

Effectiveness of Vaccination Programs

The best proof of a vaccination program's success is the complete eradication of a disease. One disease, smallpox was completely eradicated in 1980. WHO (World Health Organization) is working to eradicate polio also (Leino, 2017).

The global campaign to eradicate polio was started in 1988. As a result, cases caused by the wild poliovirus have decreased by over 99% since 1988. In 2018, only 33 cases were reported worldwide, compared to approximately 350 000 in 1988 (WHO, 2019a).

Measles vaccination programs have reduced measles deaths worldwide by 80% between 2000 and 2017. During these years, measles vaccination was estimated to have prevented 21.1 million deaths, thus making the measles vaccine one of the best investments in public health care (WHO, 2019b).

It is difficult, however, to completely eradicate diseases. Therefore, the realistic goal is to vaccinate and protect an individual, and often his/her immediate surroundings, from infections and the related sequelae. For example, influenza vaccination prevents influenza and also reduces the incidence of bacterial pneumonia (Leino, 2017).

Vaccination is always a better option for an individual than the disease and the related sequelae. Vaccinations significantly reduce the serious forms of diseases and prevent injuries and deaths in communities. At the level of society, the vaccination program reduces, among other things, social and health care costs, other expenses related to illness, the number of sick leaves and absences from work by parents of small children.

Monitoring and studying the effectiveness of the vaccination program: An example from Finland

The national vaccination program has succeeded in completely or nearly eradicating measles, rubella and mumps, diphtheria, Hib-infections and tetanus from Finland (Leino, 2017). The effectiveness of the vaccination program in Finland is examined by Finnish Institute for Health and Welfare (2016). National registers monitor and investigate the effectiveness of vaccinations and vaccination programs.

It is important to remember that correctly recorded vaccination data is the key to monitoring and investigating the effectiveness of vaccinations. Therefore, make sure that your record keeping of vaccinations is correct.

The benefits of a vaccination program can be explored by investigating the reduction in the disease or disease-related sequelae in the vaccinated population. The overall effects of vaccination depend on a number of factors.

Read a report how the pneumococcal conjugate vaccine has affected the pneumococcal disease in different age groups in Finland. This vaccine was introduced in the Finnish national vaccination program in 2010. You can read the report here:

<https://thl.fi/en/web/thlfi-en/research-and-expertwork/projects-and-programmes/monitoring-the-population-effectiveness-of-pneumococcal-conjugate-vaccination-in-the-finnish-national-vaccination-programme>.

References

Finnish Institute for Health and Welfare 2016. Monitoring the population effectiveness of pneumococcal conjugate vaccination in the Finnish national vaccination programme. <https://thl.fi/en/web/thlfi-en/research-and-expertwork/projects-and-programmes/monitoring-the-population-effectiveness-of-pneumococcal-conjugate-vaccination-in-the-finnish-national-vaccination-programme> Retrieved 16.12.2020

Leino T. 2017. Rokotusohjelman vaikuttavuus. Lääkärikirja Duodecim. Terveyskirjasto Duodecim. https://www.terveyskirjasto.fi/terveyskirjasto/tk.koti?p_artikkeli=dlk00801 Retrieved 16.12.2020

WHO. 2019a. Poliomyelitis. <https://www.who.int/news-room/fact-sheets/detail/poliomyelitis> . Retrieved 16.12.2020

WHO. 2019b. Measles: <https://www.who.int/en/news-room/fact-sheets/detail/measles> Retrieved 16.12.2020