

Outbreak of poliomyelitis in Tajikistan in 2010: risk for importation and impact on polio surveillance in Europe?

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On 23 April 2010, the World Health Organisation announced the confirmation of wild poliovirus serotype 1 (WPV1) in seven samples from children with Acute Flaccid Paralysis in Tajikistan, in the context of a multi-district cluster starting in December 2009. As of 28 April, 32 of 171 reported cases were laboratory-confirmed and most closely related to virus from Uttar Pradesh, India. This outbreak demonstrates the high risk that still exists for importation of wild poliovirus into polio-free regions.

On 23 April 2010, the World Health Organisation announced the confirmation of wild poliovirus serotype 1 (WPV1) in seven samples obtained from children with Acute Flaccid Paralysis (AFP) detected in Tajikistan in the context of a multi-district AFP cluster starting in December 2009.

Poliomyelitis (polio) was eliminated in the WHO European Region and the Region was certified polio-free in 2002. Since then, considerable efforts of national authorities and of the international public health community have sustained the polio-free status for the 880 million population of the Region. The last indigenous case of wild poliovirus infection in the WHO European Region was reported in Turkey in 1998 [1]. However, poliovirus imported from polio endemic countries remains a threat. In 1996, following migration resulting from the opening of borders in 1992, Albania reported 138 laboratory confirmed cases of WPV1 infection, including 16 deaths, with 24 confirmed polio cases detected in the bordering United Nations administered Province of Kosovo [2]. The main age group affected was the group of 10 to 34 years-old which accounted for 79% of cases and the lowest incidence was reported among children aged one to nine years. Among those with known vaccination status, 93% had received at least three doses of oral polio vaccine (OPV). The last outbreak in the EU, due to imported WPV3, occurred in the Netherlands in 1992

and 1993 in a community objecting to vaccination [3]. A total of 71 individuals were paralysed and two deaths were reported. The last cases of imported wild poliovirus in the WHO European Region were reported in 2001. These occurrences were associated with WPV1 originating from India, with three Roma children in Bulgaria and one non-paralytic case in Georgia [4]. These cases related to importation did not result in indigenous transmission, defined by the WHO as uninterrupted transmission occurring for more than 12 months.

Tajikistan, with a 6.6 million population, is one of the five Central Asian Republics and borders Uzbekistan, Kyrgyzstan, China and Afghanistan. Two outbreaks of polio were registered in Tajikistan in the 1990s, with 111 and 26 cases of poliomyelitis reported to the WHO in 1991 and 1994, respectively [5]. The last clinically confirmed case of poliomyelitis observed in Tajikistan was in 1997 [1,6].

The reported vaccine coverage with three doses of OPV in Tajikistan in 2008 was 87% [7], which is below the WHO target of over 90% [8]. In 2007, the national health authorities in Tajikistan conducted an immunisation campaign against polio, targeting children less than three years old in the areas bordering Afghanistan.

At the beginning of April 2010, the WHO Country Office in Tajikistan was informed of an increase in AFP cases in multiple contiguous districts. On average, Tajikistan reports 35-40 AFP cases annually with peaks in July and October. As of 28 April, the Ministry of Health of Tajikistan reported 171 AFP cases to WHO, with a sharp increase in the past two weeks, including 12 deaths and 32 cases of laboratory confirmed WPV1 infection; the tests were conducted at the WHO regional reference laboratory for polio, based at the Chumakov Institute of Poliomyelitis and Viral Encephalitis, Moscow, Russian Federation [9]. Genetic sequencing has determined that the poliovirus is most closely related to virus from

Uttar Pradesh, India. 136 (80%) of the AFP cases were in children aged under five years (age range 0-17 years). Cases were mainly reported from districts bordering Afghanistan and Uzbekistan. The Uzbek national authorities are investigating three cases of AFP.

Following the confirmation of WPV₁ in Tajikistan, three rounds of nationwide immunisation with monovalent OPV type 1 are planned for all children aged five years or younger (1.1 million children) with a two week interval between each round, starting the first round on 4 May. In addition, there are ongoing efforts to strengthen AFP surveillance. Upon the request of the Ministry of Health of Tajikistan, WHO deployed a multi-disciplinary team of clinical, epidemiological, and virological experts, to investigate the event and assist national authorities in planning and implementing the necessary public health measures. WPV₁ and WPV₃ activity is currently recorded in Afghanistan. As of 20 April, Afghanistan reported eight cases of poliomyelitis (one WPV₁ and seven WPV₃) for the year 2010. The onset of disease in the most recent case was on 8 April. Since 2002, no cases of wild poliovirus infection have been detected in northern Afghanistan, areas with recognised high quality AFP surveillance. Pakistan reported 13 cases of polio due to WPV₁ and WPV₃ so far in 2010 [8]. Polio is still endemic in four countries worldwide; besides Afghanistan and Pakistan these are India and Nigeria [8].

The movement of Tajik nationals in the European Union (EU) is limited as less than 2,200 Schengen visas were issued in 2009. Considering these small numbers of Tajik nationals coming to the Schengen area, the risk of spread of WPV₁ associated with the ongoing outbreak in Tajikistan within the EU is considered to be limited. However, importation of cases cannot be excluded, and high levels of vaccine coverage with three doses of polio vaccine are needed to ensure that importation into the EU will not occur. Pockets of susceptible populations do exist in the EU and the risk of disease in these groups is high if the virus is introduced in these communities. Avoiding complacency and maintaining good AFP and/or enterovirus surveillance in the EU to comply with WHO targets is of utmost importance to prevent WPV importation and further spread, particularly considering that 90% of cases associated with WPV infection do not have clinical symptoms. The need to maintain vigilance, implement adequate measures to detect and prevent re-importation of polio into polio-free regions is also stressed in a paper by H Nokleby *et al.* in this issue of *Eurosurveillance* [10].

While AFP surveillance is considered the gold standard for certification purposes, other surveillance strategies and sources of data have been accepted by the WHO European Regional Certification Commission of the Eradication of Poliomyelitis that enable the detection, rapid reporting, and investigation of any paralytic polio cases. This applies to countries that have been non-endemic for a long time, with high levels

of sanitation and strong health systems. Accepted alternative surveillance strategies include enterovirus surveillance and/or environmental surveillance for polioviruses. Member states of the WHO European Region conduct a combination of AFP, enterovirus, and/or environmental surveillance. Forty-three of the 53 member states in the WHO European Region conduct AFP surveillance, including 23 of the 29 EU/EEA countries (Liechtenstein is not reporting to WHO), 41 have implemented enhanced enterovirus surveillance while seven are doing environmental surveillance through sewage systems.

A region is certified as polio-free if no indigenous poliomyelitis cases are identified for a period of more than three years in the presence of high quality, certification-standard surveillance. The current outbreak in Tajikistan represents the first introduction of wild poliovirus in the WHO European Region since it has been certified polio-free in 2002. Therefore, strong measures are needed to protect the status. The present situation calls for strong political and financial commitment from all member states to ensure the WHO European Region sustains its polio-free status and that global eradication of polio will be reached by 2012.

Although the Region is considered at high-risk for importation of wild poliovirus due to ongoing global travel, trade, and migration, especially with the four polio endemic countries, the current poliomyelitis outbreak in Tajikistan does not substantially affect the risk for further spread to the EU Member States at this time. It is important to note that WHO does not recommend restrictions on international travel and trade in case of the detection of wild poliovirus but emphasizes that standard recommendations regarding vaccination of travellers to and from a polio-affected country apply until a polio outbreak is interrupted.

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