

## SHORT COMMUNICATION

## “WHY WE COULD NOT ERADICATE POLIO FROM PAKISTAN AND HOW CAN WE?”

Syed Zawar Shah, Muhammad Saad, Mohammad Hasan Rahman Khattak, Muhammad Rizwan, Asma Haidari\*, Fatima Idrees\*\*

Centre of Biotechnology and Microbiology, University of Peshawar-Pakistan, \*Medicine, Nursing and Health Sciences, Monash University, Melbourne-Australia, \*\*Sardar Begum Dental College, University of Gandhara, Peshawar-Pakistan

Polio is a major health problem and a deadly infectious disease in the developing countries. It is a viral illness caused by polio virus that can lead to paralysis, limb deformities, breathing problems or even death. Polio virus resides only in humans and passes on to the environment in the faeces of someone who is infected. Polio is still endemic in three countries, i.e., Pakistan, Nigeria and Afghanistan and is eradicated from the rest of the world. Pakistan is considered as the exporter of Wild Polio Virus (WPV) with highest number of polio outbreaks among endemic countries. With the start of World Polio Eradication Initiative in 1988, the number of polio cases has been reduced up to 99% worldwide until now. In 2015, Pakistan has shown a decrease of 70–75% in number of polio cases as compare to last year which is the result of good government’s initiatives. Militant organizations such as Tehreek-e-Taliban Pakistan, Al-Qaeda and Boko haram movement of northern Nigeria are a major hurdle in the eradication of polio from these countries. The misconception of people about polio vaccine, insecurity within the country and poor health system are the reasons of failure of polio eradication campaigns in these regions. Awareness campaigns about polio for locals and development of proper health system will help in the eradication of polio. Once polio is eradicated, about 40-50 billion dollars can be saved globally. With the strong commitment, seriousness and good initiatives, polio will be eradicated from Pakistan within two years more likely.

**Keywords:** Poliomyelitis, prevalence, risk factors, strategies

J Ayub Med Coll Abbottabad 2016;28(2):423–5

## INTRODUCTION

Polio (also known as poliomyelitis) is a highly infectious disease caused by a polio virus that attacks the nervous system. It is a human enterovirus and belongs to the family of *Picornaviridae*. Poliovirus is usually spread from person to another through the fecal oral route or less often by a common channel that is polluted food or water.<sup>1</sup> One in 200 infections results in irreversible paralysis very often in the legs.<sup>2</sup> Since 1988, Global Polio Eradication Initiative (GPEI) has reduced polio worldwide by 99% but Afghanistan, Pakistan and Nigeria still have frequent outbreaks of wild polio virus (WPV).<sup>3</sup> In 2013, polio affected people are down to 416 from 350,000 cases in 1988.<sup>4</sup> Polio can only be prevented and there is no cure for this disease. Polio vaccine can protect a child for whole life, if given multiple times.<sup>4</sup> In 2012, the World Health Assembly (WHA) called for a comprehensive polio end game strategy for the completion of the polio eradication.<sup>5</sup>

**Prevalence of polio from 2014–15 in endemic countries:**

Globally, 30 WPV and 9 Circulating Vaccine Derived Polio Virus (cVDPV) cases are reported in 2015. Among these, 30 WPV and 1 cVDPV cases are reported in the polio endemic countries while 8 cVDPV cases were reported in the non-endemic countries.<sup>5</sup> While in 2014, 359 WPV and 55 cVDPV cases were reported among which 340 WPV and 52 cVDPV cases were

reported in the polio endemic countries while 19 WPV and 3 cVDPV cases in the non-endemic countries. In Pakistan, 26 WPV cases are reported until 6-June-15 while at this time of the last year the reported WPV cases were 83, so this year there is a 70% decrease in the number of polio cases confirmed by WHO.<sup>5</sup> This substantial decrease in the number of polio cases is because of the result of the military operation in the Federally Administrated Tribal Areas (FATA) of Pakistan that has permitted the vaccinators to reach areas formerly out of bounds because of the militant attacks.<sup>6</sup> No cVDPV cases were reported in Pakistan in 2015.<sup>5</sup> Karachi, North Waziristan and few areas of FATA remain the high risk areas in the spread of polio.<sup>5</sup> In 2014, 306 WPV and 22 cVDPV cases were reported in Pakistan.<sup>5</sup> For polio virus circulation, Pashtun community is thought to be responsible. In Afghanistan, 4 WPV cases and no cVDPV cases were reported until 7-June-15. In 2014, 28 WPV cases and no cVDPV cases were reported in Afghanistan.<sup>5</sup> In the list of polio endemic countries, Afghanistan is in the strong position to be removed. While in Nigeria only a single case of cVDPV and no case of WPV is reported until June, 2015. In 2014, 6 WPV and 30 cVDPV cases were reported in Nigeria.<sup>5</sup> Failure in the eradication of polio from these remaining areas of polio endemic countries could result in 200000 new cases every year all around the world within 10 years.<sup>4</sup>

**Major Challenges in Polio eradication:**

Pakistan and Afghanistan formed a single epidemiological block with periodic cross-border population movement which bring out the flow of virus in both directions.<sup>7</sup> Both these countries are considered as the exporters of the wild polio virus.<sup>7</sup> The major problem in eradication of polio from Pakistan is the militant organization Tehreek-e-Taliban Pakistan (TTP) which derailed world polio eradication program in Pakistan. They imposed a ban on polio-vaccination campaign in regions of FATA which are under their control and gave serious threats to the polio vaccinators. These Islamic militants have spread conspiracy theories about vaccinations which have contributed to resurgence in polio. Leaflets were distributed in the regions of Miranshah from Taliban saying that "On one hand US military is killing innocent women, children and old people in drone attacks and on the other hand, they are spending millions on vaccination campaign".<sup>8</sup> The official order by the Islamic militants to ban immunization is the response to the CIA's setting up a fake hepatitis vaccination campaign in Pakistan.

The secret operation was part of an attempt by the U.S. secret agency to verify whether Osama bin Laden was holed up in the city of Abbottabad. In Pakistan, Taliban's "polio war" puts 241,000 children in danger.<sup>8</sup> Operation Zarb-e-Azab was started in June 2014 against these militants by the military forces of Pakistan which appeared to be as a blessing in disguise because when operation started, people from FATA regions migrated to Khyber Pakhtunkhwa province, allowing health workers an opportunity to reach families who had not been vaccinated for years.<sup>6</sup> For this reason Pakistan showed a significant decrease of 70% in the number of WPV cases in 2015 as compare to the last year.<sup>5</sup>

Another major problem is the misconception of people about polio vaccines. More than 40,000 parents refuse to dispense the vaccine to their children in every campaign in Fata and KP.<sup>9</sup> They believe that the polio vaccine has banned ingredients including monkey fecal matter and pig fats which are considered haram in Islam.<sup>10</sup> They have this misconception that polio vaccine causes infertility.<sup>10</sup> This seriously jeopardizes Pakistan's polio eradication efforts. Religious scholars are playing their role in this regard and declared polio drops as "halal" under Sharia law.<sup>11</sup> A network of social mobilizers known as COMNet has been set in 46 districts of the country to stop the course of circulating rumours and inaccurate information that has been effecting the progress towards polio eradication in Pakistan.<sup>10</sup>

The insecurity of the vaccinators is another hurdle in fight with polio. They are still being murdered in the midst of a public health initiative.<sup>12</sup> About 5500 policemen are now guarding these vaccinators for all

campaign which is found effective against Taliban.<sup>12</sup> Police arrested 471 people which refused to allow their children receive anti-polio drops and filed cases against more than 1400 people.<sup>13</sup> In the high risk districts of Khyber Pakhtunkhwa, government has ordered the execution of Section 144 in the consequence of anti-polio vaccination campaign for the security of the vaccinators and to ensure that every child receive the anti-polio drops.<sup>13</sup>

Such refusals results in repeated anti-polio vaccination campaigns.<sup>14</sup> People think that polio vaccination twice or thrice a year is enough and that their children already have received vaccination.<sup>14</sup> Social mobilizers and communication teams are working hard to satisfy people that there is no harm in repeated vaccination and that the immune system of our children is weak so two or three vaccinations are not enough.<sup>14</sup> UNICEF official said that in some flood-hit areas of Punjab, KP and Sindh, the local administrations gave incentives such as food items to vaccinate the children. Later, people started hoping for incentives and said no to vaccinations without these.<sup>14</sup>

**How to overcome hurdles?**

These failures in Pakistan's polio elimination campaigns are now complicating the global scenario for a polio free world. WHO declared that Pakistan is responsible for 80% polio cases recorded globally and imposed strict travel limitations to stop the possible spread of polio virus from Pakistan to other countries because few cases of polio are reported in China and Egypt which linked to the polio virus strain endemic in Pakistan.<sup>15</sup> So for this reason the eradication of polio from Pakistan is so important.<sup>16</sup>

There are different strategies to eradicate polio from Pakistan. The most important of all is to educate the local people by arranging different workshops and awareness campaigns to remove the misconceptions of people about polio vaccination present in the society because if people will not be educated then there is no use of any polio vaccination campaigns and it will always result in a failure. We have to make sure that locals see polio elimination as a social problem and take ownership. These false beliefs about polio vaccination have made more and more children at risk to the disease thus increasing the burden of polio eradication partners.<sup>10</sup> In Pakistan, local social mobilizers are actively playing their role in this regard. They get connected to community groups and influencers who can take a leadership role in polio and child health campaigns.<sup>10</sup>

Another approach in the eradication of polio from Pakistan is to hire more and more local female lady health workers because they can carry out the polio campaigns more efficiently in a Pashtun community and they are more reliable in overcoming the fear and misconceptions aroused by the rumours related to polio

vaccination. The National Emergency Action Plan (NEAP) for Pakistan has outlined an action plan to stop the transmission of polio as soon as possible by detecting and interrupting all polio virus transmission, containing and eliminating the virus, strengthening immunization systems to help sustain protection once transmission is stopped.<sup>3,17</sup> To strengthen the immune system at least one dose of Inactivated Polio Vaccine (IPV) must be introduced into routine immunization programs along with OPV.<sup>3</sup>

Another main strategy for stopping polio transmission is high infant immunization coverage with four doses of oral polio vaccine (OPV) in the first year of life in developing and endemic countries, and regular immunization with OPV and/or IPV elsewhere.<sup>18</sup>

Strengthening the routine health system in Pakistan and making polio elimination as part of routine immunization is also a best strategy in eradication of polio. Routine immunization program is weak in Pakistan because during polio immunization campaigns many other programs stand so the solution is to make the routine health system stronger, including door to door health coverage, rather than emphasizing polio as “the only” health problem.<sup>3,19</sup>

## CONCLUSION

Pakistan at present is surrounded by many problems like terrorism, lack of security, floods, political instability and bad economy. All these factors add up in slowing down of polio vaccination campaign which derailed World Polio Eradication Program in Pakistan. Now it is necessary to educate people about this health issue on ground level and make them understand that it's their moral duty to help Pakistan overcome this problem. Pakistan's government has to work for the improvement of its health system. Strong commitment, seriousness and good initiatives by the government of Pakistan will help in the eradication of polio. Pakistan's conclusive action against terrorism had a positive effect on the act of polio eradication campaign and more likely, Pakistan will be polio free in next two years due to the government's initiatives as said by the President of Pakistan Mamnoon Hussain and removal of polio will conserve about US \$ 40-50 billion over the next 20 years, mainly in low income countries.

## REFERENCES

1. Atkinson W, Hamborsky J, McIntyre L, Wolfe S. Poliomyelitis. *Epidemiology and Prevention of Vaccine-*

- Preventable Diseases (11th ed.). Washington DC: Public Health Foundation; 2009, p. 231–44.
2. Carl Y. Saab. *The spinal cord*. New York (NY): InfoBase Publishing; 2006, p. 15.
3. World Health Organization, 2013. Polio Eradication and Endgame Strategic Plan 2013–18. Global Polio Eradication Initiative. Available at [http://www.polioeradication.org/Portals/0/Document/Resources/StrategyWork/PEESP\\_ES\\_EN\\_A4.pdf](http://www.polioeradication.org/Portals/0/Document/Resources/StrategyWork/PEESP_ES_EN_A4.pdf).
4. World Health Organization, 2014. Poliomyelitis Fact sheet N 114. Available at <http://www.who.int/mediacentre/factsheets/fs114/en/>
5. Global Polio Eradication Initiative Data and Monitoring; Polio this week. Retrieved on 8 July, 2015. Available at <http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx>
6. Pakistan sees Major drop in the polio cases. The DAWN News. Retrieved on 4 June, 2015. Available at <http://www.dawn.com/news/1186150>
7. World Health Organization. Statement on the 5th IHR Emergency Committee meeting regarding the international spread of wild poliovirus. Retrieved on 5 May, 2015. Available at <http://www.who.int/mediacentre/news/statements/2015/polio-5th-statement/en/>
8. Zofeen T E. Taliban's 'polio war' puts 241,000 children at risk. The DAWN News. Retrieved on 2 July, 2012. Available at <http://www.dawn.com/news/731177/talibans-polio-war-puts-241000-children-at-stake>
9. Ashfaq Y. New strategy unlikely to curtail refusal against anti-polio vaccine. The DAWN News. Retrieved on 30 December, 2014. Available at <http://www.dawn.com/news/1154018>
10. End Polio Pakistan. Social Mobilizers tackle Polio Vaccine misconceptions in Pakistan. Retrieved on 25 March, 2014. Available at <http://www.endpolio.com.pk/12-field-stories/107-social-mobilisers-tackle-polio-vaccine-misconceptions-in-Pakistan>
11. Polio drops declared “Halal”. The Express Tribune. Retrieved on 25 November, 2010. Available at <http://tribune.com.pk/story/81400/polio-drops-declared-halal/>
12. Ashfaq Y. Health workers murdered as Pakistan vaccinates 8.4 million children. CMAJ 2014; 109-4776.
13. Ali A. Kp police arrest 471 parents for refusing polio vaccine. The Dawn News. Retrieved on 02 March, 2015. Available at <http://www.dawn.com/news/1166901>
14. Aamir Y. More people refusing polio vaccines. The Dawn News. Retrieved on 22 October, 2013. Available at <http://www.dawn.com/news/1050975>
15. Ali A. 10 held for refusing polio vaccines to children. The DAWN News. Retrieved on 26 February, 2015. Available at <http://www.dawn.com/news/1165867>
16. Kazi AM, Khalid M, Kazi AN. Failure of polio eradication from Pakistan: Threat to world health. *J Pioneer Med Sci* 2014; 4(1):8-9S
17. End Polio Pakistan. Eradication within reach in Pakistan. Retrieved on 13 July, 2015. Available at <http://www.endpolio.com.pk/12-field-stories/265-eradication-within-reach-in-pakistan>
18. World Health Organization, 2003. Global polio eradication initiative: strategic plan 2004–2008 Geneva: WHO. ISBN 92-4-159117-X.
19. Nishtar S. Pakistan, politics and polio. *Bull World Health Organ* 2010; 88(2):159–60.

## Address for Correspondence:

Syed Zawar Shah, Centre of Biotechnology and Microbiology, University of Peshawar-Pakistan

Cell: +92 314 646 6653

Email: syed.zawar01@gmail.com