

BRIEF REPORT

# Polio in Syria: Problem still not solved

Ahmad Al-Moujahed<sup>1,2</sup>, Fares Alahdab<sup>3</sup>, Heba Abolaban<sup>2</sup>, Leo Beletsky<sup>4,5</sup>

<sup>1</sup>Department of Ophthalmology, Harvard Medical School, Massachusetts Eye and Ear Infirmary, <sup>2</sup>Department of Health Sciences, Bouvé College of Health Sciences, Northeastern University, Boston, MA, <sup>3</sup>Mayo Evidence-based Practice Center, Kern Center for Science of Healthcare Delivery, Knowledge Synthesis Program, Mayo Clinic, Rochester, MN, <sup>4</sup>Northeastern University School of Law, Bouvé College of Health Sciences, Boston, MA, <sup>5</sup>Division of Global Public Health, UC San Diego School of Medicine, San Diego, CA, USA

Access this article online

Website: [www.avicennajmed.com](http://www.avicennajmed.com)

DOI: 10.4103/ajm.AJM\_173\_16

Quick Response Code:



## ABSTRACT

The reappearance of polio in Syria in mid-2013, 18 years after it was eliminated from the country, manifests the public health catastrophe brought on by the civil war. Among the lessons learned, this outbreak emphasizes the importance of increasing the international financial and logistical support for vaccine and immunization efforts, especially in countries suffering from conflicts. The lack of access to polio accredited laboratory or outright lack of laboratories in settings of conflict should be recognized allowing international surveillance to be strengthened by supplementing the laboratory definition with the clinical definition. In addition, it illustrates the imperative for the United Nations (UN) agencies involved in global health to be able to operate independently from governments during conflicts in order to provide adequate and efficient medical and humanitarian relief for civilians. Proper communicable disease surveillance and control, delivery of vaccinations, and other pivotal healthcare services to these areas require independence from governments and all military actors involved. Moreover, it shows the necessity to adequately support and fund the front-line nongovernmental organizations (NGOs) that are implementing the delivery of medical and humanitarian aid in Syria.

**Key words:** Infectious diseases, Polio, public health, Syria, vaccination, war

The reappearance of polio in Syria in mid-2013, 18 years after it was eliminated from the country, manifests the public health catastrophe brought on by the civil war. Since March 2011, when the peaceful uprising was met with armed violence by the Assad government, public health services have plummeted. Disturbingly, even before 2011, the child immunization rate in Syria for polio was only 83%, as per estimates by the World Health Organization (WHO) and UN Children's Agency (UNICEF).<sup>[1]</sup> The ongoing Syrian conflict, however, has dramatically changed the country's public health profile. Systematic assaults on healthcare in politically unsympathetic areas by the Syrian and Russian governments that have resulted in collapse of the healthcare system in opposition-held territory, destruction of the country's infrastructure, economic shrinkage, severe food and water insecurity, inadequate sanitation, and the insecurity due to the ongoing targeting of civilians by the Syrian government and its allies, to name a few, are

crippling Syria. In opposition-held areas, the healthcare system has suffered destruction and severe damage to hospitals, public health centers, and ambulances, as well as from the deliberate targeting and persecution of healthcare personnel. The emigration of healthcare personnel from both government and nongovernment territory as a result of the conflict has further affected the country's healthcare system. In addition, a severe lack of basic medications and preventative services has ensued, including a sharp decline in the overall vaccination coverage to only 50% in 2015.<sup>[1,2]</sup>

These factors, among others, led to the reemergence of poliomyelitis, a serious infectious disease that may cause permanent paralysis, and the rise of other vaccine-preventable diseases such as measles. In early October 2013, doctors in

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: [reprints@medknow.com](mailto:reprints@medknow.com)

Cite this article as: Al-Moujahed A, Alahdab F, Abolaban H, Beletsky L. Polio in Syria: Problem still not solved. Avicenna J Med 2017;7:64-6.

**Address for correspondence:** Dr. Ahmad Al-Moujahed,  
Massachusetts Eye and Ear Infirmary, 325 Cambridge Street,  
3rd Floor, Boston, MA 02114, USA.  
E-mail: [ahmad\\_moujahed@meei.harvard.edu](mailto:ahmad_moujahed@meei.harvard.edu)

northeastern Syria reported a cluster of 3 acute flaccid paralysis cases. This report was received by the WHO and samples were sent to both the National Laboratory in Damascus and cross-border to Turkey.<sup>[3]</sup> After initial denial of its presence by the Syrian government, these cases were later confirmed to be wild type polio virus type 1 by the help of the United States Centers for Disease Control and Prevention (CDC) and Turkish authorities.<sup>[3,4]</sup> The WHO officially acknowledged the outbreak on October 29, 2013. In May 2014, the WHO declared polio a global health emergency for the first time in the organization's history. It was a substantial challenge to the 25-year-old efforts of Global Polio Eradication Initiative, which had been successful in eliminating polio from Syria in 1995.<sup>[3,4]</sup>

The international reaction to this outbreak consisted of initiating a communications response, a surveillance response, and running nine national vaccination campaigns. Mass Polio Immunization Campaign has covered more than 23 million children across the Middle East. The UN agencies primarily responsible for children health, WHO and UNICEF, coordinated the response in neighboring countries. However, the intransigence of the Syrian government in retaining the authority of the Syrian response - the epicenter of the outbreak - severely complicated the situation and crippled and almost paralyzed these efforts.<sup>[3,5]</sup> As a result, children in some besieged and opposition-controlled areas were devoid of the much-required vaccinations.<sup>[3,5]</sup> The WHO was later criticized for inappropriately detecting and confirming the cases during the war, failure in predicting and preventing this outbreak and the overall inadequate response to the larger health crisis.<sup>[4,5]</sup> Thankfully, this was offset by one of the most remarkable examples in this conflict of the coordinated efforts of Syrian medical personnel working in the nongovernment territory, the Polio Control Task Force (PCTF). The PCTF was formed by eight Syrian and regional nongovernmental organizations (NGOs), including the Syrian American Medical Society (SAMS) and the Assistance Coordination Unit, the humanitarian arm of the political opposition, with the support from the Turkish government.<sup>[3,5,6]</sup> This task force was able to successfully establish immunization facilities, train about 8500 personnel from local communities and deliver vaccines to more than 1.4 million children across seven governorates in northern and eastern Syria, areas inaccessible to WHO, which required permission from the Assad government to support NGOs working in these areas. These efforts resulted in controlling the outbreak.<sup>[3-6]</sup>

The polio outbreak in Syria emphasizes the importance of increasing the international financial and logistical support for vaccine and immunization efforts, especially

in countries suffering from conflicts where many vaccine-preventable diseases can reemerge and become uncontrolled.<sup>[7]</sup> The lack of access to polio accredited laboratory or outright lack of laboratories in settings of conflict should be recognized, allowing international surveillance to be strengthened by supplementing the laboratory definition with the clinical definition.<sup>[8]</sup> In addition, it illustrates the imperative for WHO, UNICEF, and other UN agencies involved in global health to be able to operate independently from governments during conflicts to provide adequate and efficient medical and humanitarian relief for civilians. This is especially critical because Syria is currently governed by more than one healthcare system since it is divided into government controlled areas (GCAs), non-GCAs, semi-autonomous Kurdish areas and those under ISIS. Proper communicable disease surveillance and control, delivery of vaccinations, and other pivotal healthcare services such as safe water, sanitation, and hygiene services, to these areas requires independence from governments and all military actors involved (the principle of neutrality) to gain access and deliver aid according to need (the principle of impartiality). Moreover, it shows the necessity to adequately support and fund the front-line NGOs that are implementing the delivery of medical and humanitarian aid in Syria and to refugee populations in neighboring counties, especially since these local NGOs play an essential role in facilitating healthcare delivery to many parts of Syria. Currently, although Syrian NGOs provide 75% of the support in Syria, these NGOs receive <1% of the international funding.<sup>[9]</sup> These recommendations could also be applied to other countries experiencing similar conflicts, such as Yemen.

This alarming polio outbreak also underscores the critical need to resolve the Syrian conflict, to address the public health crisis and prevent further damage to the healthcare system.

#### **Financial support and sponsorship**

Nil.

#### **Conflicts of interest**

There are no conflicts of interest.

#### **REFERENCES**

1. World Health Organization (WHO). Syrian Arab Republic: WHO and UNICEF Estimates of Immunization Coverage: 2015 Revision; 2015. Available from: [http://www.who.int/immunization/monitoring\\_surveillance/data/syr.pdf](http://www.who.int/immunization/monitoring_surveillance/data/syr.pdf). [Last accessed on 2016 Oct 25].
2. WHO Syria. Situation Report; 15 June, 2014. Available from: [http://www.emro.who.int/images/stories/syria/SituationReport\\_20140615.pdf?ua=1](http://www.emro.who.int/images/stories/syria/SituationReport_20140615.pdf?ua=1). [Last accessed on 2015 Feb 15].
3. Tajaldin B, Almilaji K, Langton P, Sparrow A. Defining polio: Closing

- the gap in global surveillance. *Ann Glob Health* 2015;81:386-95.
4. Coutts AP, Fouad FM. Syria's Raging Health Crisis. New York: The New York Times; 2014. Available from: [http://www.nytimes.com/2014/01/02/opinion/syrias-raging-health-crisis.html?\\_r=0](http://www.nytimes.com/2014/01/02/opinion/syrias-raging-health-crisis.html?_r=0). [Last accessed on 2015 Mar 17].
  5. Sparrow A. Syria's Polio Epidemic: The Suppressed Truth. New York: The New York Review of Books; 2014. Available from: <http://www.nybooks.com/articles/archives/2014/feb/20/syrias-polio-epidemic-suppressed-truth/>. [Last accessed on 2015 Mar 17].
  6. Syrian American Medical Society (SAMS). Medical Success: One Year without Polio in Syria; 30 January, 2015. Available from: <https://www.sams-usa.net/foundation/index.php/component/content/article/2-uncategorised/133-medical-success-one-year-without-polio-in-syria>. [Last accessed on 2015 Mar 17].
  7. Ismail SA, Abbara A, Collin SM, Orcutt M, Coutts AP, Maziak W, et al. Communicable disease surveillance and control in the context of conflict and mass displacement in Syria. *Int J Infect Dis* 2016;47:15-22.
  8. World Health Organization. International Health Regulations: Case Definitions for the Four Diseases Requiring Notification in All Circumstances under the International Health Regulations. Geneva, Switzerland: World Health Organization; 2005. Available from: [http://www.who.int/ihr/Case\\_Definitions.pdf](http://www.who.int/ihr/Case_Definitions.pdf). [Last accessed on 2017 Jan 14].
  9. Els C, Mansour K, Carstensen N. Funding to National and Local Humanitarian Actors in Syria: Between Sub-Contracting and Partnerships. Local to Global Protection; 2016. Available from: [http://www.local2global.info/wp-content/uploads/L2GP\\_funding\\_Syria\\_May\\_2016.pdf](http://www.local2global.info/wp-content/uploads/L2GP_funding_Syria_May_2016.pdf). [Last accessed on 2016 Dec 23].