a key role in achieving and maintaining high vaccination coverage rates. They serve as an important source of information for the general public and are the main drivers of vaccination programs (Vorsters et al., 2010).

Various interventions can be carried out, such as improving health care services and factors affecting availability, reminder intervention (electronic media, reminders via SMS), incentives to parents, group training, face to face conversation, or counseling.

Herd immunity

If enough people in a community are vaccinated, it is harder for a contagious disease to pass between people who have not been vaccinated. This is known as 'herd immunity' or community immunity. Herd immunity gives protection to vulnerable people such as those who are too sick or too young to be vaccinated. Herd immunity means that the majority of the population is vaccinated.

According to a glossary of vaccines and immunization, community immunity is defined as follows: "Community immunity: A situation in which a sufficient proportion of a population is immune to an infectious disease (through vaccination and/or prior illness) to make its spread from person to person unlikely. Even individuals not vaccinated (such as newborns and those with chronic illnesses) are offered some protection because the disease has little opportunity to spread within the community. Also known as herd immunity." (CDC, 2019)

The number of vaccinated people required to achieve herd immunity varies. Most of the diseases need over 90% level of vaccination to maintain herd immunity – measles even over 95%. (WHO, 2018).

It is possible to eradicate many contagious diseases and their sequelae and to reduce disabilities and deaths caused by them because of national vaccination programs. "The more contagious a disease is, the higher the vaccination coverage must be to keep the disease out of the country. If vaccination coverage decreases, the diseases may return". (THL 2019).

Thanks to vaccinations, many diseases, their sequelae and complications have become very rare in many countries or disappeared completely.

Vaccination programs have reduced the incidence of several dangerous infectious diseases (such as diphtheria, measles and rubella) in both developed and developing countries. Communicable diseases quickly flare up if vaccination coverage is reduced.

References:

Government USA. 2019. Vaccine Glossary of terms. Glossary Vaccines and Immunization. Centers for Disease Control and Prevent <https://www.cdc.gov/vaccines/terms/glossary.html>

ECDC, 2018a. Vaccine schedules for individual European countries and specific age groups. <https://www.ecdc.europa.eu/en/immunisation-vaccines/EU-vaccination-schedules>

ECDC, 2018b. Vaccination coverage for the second dose measles-containing vaccine, EU/EEA, 2017 <https://www.ecdc.europa.eu/en/publications-data/vaccination-coverage-second-dose-measles-containing-vaccine-eueea-2017>

ECDC, 2019. Monthly measles and rubella monitoring report.

<https://www.ecdc.europa.eu/sites/default/files/documents/measels-rubella-monthly-report-january-2020.pdf>

THL 2019. Vaccination coverage. <https://thl.fi/en/web/vaccination/vaccination-coverage>

Vorsters, A. & Tack, S. & Hendrickx, G. & Vladimirova, N. & Bonnani, P. & Pistol, A. & Metlicar, T. & Alvarez Pasquin, M. & Mayer, M. & Aronson, B. & Heijbel, H. & Van Damme, P. 2010. *A summer-school on vaccinology: responding to identified gaps in pre-service immunization training of future health care workers*. Vaccine 28 (2010), 2053-59.

WHO, 2014. European Vaccine Action Plan 2015-2020. <http://www.euro.who.int/en/health-topics/disease-prevention/vaccines-and-immunization/publications/2014/european-vaccine-action-plan-20152020-2014>

WHO, 2018. Herd immunity. Fighting measles is a shared responsibility. Data and statistics.

<http://www.euro.who.int/en/health-topics/disease-prevention/vaccines-and-immunization/data-and-statistics/infographics/infographic-herd-immunity-fighti>

WHO, 2019. Immunization coverage. <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>