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**Polio Resurgence in Pakistan:  
Challenges and policy options**

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Imran Saqib Khalid and Sofia Akram



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Mailing Address: PO Box 2342, Islamabad, Pakistan.

Telephone ++ (92-51) 2278134, 2278136, 2277146, 2270674-76

Fax ++(92-51) 2278135, URL: [www.sdpi.org](http://www.sdpi.org)

## **Abstract**

The world has become polio-free except Pakistan and Afghanistan. In 2019, over 10 million children in Pakistan were vaccinated under Global Polio Eradication Initiative. Till May 10, 2020, there were 47 polio cases across the country.

Besides pointing out key challenges in the way of Pakistan's efforts against poliovirus, this policy brief highlights the problems posed by COVID- 19 to the polio campaign.

The study discusses major factors behind polio resurgence, which included high dropout rate, quality of vaccination, religious belief, security concerns, and community resistance. COVID-19 pandemic that has halted the polio campaign for the time being is also a matter of concern. The study suggests a collective response to mitigate the impact of polio in future. It also suggests linking of social protection schemes to polio programmes and pay more attention to the quality of vaccine.

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## Introduction

The global immunization campaign has made the world polio-free except for Pakistan and Afghanistan. Despite hectic efforts to eradicate polio, new cases regularly hit the newspaper headlines in Pakistan. Certain factors like insecurity, religious misconception, conflicts and illiteracy are seriously hampering Pakistan's efforts against polio (Hussain, Boyle, Patel & Sullivan 2016).

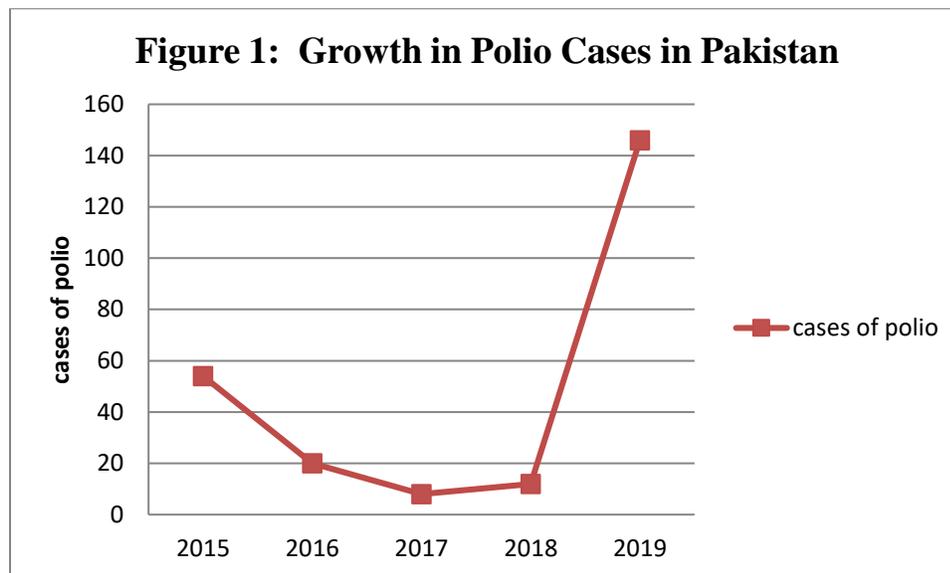
In 2019, 8.3 million children were vaccinated in house-to-house campaigns while 1.9 million children were vaccinated at 424 permanent transit points and district borders in order to provide them protection and enhance their immunity against polio virus (Global Polio Eradication Initiative 2019). Nevertheless, the same year, a total of 146 cases were reported in the country. Most of the polio incidences have been reported in Khyber Pakhtunkhwa (KP) and Balochistan. The number of polio cases continues to rise in 2020 and 47 more cases have been reported as of May this year, with majority emanating from Khyber Pakhtunkhwa<sup>1</sup>. The rise in number of polio cases in the country, as shown in the table below (and figure 1), is a matter of immense concern.

Province	2015	2016	2017	2018	2019	2020
Punjab	2	0	1	0	12	1
Sindh	12	8	2	1	30	17
Khyber Pakhtunkhwa	33	10	1	8	92	19
Balochistan	7	2	3	3	12	10
Gilgit-baltistan	0	0	1	0	0	0
Azad Jammu Kashmir	0	0	0	0	0	0
ICT	0	0	0	0	0	0
<b>Total polio cases</b>	<b>54</b>	<b>20</b>	<b>8</b>	<b>12</b>	<b>146</b>	<b>47<sup>2</sup></b>

Source: Pakistan polio eradication program

<sup>1</sup> <https://endpolio.com.pk/polioin-pakistan/polio-cases-in-provinces>

<sup>2</sup> The updated cases of polio till 10<sup>th</sup> May 2020



Source: Pakistan polio eradication program<sup>3</sup>

This study aims to point out the key challenges and hurdles which are hindering Pakistan’s efforts against polio. It further highlights the challenges posed by COVID- 19 to the polio campaign which now stands suspended due to the pandemic.

## 2. Methodology

This policy brief is based on a detailed desk review as well as a stakeholders’ consultation held in February this year. Participants mainly included experts from World Health Organization, officials from Ministry of National Health Services, Regulations and Coordination as well as media personnel.

It primarily focuses on five major challenges to polio eradication in Pakistan, which include dropout cases, quality of vaccination, religious belief, security concern and community resistance. In addition, the impact of the COVID-19 pandemic is also explored.

## 3. Factors behind polio resurgence:

The spread of polio virus in Pakistan has been fairly well researched, but the literature involving factors of resurgence is relatively scant. It is in this context that this study aims to highlight the factors that have caused the resurgence of polio in the country. These include a high dropout rate, quality of vaccination, religious belief, security concerns and community resistance. The COVID-19 pandemic is also expected to be a significant factor in the rise of cases in the future.

<sup>3</sup> For detailed information about data the following link can be check: <https://endpolio.com.pk/polioin-pakistan/polio-cases-in-provinces>

### **3.1 Dropout:**

Multiple doses (as many as 10) are required for a child to fully protect him/her against the polio virus. However, a significant proportion of children, who get the initial dosages, end up dropping out for various reasons hence hindering progress in terms of polio eradication. This section explores the reasons for children's "dropout" from the campaign.

Research shows that one out of five children did not complete the prescribed course of vaccination. One reason of polio dropout vaccination is education of parents. If the father has only been to primary school then the child is likely to dropout as compared to a child whose father is highly educated (Imran, Abbas & Javed 2018). Similarly, mother's education is also a very important determinant of child vaccination. The study highlights that an uneducated mother is directly linked with the no vaccination in the year 1990-1991 (Imran, Abbas & Javed 2018).

This can be attributed to the understanding of parents in terms of necessity for future and continual vaccinations in order for a child to be fully protected against the virus.

The main hub of polio in Pakistan is Afghan border, the erstwhile Federally Administered Tribal Areas or FATA (currently the part of KP) and Khyber Pakhtunkhwa (KP). Most children here had not been administered complete doses due to law and order situation, lack of health care facility and mismanagement of health institutions. Furthermore, there is a significant relationship between birth order and OPV dropout. The first and second baby of a couple has more chances to complete polio vaccination rather than third or after born baby. These findings can characterize mother's lack of attention due to increasing number of children. These results are supported by the findings of a study conducted in Kenya which depicts birth order as a significant predictor (Imran, Abbas & Javed 2018). Moreover, the number of girls in terms of dropout are higher than the boys. This is an issue that can be the subject of future research.

### **3.2 Quality of Vaccination:**

The polio vaccine is considered to be very safe and over dosage of vaccination is not considered harmful to human health. Pakistan is using same vaccine which has been successfully used by other countries for the polio eradication. A viable dose includes two drops of vaccination and it should be stored at 2-8 degree Celsius (World Health Organization 2002).

There are concerns that the quality of the vaccine has contributed to the rise of polio cases in the country. It is necessary to store vaccine drops and injections in cold containers. In some cases, absence of cold storage and non-functional cold chain equipment limits the antigen efficacy. The improper stocking of vaccination and lack of examination of existing units disturb the routine provision of vaccination. Moreover, other obstacles in the way of provision of vaccine are its shortage lack of transportation funds, missing records about consumable vaccine and lack of micro-plans for the service provision in catchment areas. In 2012, the estimated expenditure on transportation, monitoring and service provision was three to five percent of total programme expenditure (Hussain & Omer 2016; Khan & Qazi 2013). In this regard quality assurance mechanisms will be key.

### **3.3 Religious factor**

Religious fundamentalism is a major barrier in the way of immunization in Pakistan. The religious clerics mainly hinder implementation of polio vaccination campaign in some pockets of FATA. In 2007 Mullah Fazlullah, the leader of the Taliban in Swat, launched a campaign to denounce polio vaccination through his speeches on daily basis. According to him, polio vaccination was an American ploy to harm, sterilize and reduce Muslim population (Saleem 2011). Another propaganda by militant claimed that vaccinators are foreign spies. In this realm, the use of fake vaccinators to track down Osama Bin Laden also deeply damaged the cause of polio eradication in the country (Warrach 2009; Sheikh 2016).

Moreover, a group of Taliban banned polio vaccination, claiming that it was produced with the monkey and pig fat and hence it is forbidden in Islam. Owing to these misperceptions, KP including FATA has highest number of polio cases (Sheikh 2016). In Waziristan, Taliban leaders banned civil interventions like polio vaccination movement for security concerns in 2012 due to which almost 350,000 children could not be vaccinated from 2012-14.

Some Taliban militants also said that children who would suffer from polio or die of polio would be declared martyrs. Moreover, the local religious misconceptions and negative propaganda against the presumed adverse effects of vaccination led to local communities' refusal of vaccination [(Shakeel et al. 2019; Hussain et al. 2016)].

### **3.4 Security concerns**

Security concern is also very important issue in the eradication of polio in KP and FATA. In 2014, more than 300 cases were reported after the tribal leaders of North Waziristan Agency banned polio vaccination (Hussain, Boyle, Patel & Sullivan 2016). In 2012, there was a targeted killing of polio team workers and almost 40 vaccinators were killed. During the past few years, there have been reported kidnappings and beatings of vaccinators. Owing to such attacks, polio campaign has intermittently been suspended (Sheikh 2016; Warrach 2009).

### **3.5 Community resistance**

Community resistance and fake finger figure markings (which falsely show that a child has been vaccinated) are biggest challenges in the way of child immunization. Most parents refuse to administer polio drops to their children due to misconception about the vaccine. They believe that it will harm or sterilize their children. Such perceptions are prevalent in certain areas of KP. Parents mainly refuse to get their children immunized due to lack of awareness, doubts in terms of vaccine quality, misperception related to vaccination and low confidence in vaccinators.

Additionally, a rumor exists in KP related to side effects of polio vaccine, and disturbance in storage and transportation. Fake news, that hundreds of children were hospitalized after taking polio vaccination, has also been circulating. This creates mistrust among parents against vaccination (Ali et al., 2019). Moreover, people do not have awareness about the symptoms of polio and effect of polio in target child so they assume that it is a curable disease.

#### **4. Impact of COVID-19 Pandemic**

Since the beginning of 2020, the international organizations have stopped polio campaigns keeping in view the sensitivity of the COVID-19 pandemic. The health experts have warned that pandemic will result in new wave of polio and other infectious disease. The Geneva-based global polio eradication initiative (GPEI) has suspended polio vaccination campaign to tackle the spread of COVID-19 pandemic. The secretary-general of Pakistan Medical Association has said that post-COVID-19 situation will be worse due to the pending threats of other infectious disease, which are being ignored in order to deal with the pandemic.

According to national coordinator of the emergency operation center for polio eradication, 40 million children under the age of five in the country were to be vaccinated in April 2020, but this did not happen due to the COVID-19. The vaccination programme has been suspended till 31st May 2020. The disturbance of routine immunization has put millions of children at risk (Shabbir 2020). The current numbers of cases are significantly more as compared to previous years and this number will go up due to the suspension of polio campaign. (Khattak & Bezhan 2020).

According to WHO, the polio campaign has been suspended for two reasons, i.e. to use resources and frontline health worker in fight against COVID-19 pandemic, and to save polio workers running door-to-door as well as the community from the risk of coronavirus infection (Janjua 2020). The GPEI recommended to continue polio eradication programme initially by the end of June 2020. This programme will be adjusted according to the responses of COVID-19 pandemic (WHO 2020). The national coordinator of the emergency operation center for polio eradication said that they would modify the polio campaign to minimize the adverse impact of missed period (Shabbir 2020). However, there is an increasing concern that the suspension of polio eradication campaign will fuel a resurgence of the disease (Khattak & Bezhan 2020).

#### **5. Conclusion and Recommendations**

A recent surge in the number of polio cases in the country points towards the gaps present in the system. These gaps and challenges, highlighted in this study, not only pertain to socio-cultural and religious factors but also highlight the technical inefficiencies and capacity gaps integral to addressing the crisis. Moreover, the COVID-19 pandemic has significantly affected the campaign thus requiring a collective response from all the stakeholders.

Following recommendations are made to address the issue.

- Most of the research studies focus on the dynamics of low uptake or polio spread but ignore the reasons behind its resurgence. Rather than focusing exclusively on the coverage of polio vaccination, there is a need to focus on the dynamics of drop-out cases.

- Social protection programmes should be linked to polio programmes, as it may help raise the communal demand for immunization and provide wider health benefits to the affected areas.
- The local governments should provide foolproof security to the polio workers so that they might perform duties without any threat and fear. Use of digital technology such as global positioning system can be useful in this regard whereby the location of the workers is available to the managers.
- There needs to be greater focus on ensuring quality assurance of vaccines from the point of origin to the community level whereby the cold chain logistics and vaccine management take center stage.
- Amid COVID-19 pandemic, there is a need to devise and disseminate prevention and control guidelines to mitigate against the spread of outbreak during the polio eradication activities.
- Prayer leaders at local level should be sensitized to highlight the importance of child vaccination to the general masses. As such, they should denounce the conspiracy theories. This can be achieved through enhanced collaboration between Imam Masjids and local government representatives.

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