Poliomyelitis

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Key facts

- The WHO European Region was declared polio-free in 2002. There was neither wild-type nor vaccine-type transmission in the WHO European Region in 2014, but the risk of importation and subsequent transmission remain high in some countries.
- The most recent polio outbreaks in what today constitutes the EU/EEA were in 2001 (three polio cases among Roma children in Bulgaria [1]) and 1992 (outbreak in the Netherlands in a religious community opposed to vaccination [2]).
- Inactivated poliovirus vaccines are used in all EU/EEA countries, except Poland where live oral poliovirus vaccine (OPV) is still used for the fourth dose. Wild-type polioviruses can cause natural disease, while live attenuated polio vaccine viruses may cause vaccine-associated polio paralysis (VAPP), although the risk is very low.
- In 2014, poliomyelitis remained endemic in three countries – Nigeria, Afghanistan and Pakistan [3].
- Imported wild-type and vaccine-type polioviruses still remain a threat to unvaccinated people in the EU/EEA. Maintaining high coverage in all population groups and continued clinical and/or environmental surveillance remain the most important tools for keeping Europe polio-free.

Methods

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• In 2014, no cases of poliomyelitis disease were reported in any of the 30 reporting EU/EEA countries. All countries reported zero cases.

• 25 out of 30 Member States report data on polio in accordance with the 2008 or 2012 EU case definition (Commission Implementing Decision 2012/506/EU of 8 August 2012 of the European Parliament and of the Council).

• All Member States report data from comprehensive, passive surveillance systems with national coverage. For a summary of surveillance system characteristics, please refer to Annex 1.

• There was no report from Liechtenstein.

Epidemiology

Member States of the WHO European Region submit reports on the status of their national polio eradication programme to WHO on an annual basis [4]. 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.

On 9–10 June 2015, The European Regional Certification Committee for Poliomyelitis Eradication (RCC) reviewed the reports on the national polio eradication programme of all countries in the WHO European Region [5].

The RCC concluded, based on available evidence, that there was no wild poliovirus or vaccine-derived poliovirus transmission in the WHO European Region in 2014, but the risk of importation and subsequent transmission remains high in some countries. 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 Regional Office for reducing the risk of polioviruses circulating in the Region.

While three Member States (Bosnia and Herzegovina, Romania and Ukraine) were considered to be at high risk of establishing substantial poliovirus transmission in the event of reintroduction, the current situation in Ukraine is of particular concern. If wild poliovirus were to be introduced into Ukraine, the RCC has no doubt that the consequence would be a significant disease outbreak, threatening the polio-free status of the European Region and presenting a significant setback to the Global Polio Eradication Initiative.

Threats description up to 15 December 2015

On 5 May 2014 [6], WHO declared the international spread of wild poliovirus in 2014 a Public Health Emergency of International Concern (PHEIC) following the confirmed circulation of wild poliovirus in several countries and the documented exportation of wild poliovirus to other countries. On 26 November 2015 [7], the Temporary Recommendations in relation to PHEIC were extended for another three months. WHO recently declared wild poliovirus type 2 eradicated worldwide.

Wild poliovirus transmission has been at the lowest level ever, with fewer cases reported from fewer countries than ever before. As of 15 December 2015, wild poliovirus cases were reported from only two countries in 2015: Pakistan (49 cases) and Afghanistan (17 cases), compared with 322 cases from nine countries during the same period in 2014.

Twenty-three cases of circulating vaccine-derived poliovirus (cVDPV) were reported to WHO in 2015, compared with 48 for the same period in 2014. The cases this year are from Madagascar (10 cases), Laos (5), Ukraine (2), Pakistan (2), Nigeria (1), Myanmar/Burma (2) and Guinea (1).

On 28 August 2015, two cases of paralytic poliomyelitis caused by circulating vaccine-derived poliovirus type 1 (cVDPV1) were confirmed in Ukraine [8]. The genetic similarity between the isolates indicates active transmission of cVDPV1. Both cases were from the Zakarpatskaya oblast [region] in south-western Ukraine, which borders Romania, Hungary, Slovakia and Poland. Supplementary immunisation activities were initiated in response to the outbreak.

Discussion

Europe has remained polio-free since 2002. The latest assessment by the European RCC of Poliomyelitis Eradication concludes that there was no wild poliovirus or vaccine-derived poliovirus transmission in the WHO European Region in 2014, but the risk of importation and subsequent transmission remains high in some countries.

Polio remains endemic in two countries: Afghanistan and Pakistan. It is of importance to note that there were strong efforts by countries in Africa to eradicate polio: no cases of wild poliovirus have been reported in Africa for more than twelve months, and Nigeria interrupted the endemic transmission of wild poliovirus.

The risk of importation to Europe exists as long as there is polio circulating in the world. The importation of polioviruses through faecal excretion remains a potential threat. In order to avoid cases of polio due to vaccine-associated paralytic polio (VAPP) and circulating vaccine-derived polioviruses (cVDPVs), the new endgame strategy for polio eradication includes sequential oral polio vaccine withdrawal, starting with Sabin type 2 strains [9].

The September 2015 meeting of the Strategic Advisory Group of Experts on immunisation (SAGE) confirmed the globally coordinated withdrawal of the type 2 component in OPV – also referred to as the 'tOPV to bOPV switch' – for April 2016 [10].

Public health conclusions

The risk of transmission following importation remains high in some countries, because transmission after reintroduction may occur if pockets of susceptible people exist. 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; however, vigilance needs to remain high. Unvaccinated pockets should be identified, and targeted actions to increase vaccination coverage in these populations should to be immediately addressed. High immunisation coverage in all population groups is essential and will also provide herd immunity to still susceptible individuals.

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

Additional information

ECDC Surveillance Atlas of Infectious Diseases

4 September 2015: ECDC rapid risk assessment on polio outbreak in Ukraine. Available from: http://ecdc.europa.eu/en/publications/Publications/Poliomyelitis-Ukraine-rapid-risk-assessment-September-2015.pdf

ECDC poliomyelitis factsheet for health professionals. Available from: http://ecdc.europa.eu/en/healthtopics/polio/Pages/health-professionals.aspx

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Annex

Table. Poliomyelitis, surveillance systems overview, 2014

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* The European Surveillance System (TESSy) is a system for the collection, analysis and dissemination of data on communicable diseases. EU Member States and EEA countries contribute to the system by uploading their infectious disease surveillance data at regular intervals.