

COMMENTARY



Polio vaccination campaign in Pakistan: a step towards eradication or still a challenge in hand?

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ABSTRACT

Polio is an acute viral disease that is still endemic in Pakistan. The polio vaccination program is facing many challenges that result in an increased number of new cases. The success of polio vaccination has been threatened in different parts of Pakistan. In the past, the immunization program was affected by different factors including insecurity, inducing mass migration and displacement, life threats to polio workers, and restricted access to the vulnerable population. Misconceptions and misunderstanding about the polio vaccine are a major obstacle in polio eradication which need to be erased by organized effects of increasing vaccine awareness.

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Context

Poliomyelitis is an acute viral disease caused by the single-stranded positive-sense RNA poliovirus. The virus belongs to the family picornaviridae and genus enterovirus, which is further classified into three distinct serotypes (type 1, 2, and 3). The virus mainly affects children under the age of 5 years. The virus invades the central nervous system and in a matter of hours can cause total paralysis due to immobilization of breathing muscles. The disease is characterized by high fever, vomiting, headache, fatigue, pain in the limbs and stiffness of the neck. The virus is mainly transmitted via the fecal-oral route, especially contaminated water and food. There is no treatment available for this deadly disease, but it can be prevented through vaccination.¹

In 1988, Global Polio Eradication Initiative (GPEI) was launched. Since then the overall incidence of wild polio cases has decreased by 99% from an estimated 350,000 in more than 125 endemic countries to 33 cases in 2018. Out of 200 infected cases, one case leads to irreversible paralysis with a 5–10% mortality rate among paralyzed victims. In 1999, wild poliovirus type 2 was eradicated, while wild poliovirus type 3 has been reported in Nigeria.

The WHO Region of the Americas was declared polio-free in 1994, WHO Western Pacific Region in 2000, WHO European Region in 2002, and WHO South-East Asia Region in 2014. These achievements mark a tremendous jump toward polio eradication. The polio vaccine has been estimated to have saved an estimated 1.5 million child deaths.¹

Pakistan is on the list of three polio-endemic countries along with Afghanistan and Nigeria. Pakistan and Afghanistan, which together have contributed 85% of world polio cases. Overall, the number of polio cases has decreased significantly in Pakistan in

the last few years but not yet eradicated due to many logistics obstacles. In 2012, 58 cases were reported while in 2013 the number increased to 93. In 2014, 307 cases were reported, which is the highest number of polio cases in the country in recent years. In 2015, 54 cases were reported, 20 in 2016, 8 in 2017, 12 in 2018, and 8 so far in 2019.²

On 22 April 2019 in all four provinces of Pakistan (Punjab, Sindh, Khyber Pakhtunkhwa, and Balochistan), Gilgit-Baltistan and Pakistan-occupied Kashmir, more than 260,000 polio workers were deployed to administer polio vaccine to 39 million children under the age of 5 years. However, during the first day of campaign, a sudden panic arose in Peshawar, the capital city of Khyber Pakhtunkhwa, when according to local and international media, hundreds of school children were hospitalized complaining of nausea and vomiting after polio vaccinations. As a consequence, angry family members responded by storming a local health facility in Peshawar (Badda Beer) on Monday and setting it ablaze. This incident dealt another blow to efforts to eradicate the disease, which has been hindered by widespread mistrust in some areas. After this accident, officials of Khyber Pakhtunkhwa Emergency Operations Center (EOC) said that polio vaccination is safe and emphasized its importance. Government officials declared that this step put Pakistan 20 years backward in the fight against polio.³

This is not the first time that people in Pakistan reacted against polio vaccination. Many polio workers and security personnel have been killed in the past during polio vaccination campaigns,^{4,5} and such incidents have been one of the major reasons that polio is still endemic in Pakistan. The government of Pakistan and health authorities needs to take measures to avoid such situations and rumors about polio vaccination. It is strongly recommended to strengthen the quality control system

of the vaccine before administration. In some areas of the country, there is no proper transportation and storage of vaccination, which may affect the quality of vaccines. Pakistan and Afghanistan have faced significant security challenges along the border areas including targeted attacks on polio workers and security guards and in certain areas an outright ban on polio immunization. Insecurity in the region is often listed as an important obstacle toward global polio eradication. In this regard, very limited information and evidence are available on how insecurity affects polio immunization. During times of high insecurity, the vaccination rate for polio was 5% lower. In addition, the incidence of polio was 73% greater in areas during high insecurity periods compared with secure periods.⁶

It is very clear, as long as a single infected child remains with polio, that all children are at risk of polio. Such kinds of failure could result in many new cases every year. Most countries expanded global efforts to combat infectious diseases by building effective disease surveillance and vaccination. Reinforcement of management strategies and vaccination are needed to achieve the target of polio eradication. Polio eradication has been estimated to be able to save at least US\$40–50 billion, mostly in poor countries.¹

Final remarks

Polio remains endemic in Pakistan, which might be a significant challenge to worldwide polio eradication efforts. In Pakistan, the polio vaccination campaign is administered through several routes including routine vaccination programs and supplemental vaccination. The vaccination programs have been affected by different factors including insecurity, inducing mass migration, limiting supervision on vaccination campaign, and oversight especially in the war-affected and remote areas, thus restricting access to vulnerable populations and exposing polio workers to attack. Efficient managed operation, enhanced surveillance, detection, coordination with Afghanistan, boosting population immunity, vaccination safety (proper transportation and storage), and public awareness especially in the remote areas of the country need to be improved. Misconceptions about polio vaccination are major obstacles

in eradicating the diseases, which need to be removed by solid awareness of these issues.

Author contributions

TA: Study design; Conceptualization and wrote the manuscript. MK and THM: Helped in writing. JH: Supervised the study and critically reviewed the article. All the authors approved the article for publication.

Disclosure of potential conflicts of interest

The authors declared no conflict of interest.

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