

Opinion Article

Only Pakistan and Afghanistan have been Classified Polio Endemic Nations in the Globe as of 2022: Current Obstacles and Future Prospects for Polio Eradication in these Nations

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Opinion

Polio, commonly known as poliomyelitis, is a fatal and extremely contagious illness that can leave victims permanently disabled [1]. The Picornaviridae family, which comprises three serotypes 1, 2 and 3 of the poliovirus, has just one single-stranded RNA [2]. Based on the evidence at hand, types 2 and 3 were entirely exterminated from the globe as of 2015 [3]. This virus spread by a number of channels, including close contact, coughing, and sneezing by the affected individual. Additionally, smaller kids are more vulnerable to contracting this illness. This virus can cause paralysis by attacking the nervous system [1]. The report claimed that paralysis occurred in around 5% of all instances. The unvaccinated people are more vulnerable to infection. The majority of infected individuals do not exhibit any symptoms, with just roughly 25% of the population exhibiting any symptoms at all. Joint pain, exhaustion, and muscle spasms were among the post-polio manifestations that the poliovirus-infected individuals noticed [4]. It is not communicable and is referred to as Post-Polio Syndrome (PPS) [4].

Explicitly, there is no publicised treatment or therapy for the paralysis aggravated by the polio virus; nevertheless, physical or occupational rehab may be pertinent. The CDC advises giving infants and babies at least 4 doses, shielding them from poliovirus attacks [4]. Children get either the Inactivated Poliovirus Vaccination (IPV) or the Oral Poliovirus Vaccine (OPV) [4]. Attenuated poliovirus, which is present in the OPV and multiplies in the gut, has a very low possibility of infecting the central nervous system since it is a very weak virus [5]. Because it is affordable, secure, and efficient, produces a high level of protection against viruses, and can be administered orally, the majority of nations adopt OPV. This vaccination occasionally results

in paralysis. VAPP (Vaccine-Associated Paralytic Poliomyelitis) is thought to result from a weakened immune system [5]. The Salk vaccination, commonly known as the Inactivated Polio Vaccine (IPV), comprises all three of the poliovirus strains listed above that have been inactivated (killed) [1]. Because it creates antibodies against all three types of viruses, preventing viral propagation to the central nervous system and preventing paralysis, there is no risk of VAPP when this is given intramuscularly or intradermally [1].

In 1988, WHO spearheaded the Global Polio Eradication Initiative, which culminated in a 99% lessening in polio incidence globally [6]. Only two nations-Pakistan and Afghanistan-will still have widespread polio in 2022. Only form 1 is still prevalent as of 2015, with varieties 2 and 3 completely extinct 6. Type 2 in the wild was eliminated in 1999, and type 3 in 2020. Type 1 wild poliovirus is noticed in just two countries, as was hitherto outlined. In Pakistan and Afghanistan, where type 2 produces VAPP, OPV is employed because to its low cost and ease of oral administration. Trivalent vaccines were replaced in April 2016 with divalent vaccines, which contain types 1 and 3 but not type 2 [5].

Figure 1 depicts a sharp decline in the number of WPV cases between 2016 and 2021 in Pakistan and Afghanistan. There were 1 and 4, respectively, total PWV cases in Pakistan and Afghanistan in 2021. However, in 2022 (on December 27, 2022), there would be a total of 20 instances in Pakistan and 2, respectively. It is certain that Pakistan would have an increase in overall cases in 2022. All of Pakistan's cases in 2022 will originate in Khyber Pakhtunkhwa (KP) in the south, Waziristan in the north and south, and Lakki Marwat in the remaining two instances.

As seen in the Figure 1, there were 20 and 13 WPV cases in Pakistan and Afghanistan, respectively, in 2016. There is no change in WPV cases between 2016 and 2022. Why there are still WPV cases in both Pakistan and Afghanistan the questions arise here and need further debate [7].

Based on the most notable estimation, fraudulent vaccination entries and vaccine denial might be the two prime contributors to the polio pandemic in Pakistan in 2022. In the subsequent year, there were several instances of parents reluctant to vaccinate their kids [8]. Additionally, the immunization program was hampered in a wide range of circumstances by the Pakistani summer flood in 2022. Different fallacies prevail in Pakistan regarding the polio vaccination. One manifestation of this is the erroneous perception

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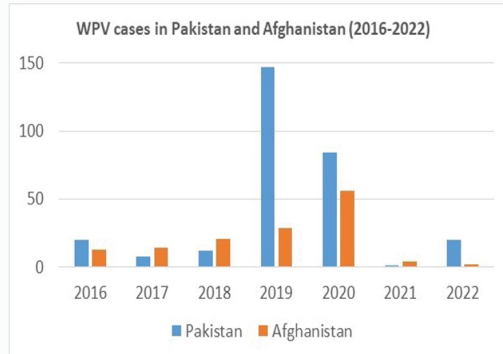


Figure 1: The WPV cases in cases in Pakistan and Afghanistan between 2016-2022.

held by certain individuals that Islam outlaws the polio vaccination. The inkling that it enables impotence is another pervasive fallacy [8]. Reportedly, Pakistan is struggling to extinguish polio owing to flaws with its administration, geopolitical risk, extremism, instability, and overall turmoil in the country [8]. Additionally, it might be intimidating to reach isolated areas for immunizations, and many people have illusions regarding the polio vaccine [9]. Might even, the polio worker is vilified by the public because to misapprehensions [8]. In certain regions in Pakistan, the populace was unaware of booster doses and speculated that youngsters garnered more doses than the WHO recommended number. In addition, an allegation surfaced in 2019 that some children in Pakistan's Khyber Pakhtunkhwa area were hospitalized as a result of negative vaccine side effects [10]. This region will be home to all 20 cases of polio in 2022, hence it makes sense that Pakistani rumors would be one of the biggest barriers to the polio vaccine campaign.

Polio is indeed deemed to be endemic in Afghanistan. Fifty six children were left disabled by the polio virus in 2020. But by 2022, there will only be two disabled children in the provinces of Paktika and Kunar, holding the polio virus tantalizingly close to being wiped from the country [7].

Fifty six children were crippled in 2020, according to a WHO assessment; this figure fell to 4 in 2021 and to 2 in 2022, showcasing a consistent plunge in the frequency of polio in Afghanistan. To entirely abolish polio from Afghanistan, there are still numerous obstacles to overcome. The provision of the immunization in rural regions is one of the foremost roadblocks for polio workers [11]. Safety and security are a significant issue with the Afghan polio campaign. On February 24, 2021, a premeditated ambush in Afghanistan alleged the lives of eight polio workers, four of them were women. Misinformation, illiteracy, and parental reluctance to endorse the vaccine are further conflicts with Afghanistan's polio vaccination effort [12]. The polio campaign was impeded by COVID-19's barrier to polio immunization, which decreased the supply of polio vaccine [12].

Keywords: Polio; Poliomyelitis; Polio endemic nations; Polio eradication; polio virus-induced paralysis

References

1. Walter K, Malani PN. What Is Polio? JAMA. 2022;328(16):1652.
2. Brown B, Oberste MS, Maher K, Pallansch MA. Complete genomic sequencing shows that polioviruses and members of human enterovirus species C are closely related in the noncapsid coding region. J Virol. 2003;77(16):8973-84.
3. CDC.Wolbert JG, Higginbotham K. Poliomyelitis. StatPearls. 2023.
4. What is Polio? Centers for Disease Control and Prevention. 2023.
5. Polio Global Eradication Initiative. Oral poliovirus vaccine. Polio.
6. World Health Organization. Poliomyelitis (polio). WHO. 2023.
7. Mbaeyi C, Baig S, Safdar MR, Khan Z, Young H, Jorba J, et al. Progress toward poliomyelitis eradication - Pakistan, January 2021-July 2022. Centers for Disease Control and Prevention MMWR. 2022;71(42):1-40.
8. Waheed Y. Polio eradication challenges in Pakistan. Clin Microbio Infect. 2018;24(1):6-7.
9. Ataullahjan A, Ahsan H, Soofi S, Habib MA, Bhutta ZA. Eradicating polio in Pakistan: a systematic review of programs and policies. Expert Rev Vaccines. 2021;20(6):661-78.
10. Ali M, Ahmad N, Khan H, Ali S, Akbar F, Hussain Z. Polio vaccination controversy in Pakistan. Lancet. 2019;394(10202):915-6.
11. World Health Organization. Afghanistan makes progress toward polio eradication but challenges remain. WHO. 2023.
12. Ahmadi A, Essar MY, Lin X, Adebisi YA, Lucero-Prisno III DE. Polio in Afghanistan: the current situation amid COVID-19. Am J Trop Med Hyg. 2020;103(4):1367-9.