

Poliomyelitis in Pakistan: Evolving challenges and way forward

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Poliomyelitis, an acute paralytic illness, affects children under the age of five. It is brought on by the Polio Virus (PV), a single-stranded RNA virus that comes in three serotypes (type 1, 2, and 3) which is transmitted by feco-oral route.^{1,2} Since 1988, there has been a 99.9% decrease in polio cases worldwide because of the World Health Organization's Global Polio Eradication initiative.¹ This initiative has played a vital role in eradication of the disease. Pakistan is one of the 2 nations where polio remains as an endemic disease even at the end of 2022, the other being Afghanistan.²

In 2021, Pakistan reported just 1 case of polio linked to the Wild Poliovirus type 1 (WPV1) against 14 cases from April 1 through July 31, 2022.² Eleven instances of polio have been reported in the Northwestern Waziristan in 2022, clearly illustrating the loopholes in national policies to completely eradicate the disease despite its goal to immunize 12.6 million children by 2022.² The goal of the Global Polio Eradication Initiative's (GPEI) current 5-year strategic plan is to interrupt WPV1 transmission by 2023.³

According to WHO and UNICEF estimates, in Pakistan approximately 83% of infants received three doses of the Oral Poliovirus Vaccine (OPV) and one dose of Inactivated Poliovirus Vaccine (IPV) in 2021. While none of the districts in Baluchistan, Khyber Pakhtunkhwa, and Sindh attained 80% vaccine coverage, 86% districts in Punjab province had ≥ 3 dose OPV coverage.⁴

National Immunization Days (NIDs) and Sub National Immunization Days (SNIDs) targeted children under the age of five with b-OPV (bivalent OPV). However recent discovery of samples of WPV1 in sewage from various provinces implies that virus widely circulates throughout the high transmission season. As a counter-measure to the detection of WPV1 cases and positive environment samples in first half of 2022, limited Supplemental Immunization Activities (SIAs) were also conducted. Circulating Vaccine Derived Polio Virus (cVDVP2), outbreaks of WPV1 and floods further added to the challenges.^{3,4}

The country has faced unique challenges in fight against polio. Even after more than two decades of the

launch of polio eradication initiative in the country, resistance to polio vaccination is still palpable putting nearly 250,000 children living in the province of Khyber Pakhtunkhwa at risk of contracting polio.^{5,6} In the back drop of inadequate operational performance, political will and commitment, dwindling donor confidence, security threats of healthcare workers, geo-political insecurity, extremism, insufficient backing from local communities and civil society are the potential dangers that could delay interruption and certification.^{2,5,6,7} The World Health Organization lists vaccine hesitancy as one of the top 10 global health hazards and is present in both industrialized and developing/transitional nations.⁸ Vaccine hesitancy manifesting itself as refusal to vaccinate is multidimensional and needs to be addressed in social, political, religious and epidemiological context.^{2,8} Refusal to vaccine against polio due to various reasons varies in the country from as low as 3.15% in Islamabad and Rawalpindi region, 8.1% in Quetta, 27.9% in Bannu District to 61.3% refusal in some areas of Karachi.⁹⁻¹²

Polio vaccination and its mass campaigns remain a continued challenge slowing the achievements of targets to roll Pakistan out of endemic situation. Misconceptions, lack of trust, vaccine fatigue, sick child, religious reasons need serious addressal. Conspiracy theories, including myths of infertility and sterilization, have added fuel to fire leading to life threatening hostility towards polio workers.⁶

Experiences from recent wave of diseases such as Dengue in 2011 and COVID-19 clearly show the importance of local experiences, ownership and advocacy.¹³ Sustained and consistent awareness at all levels is required to deepen the trust in eradication campaigns.¹⁴ These campaigns should not be limited to immunization but be used as opportunity to raise awareness and reasons for refusal. Misconceptions can be further dealt by regular publications of grass root workers experiences, awareness seminars, and use of social media platforms.² Building and cultivating strategizes with civil society organizations and influencers including local community leaders, engagement of policy makers, gender equality and involvement of private sector can play a significant role.

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It is high time that the country realizes that it has to take steps towards long term goal of ‘enabling environment for promotion of vaccine’ by defining role of ‘key partners’ through formulation of micro-plans and strategies with clear monitoring and evaluation methods.^{10,14} Nevertheless, the importance of routine immunization through Expanded Programme on Immunization in these advocacy campaigns should not be overlooked.^{1,2,3} Furthermore, life and job security of grass root polio workers should be safe guarded by the Government.⁶ Evidence based solutions through community-based studies, and experiences from other Islamic countries such as Nigeria can help to formulate strategies that can uplift the barriers towards polio and its eradication strategies in an era where community is the nucleus of efforts.¹¹

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