

SURVEILLANCE REPORT

Annual Epidemiological Report for 2016

Poliomyelitis

Key facts

- The WHO European Region was declared polio-free in 2002. Neither wild-type nor vaccine-type viruses were notified in the WHO European Region in 2016, but the risk of importation and subsequent transmission remain high in some countries.
- The most recent polio outbreaks in the EU/EEA area were in 2001 (three polio cases among Roma children in Bulgaria) and 1992 (outbreak in the Netherlands in a religious community opposed to vaccination).
- Inactivated poliovirus vaccines (IPV) are used in all EU/EEA countries. A fully immunised population is protected against disease that may be caused by both wild and vaccine-derived polioviruses.
- Imported wild-type and vaccine-type polioviruses still remain a threat to unvaccinated people in the EU/EEA. Maintaining high vaccination coverage in all population groups and continued acute flaccid paralysis (AFP) surveillance remain the most important tools for keeping Europe polio-free. If justified, supplementary environmental surveillance in specific populations may provide additional information.
- A polio Public Health Emergency of International Concern (PHEIC) was declared by the International Health Regulations (IHR) Emergency Committee in May 2014 and is reviewed at three-month intervals. Polio remained a PHEIC throughout 2016 and updates are published at quarterly intervals.

Methods

This report is based on data for 2016 retrieved from The European Surveillance System (TESSy) on 21 May 2018. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

For a detailed description of methods used to produce this report, please refer to the *Methods* chapter [1].

An overview of the national surveillance systems is available online [2].

Thirty EU/EEA Member States report data on polio to ECDC on an annual basis and 25 of them do so in accordance with the 2008 or 2012 EU case definitions [3]. All Member States report data from comprehensive surveillance systems with national coverage.

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Member States of the WHO Regional Office for Europe submit reports on the status of their national polio eradication programme to WHO on an annual basis [4]. The last update was in June 2017 [5]. The following risk factors for reintroduction and transmission after importation are assessed: health system, routine immunisation coverage, presence of high-risk groups or pockets of susceptible individuals, surveillance indicators and existence of a preparedness plan.

Epidemiology

For 2016, no cases of poliomyelitis were reported by any of the 30 EU/EEA countries.

Discussion

Europe has remained polio-free since 2002. The latest assessment by the European Regional Certification Commission for Poliomyelitis Eradication (RCC) concluded that there was no wild poliovirus transmission in the WHO European Region in 2016, but the risk of importation and subsequent transmission remains high in some countries due to suboptimal programme performance, including low population immunity [5]. The RCC also identified issues that threatened the future polio-free status of the region and proposed actions to be taken by Member States and the WHO Regional Office for Europe to reduce the risk of polioviruses circulating in the region. The RCC discussed the detection of vaccine-derived poliovirus type 2 (VDPV2) in the Russian Federation in 2016 and circulating vaccine-derived poliovirus (cVDPV) type 1 in Ukraine in 2015, subsequent response activities that halted transmission and the decline in vaccine coverage and quality of poliovirus surveillance in certain countries.

While two countries in the WHO Regional Office for Europe (Bosnia and Herzegovina and Romania) were considered at high risk of establishing substantial poliovirus transmission in the event of reintroduction, the current situation in Ukraine remains of particular concern. Ukraine was considered no longer infected by cVDPV, but remains vulnerable to international spread, according to a 22 August 2016 statement by the 10th International Health Regulations (IHR) Emergency Committee regarding the international spread of poliovirus [6]. Supplementary immunisation activities were conducted in Ukraine following the detection of cVDPV1 strains [7].

Globally, in 2016, 37 wild poliovirus cases type 1 (WPV1) were reported from three countries: Pakistan (20), Afghanistan (13) and Nigeria (4). This represented half of the cases reported in 2015 [8]. After more than two years without the detection of wild polio in Nigeria, three laboratory-confirmed WPV1 cases with onset between July and August 2016 were reported in the northern state of Borno. A regional outbreak response in Nigeria was implemented that also included neighbouring countries [9,10].

Naturally circulating WPV2 was declared globally eradicated in September 2015. No case due to WPV3 has been detected since 10 November 2012 [11].

The number of AFP cases caused by cVDPV declined globally in 2016 as well, with just five cases from: Lao People's Democratic Republic (3), Pakistan (1) and Nigeria (1) [12].

The April 2016 meeting of the Strategic Advisory Group of Experts on immunisation (SAGE) presented the globally coordinated withdrawal of the type 2 component in oral polio vaccine (OPV) – also referred to as the 'tOPV to bOPV switch', following the declaration that WPV2 had been eradicated [13]. The removal of OPV2 was the first stage in the longer-term cessation of all types of OPV, which will be completed when all WPV have been globally certified as eradicated.

Following the switch, highly sensitive surveillance for all polioviruses continued, including for type 2, and outbreak response capacity was maintained, including ensuring the supply and management of monovalent OPV type 2 (mOPV2). Furthermore, the year 2016 saw a continued alarming drop in the supply of IPV, necessitating the careful management of global supplies [14].

The risk of reintroduction and establishment of the virus in Europe exists as long as there are non-vaccinated or under-vaccinated groups in European countries and poliomyelitis is not eradicated [15]. The importation of polioviruses through faecal excretion remains a potential threat. In order to avoid vaccine-associated paralytic polio (VAPP) and cVDPVs, the new endgame strategy for polio eradication includes sequential oral polio vaccine withdrawal, starting with Sabin type 2 strains [13].

Public health implications

A polio Public Health Emergency of International Concern (PHEIC) was declared by the IHR Emergency Committee in May 2014 and is reviewed at quarterly intervals. Polio remained a PHEIC throughout 2016 and updates were published at quarterly intervals.

The risk of transmission following importation remains high in some countries because transmission after reintroduction may occur if pockets of susceptible people exist. Inactivated poliovirus vaccines are used in all

EU/EEA countries. Vaccination coverage levels in the EU/EEA can be considered satisfactory as a whole (>90% for three doses of either IPV or OPV) and can explain the absence of WPV circulation in the region so far, but vigilance needs to remain high. Unvaccinated population pockets should be identified and targeted actions to increase vaccination coverage in these populations should be immediately addressed in accordance with national and WHO guidelines. High immunisation coverage in all population groups is essential and will also provide herd immunity to still susceptible individuals [16].

Maintaining high vaccine coverage and continued clinical and, if indicated, environmental surveillance remain the most important tools for keeping Europe polio-free.

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