World Health Organization
REGIONAL OFFICE FOR Europe

SDG target 3.3: by 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases.

SDG target 3.8: achieve universal health coverage, including financial risk protection, access to quality essential health care services, and access to safe, effective, quality and affordable essential medicines and vaccines for all.

Fact sheets on sustainable development goals: health targets

Poliomyelitis

Strong progress continues to be made since the World Health Assembly called for the worldwide eradication of poliomyelitis (polio) in 1988 *(1)*. At that time, polio was endemic in more than 125 countries around the world and more than 350 000 children a year were paralysed for life by the virus *(2)*. In 2017, transmission of wild poliovirus is at its lowest levels ever, with endemic transmission occurring in parts of only three countries worldwide. Only one wild serotype (poliovirus type 1) continues to be detected; wild poliovirus type 2 was officially declared eradicated in 2015 and no case of paralytic polio caused by wild poliovirus type 3 has been detected anywhere since November 2012 *(2)*. The world stands on the brink of an historical global public health success. In working towards global polio eradication, WHO, Member States and partners contribute directly and indirectly to progress to several Sustainable Development Goals (SDGs) *(3)*, affecting health security, poverty, education, gender equality and economic growth. Action is necessary across sectors and settings to eradicate polio.

Overview

Poliovirus is a highly infectious virus that invades the nervous system and can cause lifelong paralysis and sometimes death. In June 2002, all 53 countries in the WHO European Region were certified polio free. A sustained immunization effort and strengthened disease surveillance help to maintain the Region's polio-free status and ensures that no polio case is left undetected *(4)*.

Poliomyelitis and SDGs: facts and figures

A sustained effort of routine immunization, strong disease surveillance and outbreak response is needed to maintain polio-free status and eradicate the disease *(5,6)*.

- Vaccination against polio is a cornerstone of routine immunization services in all 53 Member States in the WHO European Region. The outlined challenges, such as gaps in immunity, surveillance and reporting, are relevant to this goal, and the proposed strategies will contribute to achieving it *(7)*.
- In line with the Polio eradication and endgame strategic plan 2013–2018 *(8)* and the Global Action Plan to minimize poliovirus facility-associated risk after type-specific eradication of wild polioviruses and sequential cessation of oral polio vaccine use (GAPIII) *(9)*, 19 Member States in the Region successfully withdrew trivalent oral polio vaccine in April 2016 *(5)*.
- Forty-eight Member States in the European Region have now introduced at least one dose of inactivated polio vaccine, but introduction has been delayed in five Member States because of global supply issues *(5)*.

Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks: highly sensitive surveillance supported by an accredited laboratory network is critical to identify cases and respond adequately to any importation or outbreak.

- As identified by the European Regional Commission for Certification of Poliomyelitis Eradication *(10)*, a few countries in the Region face ongoing challenges in maintaining quality surveillance and high vaccination coverage, which can pose a risk of polio transmission in the event of importation of wild poliovirus or emergence of a vaccine-derived poliovirus (Box 1) *(5,6)*.
- Efforts to contain wild poliovirus type 2 infectious and/or potentially infectious materials in certified facilities progressed in 2016. The majority of vaccine-production facilities that handle polioviruses are located in the WHO European Region. Most countries in the European Region with polio essential facilities have already established a fully functional national authority for containment; others have functional authorities but lack final government approval *(9)*.

- Vaccination-related improvements in physical and cognitive test scores in children have had a return on investment as high as 21% *(12)*.
- Children, who live free from vaccine-preventable infectious diseases, and from the lifelong sequelae such as those from polio, are likely to become young workers with more personal achievements and longer, more satisfying personal working lives, reaching economic independence earlier in life *(12)*.
- Vaccination is one of the most gender-equitable public health interventions available *(13)*.
- Moreover, reduction in the incidence rates of diseases affecting primarily children, such as through polio vaccination, will allow mothers and female carers to reduce the time they have to devote to sick children, especially in countries where women bear the main responsibility for childcare.

Reducing the negative impact of vaccine-preventable diseases, like polio and measles, has a positive economic impact on families. Successful eradication of polio, meaning that no child will ever suffer from the terrible effects of lifelong paralysis, is estimated to save millions of dollars *(14)*. Without the burden of the disease, family members' work hours have fewer constraints and they have greater economic independence; less money is spent on medicines or medical care, and their communities can benefit from healthier workforces.

Commitment to act

With the adoption of the European Vaccine Action Plan 2015–2020 (EVAP) in 2014 *(7)*, Member States in the European Region have recommitted to "sustain the polio-free status in the WHO European Region by preventing re-establishment of any wild poliovirus transmission in any country in the Region thereby contributing to the global polio eradication".

Box 1. Leaving no one behind...

Reaching the underimmunized: on 1 September 2015, two circulating vaccine-derived polio cases were detected in Ukraine, in the context of low immunization coverage, putting millions of underimmunized children in the country at risk of acquiring the disease *(11)*.

A large-scale response led by the Ministry of Health in collaboration with WHO, the United Nations Childrens Fund (UNICEF) and other international partners offered all children up to 10 years of age one or more doses of oral polio vaccine in order to ensure that every susceptible child was fully immunized. Thanks to these concerted efforts, the outbreak was declared over in April 2016 *(11)*.

Achievement of global polio eradication is one of the highest priorities for WHO, and sustaining the European Region's polio-free status until global eradication is achieved is in line with the EVAP vision of a Region free of vaccine-preventable diseases. This is one of the six primary goals of the EVAP as endorsed by the WHO European Regional Committee *(7)*.

In line with the Global Polio Eradication Initiative, sustaining polio-free status depends largely on high vaccination coverage (EVAP objectives 2 and 3), high-quality surveillance (EVAP objective 4) and shifting to bivalent oral poliovirus vaccine and introducing inactivated poliovirus vaccine in line with the Polio Eradication and Endgame Strategic Plan 2013–2018 (EVAP objective 5) *(8)*. These objectives will require high-level political commitment along with technical assistance on effective implementation of the outlined strategies (Box 2). The call of the Strategic Advisory Group of Experts on Immunization for national immunization systems to demonstrate stronger leadership and governance is also pivotal to the polio eradication efforts of the Region *(16)*.

Box 2. Intersectoral action

Outbreak containment to sustain polio free status: the first importation of wild poliovirus into the WHO European Region since its certification in 2002 was reported in Tajikistan in 2010. This large polio outbreak caused 461 laboratory-confirmed paralytic cases in the country and spread to three countries of the Region *(15)*.

The Government of Tajikistan responded effectively when the cases were detected through close cooperation with WHO, USAID, UNICEF, Rotary International, the Global Polio Eradication Initiative (GPEI) and other partners. As a result of high-quality campaigns, the outbreak was controlled in time.

In the intervening years, many people affected by the outbreak developed disabilities and need long-term rehabilitation care. Since 2013, a disability rehabilitation team led by WHO has provided technical support to the Ministry of Health on rehabilitation management for those affected by polio. The team promotes rehabilitation in the country through an integrated, multidisciplinary approach to ensure optimal functioning of those with a disabling condition so that they can remain as independent as possible, participate in education, be economically productive and fulfil meaningful life roles.

The outbreak was a stark reminder for individuals, as well as for governments, of the need to for continued vigilance to guard against poliovirus until the world is polio free.

Monitoring progress

The WHO Regional Office for Europe is developing a joint monitoring framework for the SDG, Health 2020 and noncommunicable diseases indicators[1] to facilitate reporting in Member States and to provide a consistent and timely way to measure progress. Failure to sustain polio-free status will compromise achieving all Health 2020 targets *(17)*. The following, as proposed in the global indicators framework of the United Nations Economic and Social Council (ECOSOC), will support monitoring progress in sustaining polio-free status *(18)*. In addition, disease-specific reporting by Member State to WHO[2] will support tracking of progress toward polio-specific targets outlined in the European Vaccine Action Plan *(7)*.

ECOSOC indicators

3.8.1. Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health; infectious diseases; noncommunicable diseases; and service capacity and access among the general and the most disadvantaged population).

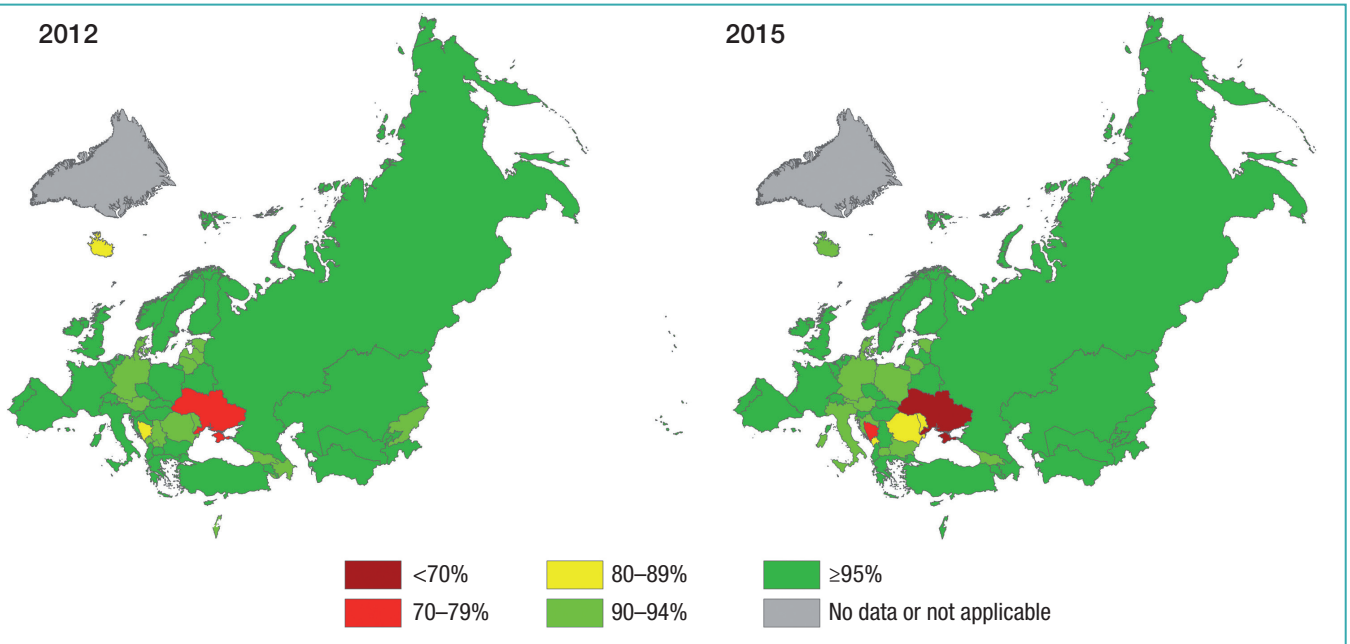
3.b.1. Portion of the target population covered by all vaccines included in the national programme.

Health 2020 core indicators

(5) 1.2.a. Percentage of children vaccinated against measles (1 dose by second birthday), polio (3 doses by first birthday) and rubella (1 dose by second birthday)

(8) 3.1.a. Infant mortality per 1000 live births, disaggregated by sex

Fig. 1. Coverage of the third dose of polio vaccine in the WHO European Region, 2012 and 2015



Source: WHO/UNICEF estimates on national immunization coverage (WUENIC). Data as of 15 July 2017.

Map production: Vaccine-preventable Diseases and Immunization (VPI), Division of Health Emergencies and Communicable Diseases (DEC), World Health Organization Regional Office for Europe.

Disclaimer: The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

[1] EUR/RC67/Inf.Doc./1: joint monitoring framework: proposal for reducing the reporting burden on Member States.

[2] WHO centralized information system for infectious diseases and WHO/UNICEF Joint reporting form.

WHO support to its Member States

The WHO Regional Office for Europe supports Member States by coordinating and monitoring surveillance and immunization activities, providing guidance and helping to ensure political commitment towards sustaining polio-free status. National preparedness is key to ensure that any importation of poliovirus does not lead to an outbreak with ongoing transmission in the Region. Polio outbreak simulation exercises have helped Member States to critically review and update their national action plans for responding to detection of imported wild polioviruses or vaccine-derived polioviruses *(19,20)*. In line with the move towards global certification of polio eradication, the European Region has adopted an approach to evaluate countries based on risk-assessment and evidence of risk mitigation. The WHO Regional Office for Europe also works closely with all Member States to achieve poliovirus containment in line with GAPIII *(9)*.

Partners

WHO collaborates with the following partners to sustain polio-free status:

- Bill and Melinda Gates Foundation, United States
- Canadian International Development Agency
- Centers for Disease Control and Prevention, United States (CDC)
- European Centre for Disease Prevention and Control
- GAVI Alliance
- Lions Clubs International
- Rotary International
- UNICEF
- United States Agency for International Development.

Resources

- Global vaccine action plan
  http://apps.who.int/iris/bitstream/10665/78141/1/9789241504980_eng.pdf?ua=1
- Polio eradication and endgame strategic plan 2013–2018
  http://polioeradication.org/wp-content/uploads/2016/07/PEESP_EN_A4.pdf
- EVAP 2015–2020
  http://www.euro.who.int/__data/assets/pdf_file/0007/255679/WHO_EVAP_United Kingdom_v30_WEBx.pdf?ua=1

Key definitions

- **Wild poliovirus.** Infectious virus that invades the nervous system and can cause paralysis or death.
- **Circulating vaccine-derived poliovirus.** Virus with significant genetic changes from the weakened virus originally contained in oral polio vaccine, for which there is evidence of person-to-person transmission in the community.
- **Global Polio Eradication Initiative.** A public–private partnership led by national governments with a goal to eradicate polio worldwide, with five core partners: WHO, Rotary International, CDC, UNICEF and the Bill and Melinda Gates Foundation.

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