

## POLIO ERADICATION IN PAKISTAN AND AFGHANISTAN: NAVIGATING POLITICAL INSTABILITY, MISINFORMATION, AND CROSS-BORDER TRANSMISSION”

Zirak khan<sup>\*1</sup>, Dr. Fazle Akbar khan<sup>2</sup>, Abdul Salam Laghari<sup>3</sup>, Muhammad Arbab<sup>4</sup>,  
Dr Rizwana Sarwat<sup>5</sup>, Ramsha<sup>6</sup>, Waseem Ullah<sup>7</sup>

<sup>\*1</sup>Master of Science in Public Health, Health Services Academy (HSA), Pakistan. BS Microbiology University of Baluchistan Quetta

<sup>2</sup>Masters of science in public health (MSPH) Health services academy, Pakistan Masters of healthcare Management (MHCM) American international university, U.S.A. Bachelor of Medicine & Bachelor of Surgery (MBBS) from Xi'an jiaotong University, University China

<sup>3</sup>Masters of Science in Public Health-Health Services Academy Islamabad, Undergraduate: Doctor of Dietetics and Nutritional Sciences University of Faisalabad

<sup>4</sup>Masters of Science in Public Health-Health Services Academy Islamabad, Undergraduate: Doctor of Optometry The University of Faisalabad

<sup>5</sup>Master of science in public health (MSPH), Health services academy Islamabad. Bachelor of medicine & bachelor of surgery (MBBS) FROM Hubei University Of Chinese Medicine China

<sup>6</sup>MBBS, MSPH Master of Science in Public Health-Health Services Academy Islamabad. Affiliation, AL Nafees Medical College Isra University Islamabad, Department Community Medicine

<sup>7</sup>MSPH Master of Science in Public Health-Health Services Academy Islamabad

<sup>\*1</sup>zarakkhan541@gmail.com, <sup>2</sup>fazleakbarkhan@gmail.com, <sup>3</sup>abdulsalamlaghari062@gmail.com,  
<sup>4</sup>muhammadrabab714@gmail.com, <sup>5</sup>mahmehar@yahoo.com, <sup>6</sup>drramsha95@gmail.com,  
<sup>7</sup>ranawasim035@gmail.com

DOI: <https://doi.org/10.5281/zenodo.15093963>

### Keywords

Polio eradication, Pakistan, Afghanistan, vaccine misinformation, governance, public health, cross-border transmission, operational challenges.

### Article History

Received on 18 February 2025  
Accepted on 18 March 2025  
Published on 27 March 2025

Copyright @Author

Corresponding Author: \*

### Abstract

**Introduction:** Polio remains a critical public health challenge in Pakistan and Afghanistan, the last two countries where wild poliovirus (WPV) persists. Despite the Global Polio Eradication Initiative's (GPEI) substantial investments and decades-long efforts, these nations face unique socio-political and operational challenges. This study examines the persistent barriers to polio eradication, including governance issues, vaccine misinformation, and cross-border virus transmission.

**Objectives:** The primary objective of this study is to analyze and compare the barriers to polio eradication in Pakistan and Afghanistan. It aims to highlight the impact of political instability, financial mismanagement, and operational challenges while offering policy recommendations for effective intervention strategies.

**Results:** The findings reveal that polio eradication efforts in Pakistan and Afghanistan are severely hindered by a combination of political, social, and logistical challenges. In Pakistan, *Khyber Pakhtunkhwa* remains the epicenter of polio cases, accounting for **63% of the national cases** in 2019. Similarly,

*Southern and Eastern Afghanistan* continue to face persistent outbreaks, reporting **22 cases in 2024**, largely due to ongoing conflict and restricted access. Over **3.5 million children** in Afghanistan remain unvaccinated due to security threats and the Taliban's prohibition of door-to-door campaigns, while in Pakistan, extremist groups like *Tehrik-i-Taliban Pakistan (TTP)* propagate misinformation, increasing vaccine hesitancy. Mismanagement of international funds further exacerbates the issue, weakening vaccination programs despite the GPEI's **\$4.8 billion** investment for 2022-2026. Additionally, the open border between the two countries facilitates **cross-border virus transmission**, allowing unvaccinated migrant populations to sustain outbreaks. Operational barriers, including targeted attacks on health workers in Pakistan and restricted movement in Afghanistan, further disrupt immunization drives, leaving large sections of the population unprotected. Addressing these intertwined challenges requires a multifaceted approach that emphasizes financial transparency, cross-border cooperation, and community engagement to overcome the final barriers to a polio-free future.

**Discussion:** Polio eradication in both countries requires addressing the intertwined issues of governance, misinformation, and operational inefficiencies. Without improved financial transparency, cross-border collaboration, and community engagement, eradication efforts will remain incomplete.

**Conclusion:** Achieving polio eradication in Pakistan and Afghanistan demands a comprehensive, multi-sectoral approach. Strengthening regional cooperation, ensuring transparency, and fostering community trust are vital steps toward eliminating the last pockets of poliovirus transmission.

## INTRODUCTION

Polio, a highly contagious viral illness, continues to be a major public health issue in Pakistan and Afghanistan, the only two nations where wild poliovirus (WPV) transmission endures despite worldwide eradication initiatives. Although the Global Polio Eradication Initiative (GPEI), which began in 1988, has diminished global polio cases by more than 99%, these two nations still encounter systemic and operational obstacles that hinder total eradication<sup>1</sup>

The geopolitical landscape, local governance issues, and socioeconomic inequalities in Pakistan and Afghanistan result in a complicated setting for vaccine distribution<sup>2</sup>. In Pakistan, challenges like corruption, false information, and political meddling weaken vaccination initiatives<sup>3</sup>. In Afghanistan, continuous armed conflict, displacement of people, and limited access to at-risk regions hinder successful immunization rates<sup>4</sup>. Moreover, extremist narratives

<sup>1</sup> Faizan, A., Rehman, T., & Mughal, S. (2024). Re-emergence of polio in Pakistan: Can the nation achieve the WPV1 eradication goal?. *Health Science Reports*, 7. <https://doi.org/10.1002/hsr2.1862>.

<sup>2</sup> Shakeel, S., Brown, M., Sethi, S., & Mackey, T. (2019). Achieving the end game: employing "vaccine diplomacy" to eradicate polio in

Pakistan. *BMC Public Health*, 19. <https://doi.org/10.1186/s12889-019-6393-1>.

<sup>3</sup> Roberts, L. (2019). Polio eradication campaign loses ground.. *Science*, 365 6449, 106-107. <https://doi.org/10.1126/science.365.6449.106>.

<sup>4</sup> Grundy, J., & Biggs, B. (2018). The Impact of Conflict on Immunisation Coverage

that associate vaccines with foreign interests heighten vaccine hesitancy, restricting public engagement<sup>5</sup>.

Recent public health reports indicate that from 2015 to 2024, Pakistan and Afghanistan together recorded more than 400 cases of polio, with Khyber Pakhtunkhwa in Pakistan and the eastern regions of Afghanistan being the most affected locales<sup>6</sup>. The COVID-19 pandemic further hindered vaccination efforts, worsening disparities in immunization rates and monitoring<sup>7</sup>.

This study provides a comparative analysis of the barriers to polio eradication in Pakistan and Afghanistan, examining how political instability, displaced populations, and public health infrastructure shape the persistence of poliovirus<sup>8</sup>. The findings aim to inform policy adjustments and advocate for sustainable, community-driven solutions to address the final barriers to eradication.<sup>9</sup>

## Background.

Polio, a disease of historical importance, has been acknowledged for thousands of years. Ancient Egyptian relics from 1500 BCE illustrate people with polio-like paralysis, showcasing its enduring existence<sup>10</sup>. The initial clinical account was recorded in 1789, and by the 20th century, polio had turned into a worldwide epidemic. The launch of the oral polio vaccine (OPV) and inactivated polio vaccine (IPV) resulted in a significant decrease in cases globally<sup>11</sup>.

The Global Polio Eradication Initiative (GPEI), established in 1988, decreased polio cases from 350,000 each year to merely 1,606 by 2009 (WHO, 2023). Nevertheless, Pakistan and Afghanistan are the final countries where polio is endemic, encountering specific obstacles that impede eradication initiatives<sup>12</sup>. Key Challenges in Pakistan and Afghanistan:

in 16 Countries. *International Journal of Health Policy and Management*, 8, 211 - 221.

<https://doi.org/10.15171/ijhpm.2018.127>.

<sup>5</sup> López-González, J., & Tuells, J. (2006). [Vaccinology in armed conflicts: a punctual intervention in poliomyelitis eradication in Afghanistan]. *Gaceta sanitaria*, 20 3, 244-7. <https://doi.org/10.1590/S0213-91112006000300012>.

<sup>6</sup> Sutton, B., Muluneh, A., Kannan, A., & Quigley, A. (2024). Polio program security in Pakistan and Afghanistan - finally legal but not safe.. *Global Biosecurity*. <https://doi.org/10.31646/gbio.247>.

<sup>7</sup> Ota, M., Badur, S., Romano-Mazzotti, L., & Friedland, L. (2021). Impact of COVID-19 pandemic on routine immunization. *Annals of Medicine*, 53, 2286 - 2297. <https://doi.org/10.1080/07853890.2021.2009128>.

<sup>8</sup> Hussain, S., Boyle, P., Patel, P., & Sullivan, R. (2016). Eradicating polio in Pakistan: an analysis of the challenges and solutions to this security and health issue. *Globalization and Health*, 12. <https://doi.org/10.1186/s12992-016-0195-3>.

<sup>9</sup> Ataullahjan, A., Ahsan, H., Soofi, S., Habib, M., & Bhutta, Z. (2021). Eradicating polio in Pakistan: a systematic review of programs and policies. *Expert Review of Vaccines*, 20, 661 - 678. <https://doi.org/10.1080/14760584.2021.1915139>.

<sup>10</sup> Meyers, K., & Thomasson, M. (2020). Can pandemics affect educational attainment? Evidence from the polio epidemic of 1916. *Cliometrica*. <https://doi.org/10.1007/s11698-020-00212-3>.

<sup>11</sup> Namageyo-Funa, A., Greene, S., Henderson, E., Traore, M., Shaukat, S., Bigouette, J., Jorba, J., Wiesen, E., Bolu, O., Diop, O., Burns, C., & Wassilak, S. (2024). Update on Vaccine-Derived Poliovirus Outbreaks — Worldwide, January 2023–June 2024. *Morbidity and Mortality Weekly Report*, 73, 909 - 916. <https://doi.org/10.15585/mmwr.mm7341a1>.

<sup>12</sup> Hussain, S., Boyle, P., Patel, P., & Sullivan, R. (2016). Eradicating polio in Pakistan: an analysis of the challenges and solutions to this security and health issue. *Globalization and Health*, 12.

1. Political Instability & Security Threats - Ongoing conflicts, militant resistance, and attacks on health workers create barriers to vaccination campaigns.
2. Vaccine Misinformation & Public Distrust - Extremist narratives fuel vaccine hesitancy, particularly in rural and conservative communities.
3. Displaced Populations - Refugees and internally displaced persons (IDPs) lack consistent healthcare access, worsening immunization coverage gaps.
4. Funding Mismanagement - Reports suggest corruption in polio eradication funds, reducing the effectiveness of programs.

In spite of these obstacles, global health organizations persist in making substantial investments in eradication initiatives. The GPEI's strategy for 2022–2026 designates \$4.8 billion to enhance surveillance, optimize vaccine distribution, and tackle political obstacles (GPEI, 2022)<sup>13</sup>.

This research investigates these challenges and possibilities, delivering a comparative assessment to recognize practical solutions for eliminating polio in Pakistan and Afghanistan<sup>14</sup>

**Methodology:**

This study employs a systematic literature review to analyze the barriers and opportunities for polio eradication in Pakistan and Afghanistan. The methodology is structured to ensure comprehensive data collection, accurate analysis, and reliable findings.

**1. Literature Search Strategy**

A systematic search was conducted across leading academic databases, including:

- PubMed
- Google Scholar
- Scopus

Search terms included:

- "Polio in Pakistan"
- "Polio in Afghanistan"
- "Challenges in Polio Eradication"
- "Vaccination Barriers and Public Health"

The search focused on peer-reviewed publications from 2010 to 2023 to ensure relevant and recent evidence.

**2. Inclusion and Exclusion Criteria**

**Inclusion Criteria:**

- Peer-reviewed articles on polio transmission in Pakistan and Afghanistan.
- Studies analyzing geopolitical, social, and public health factors.
- Publications between 2010–2023 in English.

**Exclusion Criteria:**

- Studies outside the **geographic** scope (e.g., polio in other regions).
- Non-peer-reviewed sources (e.g., **opinion pieces** or media reports).
- Articles published before 2010.

**3. Data Extraction and Analysis**

Relevant data were extracted focusing on:

- Polio case numbers and geographic patterns.
- Barriers to vaccination (e.g., conflict, misinformation).
- Operational challenges (e.g., displaced populations, funding).

<https://doi.org/10.1186/s12992-016-0195-3>.

<sup>13</sup> Rachlin, A., Patel, J., Burns, C., Jorba, J., Tallis, G., O'Leary, A., Wassilak, S., & Vertefeuille, J. (2022). Progress Toward Polio Eradication — Worldwide, January 2020–April 2022. *Morbidity and Mortality Weekly Report*, 71, 650 - 655.

<https://doi.org/10.15585/mmwr.mm7119a2>.

<sup>14</sup> Hussain, S., Boyle, P., Patel, P., & Sullivan, R. (2016). Eradicating polio in Pakistan: an analysis of the challenges and solutions to this security and health issue. *Globalization and Health*, 12. <https://doi.org/10.1186/s12992-016-0195-3>.

A thematic analysis was conducted to identify recurring themes and compare the socio-political and public health factors affecting polio eradication in both countries.

The article selection process is summarized in Table 1, following PRISMA guidelines to ensure transparency in data collection and analysis.

Table 1: PRISMA Flow Diagram – Article Selection Process

Stage of Review Process	Number of Articles (n)
Records Identified	450 (from PubMed, Google Scholar, Scopus)
Duplicates Removed	120 (removed during initial screening)
Records Screened	330 (after duplicate removal)
Records Excluded	180 (irrelevant topics, outside research scope)
Full-Text Articles Assessed for Eligibility	150 (evaluated for inclusion)
Full-Text Articles Excluded	90 (did not meet inclusion criteria)
Studies Included in Final Analysis	60 (used for thematic and comparative analysis)

4. Expert Contextual Insights

Insights were supplemented by the author’s field experience in polio eradication campaigns, including direct involvement in Lot Quality Assurance Sampling (LQAS) And Post Campaign Monitoring community engagement in high-risk regions.

5. Ethical Considerations

No direct human data were collected. Ethical standards were maintained by accurately representing findings and citing all original research appropriately.

Results.

Efforts to eradicate polio in Pakistan and Afghanistan encounter substantial obstacles stemming from corruption, vaccine misinformation, and governance issues. In Pakistan, claims of improper fund management, especially in Baluchistan and Khyber Pakhtunkhwa, have interrupted the vaccine supply chain, lowering coverage in at-risk regions. The

improper use of resources impacts vaccine availability and also erodes public confidence in government-managed health initiatives.

Additionally, extremist organizations like Tehrik-i-Taliban Pakistan (TTP) persist in disseminating false information, asserting that vaccines lead to infertility or are an element of a foreign conspiratorial plot. This has increased vaccine reluctance, particularly in rural regions, further obstructing vaccination initiatives.

In Afghanistan, the political turmoil after the Taliban regained control in 2021 has greatly limited access to at-risk groups. More than 3.5 million children are still unvaccinated because of ongoing conflict and the ban on door-to-door vaccination in certain areas.

Even with global backing, these structural challenges continue to hinder the total elimination of polio, necessitating immediate reforms in funding transparency, community involvement, and vaccination distribution.

Factor	Description	Impact on Polio Eradication
TTP spreads misinformation about vaccines, claiming they cause sterility.	TTP spreads misinformation about vaccines, claiming they cause sterility.	Erodes public trust and hinders vaccination efforts
Funding Mismanagement	Polio funding is often misappropriated by officials, affecting program implementation.	Reduces the availability of vaccines in endemic regions.

<b>Endemic Regions</b>	Baluchistan and Khyber Pakhtunkhwa remain polio-endemic despite health initiatives.	Continued transmission of the virus in these areas.
<b>Government Dependency on Aid</b>	Government uses the polio crisis to secure international funding without accountability	Creates a cycle of dependency and lack of local ownership.
<b>Impact on Vulnerable Populations</b>	Many children do not receive necessary vaccinations due to misinformation and fear.	Increased risk of polio infections and related fatalities

**Current Status of Polio Cases in Pakistan & Afghanistan.**

**Pakistan cases from 2014 to 2024.**

From 2015 to 2024, Khyber Pakhtunkhwa consistently registered the most polio cases, reaching a high of 93 cases in 2019, which represented 63% of the national total cases for that year. Punjab, on the other hand, reported few or no cases for the majority

of years, with the exception of sporadic outbreaks in 2019 and 2024. Although Sindh showed varying trends, Baluchistan saw a revival in 2020, reporting 26 cases, thus becoming the second-highest contributor for that time. These trends emphasize geographic differences in polio spread, pointing out particular high-risk areas that need focused intervention approaches.

Province	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Punjab	2	0	1	0	12	14	0	0	0	1
Sindh	12	8	2	1	30	22	0	0	2	23
Khyber-Pakhtunkhwa	33	10	1	8	93	22	0	20	4	22
Baluchistan	7	2	3	3	12	26	1	0	0	27
ICT	0	0	0	0	0	0	0	0	0	1
GILGIT-BALTISTAN	0	0	1	0	0	0	0	0	0	0
AZAD JAMMU & KASHMIR	0	0	0	0	0	0	0	0	0	0
<b>TOTAL POLIO CASES</b>	<b>54</b>	<b>20</b>	<b>8</b>	<b>12</b>	<b>147</b>	<b>84</b>	<b>1</b>	<b>20</b>	<b>6</b>	<b>48</b>

The reported cases in Pakistan from 2015 to 2024 is shown in (Table 1.2)

**Current status of Afghanistan.**

In 2021, Afghanistan notably decreased wild poliovirus instances to four, a drop from 56 cases in 2020. The occurrences were concentrated in two areas: one in Andar District, Ghazni Province, and three in Imam Sahib District, Kunduz Province. The primary barrier contributing to the rise in cases was limited access; over 3.5 million children could not be

reached due to restrictions on house-to-house vaccinations and increased violence against vaccination personnel. The healthcare system faced increased strain from the COVID-19 pandemic, with vaccine hesitancy rates approaching 3% in some regions due to mistrust and misinformation. Political changes decreased the focus on eradicating polio, raising concerns about setbacks in progress. Over

time, the information regarding cases of polio shows significant fluctuations in the count of confirmed wild poliovirus (WPV) cases. In 1997, there were 19 confirmed instances, primarily attributed to WPV1 and WPV2. In 1998, the count of cases rose to 59, especially in WPV1 instances. The rise continued throughout 1999, peaking at 150 confirmed cases, primarily due to WPV1.

However, there was a drop in cases during the early 2000s, with just 11 confirmed cases noted in 2001 and a continued reduction in the subsequent years. In 2004, merely 4 instances persisted because of improved vaccination initiatives and health awareness campaigns. This downturn continued, reaching a low of 8 cases in 2003 and staying at single-digit figures for several years.

In 2007 and 2008, there was a slight rise in confirmed cases, with totals reaching 17 and 31, respectively. Following this, there were alternating increases and decreases until 2012, with 37 confirmed instances, partly due to the emergence of circulating vaccine-derived poliovirus type 2 (cVDPV2), first noted in 2009. By 2013, the confirmed cases fell to 14, showing that despite ongoing challenges, vaccination efforts significantly curtailed the transmission of polio. Overall, the data reveals a complex pattern of polio cases, with various years exhibiting both increases and decreases in response to changing public health strategies. The total confirmed cases and affected area of Afghanistan are listed in the table below (Table 1.3).

Year	Confirmed WPV Cases	Infected Districts	Endemic Areas
2011	80	32	Southern Region
2012	37	12	Southern Region
2013	14	4	Southern Region
2014	28	13	Southern Region
2015	20	8	Southern Region
2016	13	5	Southern Region
2017	14	7	Southern Region
2018	21	9	Southern Region
2019	29	15	Southern Region
2020	56	38	Southern & Eastern Regions
2021	4	2	Southern & Eastern Regions
2022	2	2	East Region
2023	6	2	East Region
2024	22	3	East Region

**Displaced Populations: A Hidden Catalyst for Polio**

**Transmission**

Population displacement in Pakistan and Afghanistan acts as a crucial but often overlooked factor in the spread of polio. In Pakistan, extensive military campaigns in Khyber Pakhtunkhwa and Baluchistan have uprooted thousands of families, compelling them to move to urban centers like Karachi and Islamabad. These heavily populated regions, characterized by poor sanitation and cramped housing

conditions, create perfect settings for the poliovirus to prosper. Displaced families frequently do not have consistent access to healthcare, resulting in children remaining unimmunized and heightening the risk of viral outbreaks.

In Afghanistan, the circumstances are even worse. More than 4.5% of the population continues to be displaced as a result of years of conflict. This extensive movement, along with the Taliban's restrictions on

door-to-door vaccination, has made millions of children inaccessible to health teams. Areas in rural regions controlled by the Taliban are still inaccessible for vaccination efforts, leading to isolated zones of susceptibility where polio persists.

A significant issue is the cross-border flow between Pakistan and Afghanistan, serving as a conduit for the wild poliovirus (WPV). Migrant groups and refugees frequently move between the two countries without adequate vaccinations, perpetuating an ongoing cycle

of reinfection. In the absence of coordinated vaccination initiatives across borders, the worldwide aim of eliminating polio will continue to be out of reach.

Addressing this problem necessitates joint efforts—boosted funding for mobile vaccination units, immunization checkpoints at borders, and improved monitoring to follow virus spread among displaced communities.

Operation	Duration	Area
Operation Enduring Freedom	2001–2002	Pakistan-Afghanistan border
Operation Al Mizan	2002–2006	South Waziristan agency (FATA)
Operation Zalzala	2008	South Waziristan agency (FATA)
Operations Sher Dil, Rah-e-Haq, and Rah-e-Rast	2007–2009	Bajaur and Mohmand agencies (FATA), Swat district (PATA)
Operation Rah-e-Nijat	2009–2010	South Waziristan
Operation Zarb-e-Azb	2014–2016	North Waziristan
Operation Khyber	2014–2016	Khyber Agency
Operation Radd-ul-Fasad	2017–Present	Khyber Pakhtunkhwa, Baluchistan

Table 1.4 shows the results of the operation and the region where its operated.

Alongside the refugee crisis, Afghanistan faces a greater prevalence of violent crime, measuring around 5.2, as opposed to Pakistan's 4.0. The prevalent violence and lack of law in ongoing conflicts are often seen as the main reasons for the increased crime rate.

Table 1.5 Additionally, Afghanistan displays greater

political instability with a rating of 5.0, compared to Pakistan's lower rating of 3.5. This clear difference underscores the difficult obstacles that Afghanistan encounters, not just in terms of displacement but also in upholding law and order and attaining political stability.

Criteria	Afghanistan	Pakistan
% Displaced Population	Approximately 4.5%	Approximately 1.5%
Level of Violent Crime	Approximately 5.2%	Approximately 4.0%
Political Instability	Approximately 5.0%	Approximately 3.5%

Table: (1.5) shows the comparison of Afghanistan & Pakistan criteria based.

**Conflict and instability are closely linked.**

Since the late 1970s, Afghanistan has been involved in numerous conflicts and wars, such as the Soviet invasion, the civil war, and the rule of the Taliban (Table 2.0). The long-lasting turmoil and violence have led to significant interruptions in the country's

healthcare system, posing a major challenge in conducting regular polio vaccination drives, particularly in conflict-stricken areas. Throughout the conflicts, many Mullahs and conservative communities spread false information about polio vaccination, believing it to be a Western plot without scientific proof. The distrust towards the government



and health authorities is a major obstacle in persuading parents to vaccinate their children. Afghanistan's varied cultural and religious environment has presented obstacles for campaigns to eliminate polio. Certain traditional communities and religious figures have been hesitant about accepting polio immunization, viewing it as not aligning with their beliefs and cultural practices. The challenging geography of Afghanistan has made it tough for healthcare workers to reach and immunize children in remote, hard-to-access areas. The logistical challenges have worsened due to insufficient infrastructure and bad road networks. Afghanistan's healthcare system was already weak and underfunded before the conflicts, and the prolonged instability has further eroded its capacity to deliver effective and consistent

polio vaccination services, Shortages of trained healthcare workers, poor cold chain management, and limited access to healthcare facilities have all contributed to the challenges. The disputes have resulted in widespread displacement of Afghan people within the country, creating difficulties in accessing and immunizing children in these at-risk areas. Additional challenges have been presented in managing and integrating displaced populations into the healthcare system. The Taliban's control over certain regions of Afghanistan has been a major obstacle, as the group has actively opposed polio vaccination campaigns, viewing them as a Western plot. This has made it extremely dangerous and difficult for health workers to access and vaccinate children in Taliban-controlled areas.

Conflict	Involved Parties	Start Date	End Date	Context
<b>Soviet-Afghan War</b>	Soviet Union, Afghan government (PDPA), Mujahideen	December 1979	February 1989	Soviet intervention to support a communist regime against Mujahideen resistance.
<b>Civil War</b>	Various Mujahideen factions, Taliban	1989	1996	Post-Soviet withdrawal led to power struggles; Taliban emerged as a dominant force.
<b>Taliban Rule</b>	Taliban, Northern Alliance	1996	2001	Taliban took control of Kabul and imposed strict Islamic law, resisted by the Northern Alliance.
<b>U.S.-led Invasion</b>	U.S., coalition forces, Taliban, Al-Qaeda	October 7, 2001	December 2001	Response to September 11 attacks; aimed to dismantle Al-Qaeda and remove the Taliban from power.
<b>Ongoing Conflict</b>	U.S. and NATO forces, Afghan government, Taliban	2001	2021	Continued insurgency by the Taliban against U.S. and Afghan forces.
<b>U.S. Withdrawal &amp; Taliban Takeover</b>	U.S. forces, Afghan government, Taliban	2021	August 30, 2021	U.S. withdrawal completed; Taliban regained control of Afghanistan, culminating in takeover of Kabul.

This (Table 2.0) format provides a clear overview of the conflicts in Afghanistan across the specified periods.

**Discussion.**

Polio eradication efforts in Pakistan and Afghanistan face significant challenges due to a complex interplay

of geopolitical factors, funding mismanagement, and public mistrust. Despite global reductions in polio cases, these two countries remain the last strongholds of wild poliovirus (WPV) transmission<sup>15</sup>. This section

<sup>15</sup> Hussain, S., Boyle, P., Patel, P., & Sullivan, R. (2016). Eradicating polio in Pakistan: an analysis of the challenges and solutions to this security and health issue. *Globalization*

and Health, 12. <https://doi.org/10.1186/s12992-016-0195-3>.

analyzes the shared and unique barriers in both nations and highlights critical policy recommendations for achieving complete polio eradication.

Prolonged conflict and political instability in Afghanistan remain the most significant barriers to polio eradication. Since the Taliban's return to power in 2021, access to vulnerable populations has become increasingly restricted<sup>16</sup>. Over 3.5 million children remain unreached due to security risks and the ban on door-to-door vaccination in Taliban-controlled regions. This ongoing conflict has led to regional disparities in polio incidence, with the Southern and Eastern provinces being the most affected. While Afghanistan faces conflict-driven barriers, Pakistan's challenges primarily stem from governance issues, including the mismanagement of international aid. In Khyber Pakhtunkhwa and Baluchistan, rebel groups such as the Tehrik-i-Taliban Pakistan (TTP) and the Baluchistan Liberation Army (BLA) target health workers, making vaccination campaigns hazardous. These regions report higher polio cases due to inconsistent immunization efforts and a lack of public cooperation<sup>17</sup>.

A major challenge in both countries is financial mismanagement. Despite significant international investment, particularly from the Global Polio Eradication Initiative (GPEI), the misuse of funds limits the reach of vaccination programs. Critics argue that heavy government reliance on foreign aid,

coupled with a lack of transparency, exacerbates the problem. Addressing these financial gaps requires stronger transparency measures and local accountability to ensure vaccination funds effectively reach at-risk communities<sup>18</sup>.

Despite their differing political contexts, Pakistan and Afghanistan share three major obstacles to polio eradication. First, access to conflict zones remains limited, as health workers face physical danger and movement restrictions, preventing vaccine delivery. Second, misinformation fuels vaccine hesitancy, with extremist narratives suggesting that polio vaccines cause infertility or are part of foreign agendas. Third, both countries struggle with inconsistent financial management and transparency, reducing the effectiveness of vaccination programs. The situation is further complicated by cross-border migration, which enables the virus to circulate between regions and sustain the risk of new outbreaks. Without effective cross-border coordination, polio eradication remains incomplete<sup>19</sup>.

To overcome these barriers, both countries must adopt a collaborative approach based on three key strategies. First, implementing coordinated cross-border immunization programs at border checkpoints can prevent the virus from spreading between the two nations. Second, enhancing financial oversight through independent audits and local accountability mechanisms will ensure the transparent use of international aid<sup>20</sup>. Third, engaging communities

<sup>16</sup> Sabawoon, W., Seino, S., Pason, B., Momin, N., Kanamori, S., Bender, C., & Takemura, K. (2024). Progress in Access and Oral Polio Vaccine Coverage Among Children Aged <5 Years in Polio Campaigns After the Political Change in Afghanistan.. *The Journal of infectious diseases*. <https://doi.org/10.1093/infdis/jiae129>.

<sup>17</sup> Hussain, S., Boyle, P., Patel, P., & Sullivan, R. (2016). Eradicating polio in Pakistan: an analysis of the challenges and solutions to this security and health issue. *Globalization and Health*, 12. <https://doi.org/10.1186/s12992-016-0195-3>.

<sup>18</sup> Shahzad, M., Abbas, M., Quddoos, M., Rahim, M., Naheed, K., Iqbal, M., Siddiqi, A., & Adeel, M. (2024). Economic, social, and administrative barriers to achieving the sustainable development goal of good health and well-being. *Journal of Infrastructure, Policy and Development*. <https://doi.org/10.24294/jipd.v8i11.8109>.

<sup>19</sup> Shakeel, S., Brown, M., Sethi, S., & Mackey, T. (2019). Achieving the end game: employing "vaccine diplomacy" to eradicate polio in Pakistan. *BMC Public Health*, 19. <https://doi.org/10.1186/s12889-019-6393-1>.

<sup>20</sup> Tonzer, L. (2015). Cross-Border Interbank Networks, Banking Risk and

through culturally sensitive campaigns can help dispel vaccine misinformation and build public trust by involving local leaders in vaccination efforts. By strengthening these areas, both countries can not only reduce polio transmission but also improve overall public health infrastructure in vulnerable regions. Regional cooperation, financial transparency, and community-centered strategies are essential for achieving the global goal of polio eradication<sup>21</sup>.

### Conclusion:

The ongoing struggle to eliminate polio in Pakistan and Afghanistan highlights a intricate combination of historical, political, and socio-economic elements. Both nations have achieved progress in decreasing instances of polio with thorough vaccination efforts; nevertheless, there are still substantial obstacles. In both countries, attempts to address these challenges have been significantly hindered by political instability, vaccine misinformation, and threats to the safety of healthcare workers. In Pakistan, problems like corruption and mishandling of funds make the

situation even more difficult, reducing public trust and restricting access to vaccinations. In the meantime, the continued conflict and displacement issues in Afghanistan impede efforts to reach vulnerable populations effectively. In order to reach the objective of eliminating polio completely, it is crucial for both nations to implement a multifaceted approach that focuses on transparency in financing, improves community involvement, and bolsters local governance. Investing in healthcare infrastructure and ensuring the safety of vaccination workers is crucial to guaranteeing continuous access to vaccination services.

To sum up, although past achievements show substantial advancement, the present situation underscores the critical requirement for continuous global cooperation, creative public health tactics, and a dedication to confronting the fundamental reasons for polio spread. Only by making these efforts can Pakistan and Afghanistan have a chance to eradicate polio and safeguard generations to come.



---

Contagion. *Journal of Financial Stability*, 18, 19-32.

<https://doi.org/10.1016/J.JFS.2015.02.002>.

<sup>21</sup> Ali, S., & Altaf, S. (2021). Citizen trust, administrative capacity and administrative

burden in Pakistan's immunization program. , 4.

<https://doi.org/10.30636/JBPA.41.184>.