



# The Brazilian Journal of INFECTIOUS DISEASES

[www.elsevier.com/locate/bjid](http://www.elsevier.com/locate/bjid)



## Letter to the editor

# Pakistan as a major obstacle in global end to poliomyelitis program: background and 2016 update



Dear Editor,

The persistence of polio (polio virus) in Pakistan till date has given rise to serious global public health concerns. Pakistan is one of the two countries (Afghanistan being the second) where the status of polio is still endemic.<sup>1</sup> Even the situation in war stricken Afghanistan has improved efficiently in 2015.<sup>1</sup> Now, Pakistan is ahead of Afghanistan in terms of number of polio cases<sup>1</sup> and onward transmission to other countries.<sup>2,3</sup>

In the past, several factors contributed to the failure of polio virus eradication from the country. The turmoil in Afghanistan since the Russian invasion has affected Afghanistan and its neighbors, particularly Pakistan. The areas of Pakistan in the vicinity of Pak-Afghan border including Federally Administered Tribal Area (FATA) and the northern province Khyber Pakhtunkhwa (KP) have suffered immensely. Consequently, this scenario not only resulted in cross border movement of people due to porous nature of the border contributing to the spread of infection between the two countries but also caused inaccessibility of health monitoring organizations to those areas. Further, there is lack of proper knowledge about the infection in dwellers of the region. Still, many people assume that the provided anti-polio vaccine may result in reproductive sterility and infertility. Other may deny it by presenting the argument that the vaccine induces polio in healthy individuals. This concern has developed due to misconception regarding the vaccine-derived polio cases.<sup>1</sup> Overall, these circumstances have made it very difficult to carry on the immunization and vaccination programs smoothly. In severe events, polio vaccination teams have been attacked and stopped forcefully from their services.

The concerns of global community regarding the existence of polio virus in Pakistan increased when several cases of polio virus in other countries showed close linkage with viral strain circulating in Pakistan. In 2013, the polio free Syria observed an outbreak of the infection<sup>3</sup> after 1999. The polio viral strain was identified as wild type 1 of Pakistani origin. Earlier, Egypt, Palestine and Israel had confirmed the existence of the same strain in sewage drains.<sup>3</sup> In June 2014, the same viral strain was detected in Afghanistan,<sup>2</sup> and Pakistan became the primary

focus of international community as a source of infection dissemination.

The failure of Pakistan to curb the virus triggered serious complications for its residents in terms of trade and travel. Many countries have shown their reservations and polio vaccination has been made mandatory for person of any age departing out of the country. Recently, the government of Pakistan geared up the pace of immunization programs to deliver the final punch. Polio teams are now escorted by police personnel to facilitate the process. As of June 15, 2016, the reckoned polio cases in the country were 11, which is far less than the number of registered cases in 2015 (24 cases) till same time of the year<sup>1</sup> (Fig. 1). The latest information<sup>4</sup> retrieved on 3 July, 2016 revealed a new case increasing the toll of polio cases in 2016 to 12 (Fig. 2). It is obvious that the war affected province, KP is still the leading hotspot for the polio virus followed by number of cases in Sindh province (Fig 2). Compared to the past years, the situation in other regions of the country has improved considerably (Fig 2). Nevertheless, the information presented (Fig 2) reveals the number of polio cases till July period. It is expected that the polio incidence toll will increase in the upcoming months. Although, the health monitoring agencies are optimistic that with the current pace the polio virus could be wiped out completely by 2018 as per World Health Organization (WHO) agenda.<sup>5</sup> However, with the recent status of KP and Sindh province, apparently this seems very difficult but time will unveil the reality.

In prospect of Pakistan current scenario, there is a need for immediate attention and emergency based measures. These include speeding up the ongoing campaigns in favor of anti-polio vaccination and immunization by health and social organization. As part of the anti-polio management policy, initiatives should be taken to increase awareness of the public, particularly in remote and backward areas of KP, FATA and Sindh. In a country where the influence of religion is remarkable in people routine life and decision making, the role of renowned religious scholars and clerics would be phenomenal in motivating the public toward the objective. Most importantly, immune deficiencies should be strictly inquired before administering the vaccine and possible alternative

Countries	Year-to-date 2016		Year-to-date 2015		Total in 2015		Onset of paralysis of most recent case	
	WPV	cVDPV	WPV	cVDPV	WPV	cVDPV	WPV	cVDPV
Afghanistan	6	0	2	0	20	0	29-May-16	NA
Pakistan	11	0	24	2	54	2	26-Apr-16	09-Feb-15
Guinea	0	0	0	0	0	7	NA	14-Dec-15
Lao PDR	0	3	0	0	0	8	NA	11-Jan-16
Madagascar	0	0	0	0	0	10	NA	22-Aug-15
Myanmar	0	0	0	0	0	2	NA	05-Oct-15
Nigeria	0	0	0	0	0	1	NA	16-May-15
Ukraine	0	0	0	0	0	2	NA	07-Jul-15

Fig. 1 – Status of Pakistan in worldwide polio incidence cases.<sup>1</sup>

Province	2009	2010	2011	2012	2013	2014	2015	2016
Punjab	17	7	9	2	7	5	2	0
Sindh	12	27	33	4	10	30	12	4
KPK	29	24	23	27	11	68	17	7
Fata	20	74	59	20	65	179	16	0
Balochistan	11	12	73	4	0	25	7	1
Gilgit-Baltistan	0	0	1	1	0	0	0	0
Azad Jammu & Kashmir	0	0	0	0	0	0	0	0
Total	89	144	198	58	93	306	54	12

Fig. 2 – Province wise polio incidence cases from 2009 to July 2016 in Pakistan.<sup>4</sup>

strategies should be devised by WHO for individuals with known immune deficiencies (people with HIV and primary immune-deficiencies). This is important in order to minimize the chances of infection in immuno-compromised people and nullify any possible argument regarding vaccine induced polio cases in healthy individuals, which can sabotage the overall cause. Lastly, the global community should assist Pakistan health sector in combating the menace till its final end to achieve the dream of a polio free world.

#### Conflicts of interest

The authors declare no conflicts of interest.

#### REFERENCES

1. Global Polio Eradication Initiative. Polio this week; 2016. Available at: <http://www.polioeradication.org/dataandmonitoring/poliothisweek.aspx> [accessed 21.06.16].
2. World Health Organization. WHO statement on the second meeting of the International Health Regulations Emergency Committee concerning the international spread of wild poliovirus; 2014. Available at: <http://www.who.int/mediacentre/news/statements/2014/polio-20140505/en/> [accessed 21.06.16].
3. The Lancet Infectious Diseases. A wake-up call for polio eradication. *Lancet Infect Dis.* 2014;14:1.

4. End Polio Pakistan. Polio cases in provinces; 2016. Available from: <http://www.endpolio.com.pk/polioin-pakistan/polio-cases-in-provinces> [accessed 03.07.16].
5. Global Polio Eradication Initiative. Polio eradication and endgame strategic plan 2013–2018; 2016. Available at: <http://www.polioeradication.org/resourcelibrary/strategyandwork.aspx> [accessed 21.06.16].

Abdul Waheed Khan\*, Shahid Ali, Syed Shujait Ali  
University of Swat, Center for Biotechnology and Microbiology,  
Odigram, Pakistan

\* *Corresponding author.*

E-mail address: [khan\\_ibge@yahoo.com](mailto:khan_ibge@yahoo.com) (A.W. Khan).

Received 3 July 2016

Accepted 16 July 2016

Available online 12 August 2016

1413-8670/© 2016 Sociedade Brasileira de Infectologia.  
Published by Elsevier Editora Ltda. This is an open access  
article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).  
<http://dx.doi.org/10.1016/j.bjid.2016.07.009>