



# Suspected outbreak of poliomyelitis in Syria: Risk of importation and spread of poliovirus in the EU

23 October 2013

## Main conclusions and recommendations

This cluster of cases of acute flaccid paralysis among Syrian citizens increases the risk for the importation of wild polio virus to the EU/EEA and further re-establishment and transmission in the Member States.

Recommendations:

- Countries hosting Syrian citizens in designated areas (camps) should assess the level of transmission of wild poliovirus among them. Such assessments can be carried out through enhanced clinical surveillance, environmental surveillance, and systematic collection of stool samples from symptomatic and asymptomatic persons.
- EU Member States receiving refugees and asylum seekers from Syria should assess their vaccination status on arrival and provide polio vaccination and other vaccinations as needed.
- Regional and international efforts to assess the risk and provide vaccination and other public health services in Syria and to Syrian refugees hosted by neighbouring countries should be supported.
- This situation stresses the need for Member States to consider implementing the recommendations made in the ECDC risk assessment of wild-type poliovirus transmission in Israel [2] (see Annex).
- Countries should review their national preparedness plans, and ensure that items such as a framework and responsibilities for outbreak response, enhanced activities and reporting timelines, and vaccine of choice for outbreak response are in place.

## Source and date of request

European Commission, 19 October 2013.

## Public health issue

The potential risk to the EU related to the cluster of cases of acute flaccid paralysis (AFP) with onset in early October 2013 reported from Deir Al Zour province in eastern Syria.

## Consulted experts

ECDC staff:

Kaja Kaasik Aaslav, Elizabeth Bancroft, Denis Coulombier, Camilla Croneld, Niklas Danielsson, Romit Jain, Birgitta de Jong, Peter Kreidl, Lucia Pastore-Celentano, Edit Szegedi and Emma Huitric.

## Event background information

On 19 October 2013, WHO announced a 'hot' cluster of AFP in Deir Al Zour province in Syria, located 250 km from Damascus in the east of the country along the Iraqi border. The cluster consists of 22 cases and the age distribution was five cases under one year old, 13 cases one-to-two years old and four cases over two years old [1]. The first cases were detected in early October. Initial tests by the national reference laboratory in Damascus indicated wild poliovirus in two cases. Samples have been sent to the regional reference laboratory of the Eastern Mediterranean Region of WHO for confirmation. According to WHO, the Syrian Ministry of Health has confirmed that they are addressing this event as a cluster of 'hot' AFP cases, while they wait for final laboratory confirmation. A rapid response is being planned across the country.

Syria has not had an indigenous case of polio since 1995 [3]. The last laboratory-confirmed imported case was reported in 1999. No polio cases have been confirmed in Syria since.

Immunisation against polio has been mandatory in Syria since 1964 and the reported coverage with three doses of oral polio vaccine (OPV) was above 95% in children under one year of age between 2002 and 2010 [4]. Vaccination coverage for all vaccine-preventable diseases, including polio, has declined since 2010 and the estimated coverage with OPV3 in the cohort aged 12–23 months in 2012 was 52% [5]. AFP surveillance has been implemented since 1993 and the surveillance indicators have been reported to be satisfactory since 1996 [3].

According to several reports, including a recent article in *The Lancet*, the health situation in Syria has progressively deteriorated in recent years due to the ongoing conflict, with more than half of the country's public hospitals and 78 per cent of ambulances damaged [6]. In some areas, up to 70 per cent of health workers have fled. There has been dramatic increase in outbreaks of measles, typhoid, leishmaniasis, acute diarrhoea and hepatitis.

Due to the current situation, Syria is at high risk for polio and other vaccine-preventable diseases. WHO has intensified the surveillance alert in the region in search of additional potential cases. In neighbouring countries, extra immunisation activities are being planned.

## Humanitarian situation in Syria

According to the Office of the United Nations High Commissioner for Refugees, there are currently 2 050 860 registered Syrian refugees. Of these, 18.5% are children under age of five; 129 315 people are still waiting for registration [7].

The number of refugees seeking asylum in the EU has been constantly increasing since the start of the conflict. The latest available official data are published by the Migration Policy Centre that states: 'in 2011, 8 920 Syrians applied for asylum within EU borders, while in the first three quarters of 2012 applications increased slightly, reaching a total of 11 573. Only 1 490 irregular entries of Syrians were recorded during the last three quarters of 2011, which rose to 2 739 in the first two quarters of 2012.' [8] The same report estimates that 112 000 Syrians were living in the EU prior to the conflict in 2011. The number of Syrian refugees accelerated dramatically in recent months, with over one million refugees in the first five months of 2013 alone [9]. More than half of the registered refugees are children and three quarters are living with local host families and communities in both urban and rural areas.

Since 2012, there has been an increase of the number of Syrians detected illegally entering the EU [10]. Syrians were mostly reported to enter the EU from the Aegean Sea and at the Bulgarian land border with Turkey. The majority of the undocumented migrants were either men travelling alone or families with the end destination in Germany and Sweden.

## Surveillance for polio

In most countries, surveillance of polio cases is based on surveillance for AFP and the proper laboratory tests for these cases [11]. AFP surveillance can work well in areas with limited resources and a high level of polio; for example, the current situation in Syria was detected by AFP surveillance. However, since the polio virus only causes clinical illness in approximately 1/100–1/1 000 persons infected, AFP surveillance is a blunt surveillance tool because the virus may have been transmitting quite widely in a community before clinical cases are detected. Environmental surveillance (detecting poliovirus in sewage water) may be a more sensitive tool to detect the transmission of poliovirus up to five weeks before clinical cases occur and when there may still be time to intervene to prevent disease [12]. Detecting poliovirus in stool samples may be used both for the diagnosis of disease in clinically compatible cases and for the surveillance of asymptomatic transmission in a community. However, environmental and stool surveillance require access to specialised laboratories and there are no accepted norms for the quantity or frequency of testing that should be used for surveillance purposes.

Only four of the 20 EU/EEA Member States that conduct AFP surveillance meet the minimum levels for detecting possible polio cases [13]. The 10 other Member States use enterovirus surveillance and/or environmental

surveillance<sup>1</sup>. According to the European Regional Certification Commission for poliomyelitis Eradication (RCC), in 2012 only two of the then 30 EU/EEA Member States were assessed as having 'high' quality surveillance; 12 had 'good' surveillance; 15 had 'average' surveillance; and one had 'low' quality surveillance [13,14]. However, much of that assessment was based on limited information obtained from the Member States and the RCC expressed concern over the sub-optimal state of surveillance in many countries [14].

## ECDC threat assessment for the EU

The probability is very high that the cluster of cases of AFP in Deir Al Zour province in Syria is caused by wild-type poliovirus, and this risk assessment is based on the assumption that wild poliovirus will be confirmed. Confirmation of the polio outbreak in Deir Al Zour province would signal widespread transmission of poliovirus in Syria and possibly in the areas bordering Syria.

The likelihood of poliovirus spreading from Syria to neighbouring countries hosting Syrian refugees is high.

Large numbers of people are leaving Syria and it is expected that the number of asylum seekers, refugees and undocumented migrants entering the EU will probably continue to increase as the conflict evolves. If poliovirus is indeed circulating in Syria, it should be assumed that a proportion of Syrian refugees are also carrying the virus. The risk will be highest among children born in Syria since 2011 because of the interruptions to vaccination services. Further, refugees from Syria are more likely to mix with under-vaccinated populations living in poor sanitary conditions.

## Conclusion and recommendations

This cluster of cases of AFP among Syrian citizens increases the risk for the importation of wild poliovirus to the EU/EEA and further re-establishment and transmission in Member States.

Countries hosting Syrian citizens in designated areas (camps) should assess the level of transmission of wild poliovirus among them. Such assessments can be carried out through enhanced clinical surveillance (e.g. AFP surveillance) and systematic collection of stool samples from symptomatic and asymptomatic persons.

EU Member States receiving refugees and asylum seekers from Syria should assess their vaccination status on arrival and provide polio vaccination and other vaccinations as needed.

Regional and international efforts to assess the risk and provide vaccination and other public health services in Syria and to Syrian refugees hosted by neighbouring countries should be supported.

This situation stresses the need for Member States to consider implementing the recommendations made in the ECDC risk assessment of wild-type poliovirus transmission in Israel [2] (see Annex).

These include:

- strengthening AFP surveillance, intensifying enterovirus surveillance, and intensifying environmental surveillance if already used
- reviewing national preparedness plans, and ensuring that items such as a framework and responsibilities for outbreak response, enhanced activities and reporting timelines, and vaccine of choice for outbreak response are in place.

---

<sup>1</sup> Note: Liechtenstein has not been included in this analysis.

## References

1. WHO. Disease outbreak news: Report of suspected polio cases in the syrian arab republic 2013 [cited 2013 19 October]. Available from: [http://www.who.int/csr/don/2013\\_10\\_19\\_polio/en/index.html](http://www.who.int/csr/don/2013_10_19_polio/en/index.html).
2. European Centre for Disease Prevention and Control. Wild-type poliovirus 1 transmission in israel – what is the risk to the EU/EEA? Stockholm: ECDC; 2013. Available from: <http://ecdc.europa.eu/en/publications/Publications/polio-risk-assessment-transmission-in-Israel.pdf>
3. World Health Organization Regional Office for the Eastern Mediterranean. Polio eradication initiative - syrian arab republic 2013 [cited 2013 22 October]. Available from: <http://www.emro.who.int/polio/countries/syrian-arab-republic.html>.
4. World Health Organization Regional Office for the Eastern Mediterranean. Regional health observatory: Country statistics for syrian arab republic 2013 [cited 2013 22 October]. Available from: <http://rho.emro.who.int/rhodata/?theme=country&vid=19200>.
5. WHO. WHO vaccine-preventable diseases: Monitoring system. 2013 global summary: Syrian arab republic 2013 [cited 2013 22 October ]. Available from: [http://apps.who.int/immunization\\_monitoring/globalsummary/estimates?c=SYR](http://apps.who.int/immunization_monitoring/globalsummary/estimates?c=SYR).
6. Coutts A, Fouad FM. Response to syria's health crisis--poor and uncoordinated. *Lancet*. 2013 Jun 29;381(9885):2242-3. PubMed PMID: 23819155.
7. UNHCR. Syria regional refugee response: Inter-agency information sharing portal 2013 [cited 2013 22 October]. Available from: <http://data.unhcr.org/syrianrefugees/regional.php>.
8. Philippe Fargues CF. The european response to the syrian refugee crisis – what next? MPC RR 2012/14, Robert Schuman Centre for Advanced Studies, San Domenico di Fiesole (FI): European University Institute; 2012.
9. UNHCR. Stories from syrian refugees: Discovering the human faces of a tragedy 2013 [cited 2013 22 October]. Available from: <http://data.unhcr.org/syrianrefugees/syria.php>.
10. Frontex. Fran quarterly quarter 2. April–June 2013. Available from: [http://www.frontex.europa.eu/assets/Publications/Risk\\_Analysis/FRAN\\_Q2\\_2013.pdf](http://www.frontex.europa.eu/assets/Publications/Risk_Analysis/FRAN_Q2_2013.pdf)
11. WHO. WHO–recommended standards for surveillance of selected vaccine-preventable diseases. Geneva; 2008. Available from: [http://whqlibdoc.who.int/hq/2003/who\\_v&b\\_03.01.pdf](http://whqlibdoc.who.int/hq/2003/who_v&b_03.01.pdf)
12. Dowdle WR, Birmingham ME. The biologic principles of poliovirus eradication. *The Journal of infectious diseases*. 1997 Feb;175 Suppl 1:S286-92. PubMed PMID: 9203732.
13. WHO. Classification of AFP cases, surveillance performance and weekly reporting to WHO Euro by country, 2012-2013, WHO European Region 2013. Available from: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0007/199537/EpiData6-2013-Eng.pdf](http://www.euro.who.int/_data/assets/pdf_file/0007/199537/EpiData6-2013-Eng.pdf)
14. WHO. Report of the 27th meeting of the European Regional certification commission for poliomyelitis eradication: Copenhagen, Denmark 30–31 May, 2013: WHO Regional Office for Europe; 2013. Available from: [http://www.euro.who.int/\\_data/assets/pdf\\_file/0016/200752/Report-of-the-27th-Meeting-of-the-European-Regional-Certification-Commission-for-Poliomyelitis-Eradication.pdf](http://www.euro.who.int/_data/assets/pdf_file/0016/200752/Report-of-the-27th-Meeting-of-the-European-Regional-Certification-Commission-for-Poliomyelitis-Eradication.pdf).

## Annex

Recommendations published in the ECDC risk assessment of wild-type poliovirus transmission in Israel, 25 September 2013.

- EU/EEA Member States should give high priority to the assessment of polio vaccination uptake at national, subnational and local level, and to the identification of vulnerable and under-vaccinated populations.
- Countries where the overall national vaccination coverage is below 90% should increase efforts towards improving vaccination coverage under the national schedule.
- The highest level of risk is posed by the proximity of low- or unimmunised population clusters to large populations vaccinated using IPV-only schemes. However, suboptimal hygiene and crowded living conditions may also play a role in facilitating the spread of infection. In particular, religious groups having contact with Israel, migrant residents visiting family and friends in countries where WPV is circulating, and vulnerable groups living in poor sanitary conditions are key risk groups. Countries with groups living in such conditions should urgently consider implementing targeted action and improving vaccine coverage in these groups.
- EU/EEA Member States should recommend that all travellers to areas where WPV is in circulation ensure their polio vaccination status is up-to-date.
- Member States not meeting the polio surveillance requirements established by the Regional Certification Commission for Polio Eradication should urgently consider strengthening their surveillance systems, and to at least comply with the minimum AFP surveillance standards if this is the only surveillance system in place.
- Member States with pockets of unvaccinated individuals should consider strengthening or establishing environmental and enterovirus surveillance in these areas, as a complement to AFP surveillance.
- Member States should consider assessing their current laboratory capacity for polio virus detection.
- The role of environmental and enterovirus surveillance should be further discussed at the EU/EEA-level with a view to agreeing on common standards and indicators. ECDC and the Member States, in close collaboration with WHO, should engage in the development of guidance for the establishment of environmental and enterovirus surveillance.
- Member States identifying positive environmental or enterovirus samples should be prepared to use WHO guidelines to assess WPV circulation in the affected areas.
- Member States that have not yet developed national response plans should develop these plans and consider requesting support from ECDC and WHO.
- In the event that positive human samples are detected, Member States should implement their national poliomyelitis response plan. In the unfortunate event that a national plan is not yet available, an emergency plan should be developed on the basis of WHO guidance and recommendations.
- Member States should be undertaking exercises to test their poliomyelitis response plans.
- Operational and contingency plans are needed in the EU/EEA for the possible mobilisation of IPV and OPV stockpiles in case of evidence of WPV transmission.
- The availability of poliovirus vaccines to be used in the context of an outbreak should be assessed.