Editorial

Polio Eradication Failure in Pakistan: The Unfinished Battle

Gulfreen Waheed[1], Aneela Zareen[2]

[1]Principal & Director DME, HOD & Prof of Department of Obstetrics & Gynaecology, Avicenna Medical College & Avicenna Hospital, Lahore;[2]HOD & Professor Department of Paediatric Medicine, Avicenna Medical College & Avicenna Hospital, Lahore, Pakistan

Correspondence: gfwaheed@avicennamch.com

How to cite: Waheed G, Zareen A. Polio Eradication Failure in Pakistan: The Unfinished Battle. Avicenna J Health Sci 2025;02(01): 1-3

Poliomyelitis, commonly known as polio, has haunted humanity for millions of years. Stone carvings from ancient Egypt showed people with weakened limbs, a classical sign of polio.

Yet the disease only became rampant during the twentieth century, when repeated outbreaks left children across several countries of the world paralyzed or dead.[1] Those who lived through it often carried deformities of arms and legs, needing crutches or wheelchairs for the rest of their days.

Global Polio Eradication Efforts

Hope arrived in 1955 when Dr. Jonas Salk rolled out the first inactivated polio vaccine (IPV). A decade later, Dr. Albert Sabin developed an oral polio vaccine (OPV) that was easy to administer. Together, these vaccines turned the once incurable illness into a preventable condition. Inspired by the progress, health officials launched the Global Polio Eradication Initiative (GPEI) in 1988, aiming for the total eradication of the disease. Since then, more than 2.5 billion children have received polio vaccinations, and reported disease-positive cases have declined by over 99%. The Americas, Western Pacific, and Africa have been certified polio-free, marking historic milestones in global health.[2]

Polio Challenges: A Threat That Transcends Borders

As a result of the tireless efforts under the Global Polio Eradication Initiative (GPEI), most countries have bid farewell to polio. Yet the virus still slips through only two places – Pakistan and Afghanistan, where it quietly spins out of control. A tangled mix of political complexities, poor logistics, and local beliefs continues to pose hurdles for the campaign in many parts of Pakistan. As a result, both the wild poliovirus (WPV1) and a vaccine-derived version (cVDPV2) persist in the population, threatening not only the people there but also the rest of the world.

Unpacking the Real Barriers to Polio Eradication

The slow death of Pakistan's polio struggle has little to do with missing scientific expertise and everything to do with shattered trust and weak governance. Such hurdles put national health at risk and, by extension, the global promise of a virus-free future. Prominent among them is the violence that shadows vaccination teams in Khyber Pakhtunkhwa, Baluchistan, and Sindh. Since 2012, armed groups have hunted and killed more than a hundred vaccinators and their guards.[3] The 2011 intelligence operation incident, which masqueraded as a hepatitis B vaccination campaign, further eroded public trust.[4] In its aftermath, the extremist narrative framed the polio drive as an instrument of foreign espionage, intensifying fear and resistance within communities.

Misinformation and Vaccine Refusals

Misinformation about the oral polio vaccine (OPV) is rampant, particularly in rural, tribal and conservative areas. Many believe the vaccine causes infertility, birth control, or contains non-halal ingredients that may harm the Muslim faith.[5] Studies indicate that religious and conspiracy-driven beliefs account for a significant portion of refusals, with 40% of refusals in Khyber Pakhtunkhwa linked to such misconceptions.[6] The rise of social media platforms, such as WhatsApp and Facebook, has further exacerbated the spread of misinformation.

Operational Failure in Immunization Infrastructure

Pakistan's polio eradication efforts suffer from structural inefficiencies, including:

- Inaccurate enumeration of target populations

- Failure to vaccinate mobile or nomadic groups
- Cold chain systems failures affecting vaccine potency

The factors reportedly contribute to gaps in immunezation.[7,8] Additionally, unpaid and poorly trained polio workers often resort to "fake finger-marking", falsely marking children as vaccinated to meet campaign targets.[9] These dishonest practices, coupled with data manipulation and overreporting, create a misleading picture of national immunization coverage.[10]

Weak Routine Immunization Programs

Despite conducting numerous supplementary immunisation activities (SIAs) targeting polio, Pakistan has failed to strengthen routine immunization programs, particularly in remote and underserved regions. The 2017–18 Pakistan Demographic and Health Survey revealed that only 66% of children aged 12–23 months were fully immunized, with significant disparities across provinces and districts.[11] Children in slums, remote villages, and border regions remain highly vulnerable to polio transmission.

Cross-Border Transmission and Population Mobility

Pakistan's porous border with Afghanistan facilitates frequent cross-border transmission of poliovirus. Afghan refugees, migrant workers, and nomadic tribes often move without receiving vaccinations, either due to lack of access to or awareness.[12] Genomic sequencing data from 2020 confirmed that many WPV1 strains circulating in Pakistan were genetically linked to those in Afghanistan, underscoring the need for coordinated regional vaccination strategies.[13]

Gender and Cultural Barriers

In conservative regions, male health workers face cultural restrictions when entering homes, limiting access to women and children. Additionally, many women lack the authority or health literacy to make independent healthcare decisions for their children, particularly in patriarchal households.[14] Increasing the number of trained female health workers and engaging women in community mobilisation are critical steps towards improving vaccine acceptance.[15]

International Fallout and the Risk of Funding Fatigue

Pakistan's failure to eradicate polio has damaged its international reputation. Since 2014, Pakistani travellers have been required to present proof of polio vaccination before international travel due to the WHO's declaration of Pakistan as a "state of public health emergency of international concern".[16] Additionally, major donors such as the Bill & Melinda Gates Foundation and GAVI have expressed frustration over governance issues and misuse of funds, raising concerns about future funding for polio and broader public health initiatives.[17]

A Path Forward: Reforms Rooted in Community Trust

Despite these setbacks, polio eradication in Pakistan is still achievable – but only through urgent, coordinated and reform-driven action. Key steps include:

- Rebuilding community trust through locally tailored communication strategies.
- Engaging religious leaders, teachers, and community influencers to counteract misinformation and change public perception.
- Ensure security for polio workers, particularly in volatile regions.
- Shifting focus from emergency campaigns to long-term immunization strengthening.
- Expanding routine immunization services and improving cold chain integrity.
- Increasing cross-border collaboration with Afghanistan to synchronize vaccination efforts, sharing surveillance data, following health protocols to prevent re-infections and achieving regional eradication goals.
- Integrating polio services with broader healthcare services, such as nutrition, maternal care, maternal and neonatal mortality, and hygiene education to enhance community buy-in and reduce campaign fatigue.

Uniting for a Polio-Free Future: A Matter of National Resolve

Polio eradication in Pakistan requires unprecedented coordination, transparency, and political commitment. This is not just a battle against a virus - it is a test of governance, societal cohesion, and national resolve. The international community is watching, and failure is no longer an option. The stakes are high – not just for Pakistan's children, but for the global promise of a polio-free world.

References

1. World Health Organization. History of Polio Vaccine: A crippling and life threatening disease. 2025. Available from: https://www.who.int/news-room/spotlight/history-of-vaccination /history-of-polio-vaccination
2. Global Polio Eradication Initiative. Polio Now: Wild Polio & cVDPV Cases. GPEI; 2024. Available from: Polio this week – GPEI
3. Shah S. Polio workers under attack in Pakistan. BMJ. 2013;346:f2588. Doi:10.1136/bmj.f2588
4. Chughtai A. The CIA vaccination ruse: ethical implications. Lancet Infect Dis. 2014;14(6):481–2. Doi; 10.1016/s1473-3099(14)70723-1.
5. Khan MU, Ahmad A, Aqeel T, Salman S, Ibrahim Q, Idrees J. Polio and the media in Pakistan: a crisis of communication. Health Commun. 2015;30(3):247–55. Doi: 10.1080/10410236.2014.923270.
6. Hakim M, Ali F, Zala, Pervaiz A, Afaq S, Haq ZU. Prevalence and associated factors of parental refusal rates for routine immunisation: a cross-sectional study in Peshawar, Khyber Pakhtunkhwa, Pakistan-2024. BMC Public Health. 2025;25(1):369.
7. WHO Pakistan. Polio Risk Assessment Report. WHO Country Office; 2023. Available from: WHO Polio Risk Assessment Report.
8. UNICEF Pakistan. Country Office Annual Report 2022. Update on the context and situation of children. Islamabad; 2022.
9. UNICEF 2023. Report on Baseline Data Collection on Media Behaviour Pattern in South KP. Along with Fake Finger Marking (December 2022)
10. Polio Eradication Independent Monitoring Board. 2022 Report on Pakistan's Polio Program. London: IMB; 2022. Available from: 21st IMB report – April 2022.
11. National Institute of Population Studies (NIPS) and ICF. Pakistan Demographic and Health Survey 2017–18. Islamabad, 2019. Available from: Pakistan Demographic and Health Survey 2017 – 18.
12. Gavi, the Vaccine Alliance. Missed children and mobile populations in polio campaigns. 2023. Available from: Gavi – Inactivated polio vaccine support.
13. World health Organization (WHO). Polio Weekly Update—Genomic Sequencing Highlights. March 2024. Available from: WHO Polio This Week.
14. Zaidi S, Bigdeli M, Aleem N, Siddiqui F, Hafeez A. Social and gender dimensions of polio eradication in Pakistan. Int J Health Plann Manage. 2019;34(1):e659–e674.
15. Majidulla A, Sultan MA, Zaman A, Shafique M, Ahmed S, Naz F, et al. Engage less, provide more: Community health workers' perspectives on how to overcome opposition to polio vaccination in Pakistan. Glob Public Health. 2025;20(1):2465645.
16. World Health Organization. Updated WHO vaccination recommendations for travellers. International Travel and Health Recommendations on Polio. Geneva: WHO; 2014. Available from: https://www.who.int/publications/i/item/9789241580472
17. Bill & Melinda Gates Foundation. Annual Letter on Polio Progress. 2023. Available from: https://www.gatesfoundation.org /ideas/annual-letters.

This open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0). To view a copy of this license, visit https://creativecommons.org/licenses/by/4.0/