POLIO GLOBAL ERADICATION INITIATIVE

Meeting Report of the Technical Advisory Group on Poliomyelitis Eradication in Afghanistan and Pakistan

1–4 June 2023 | Doha, Qatar

MEETING REPORT OF THE TECHNICAL ADVISORY GROUP ON POLIOMYELITIS ERADICATION IN AFGHANISTAN AND PAKISTAN

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Acronyms

AFP	Acute Flaccid Paralysis
APMIS	Afghan Polio Management Information System
***b*OPV**	Bivalent Oral Polio Vaccine
CDC	Centers for Disease Control and Prevention
CIF	Case Investigation Form
***c*VDPV**	Circulating Vaccine-Derived Poliovirus
DOV	Directly Observed Vaccination
EMR	Eastern Mediterranean Region
EOA	Extended Outreach Activity
EOC	Emergency Operations Centre (National / Provincial)
EPI	Expanded Programme on Immunization
ES	Environmental Surveillance
ES+	Positive Environmental Sample
FFLW	Female Frontline Worker
***f*IPV**	Fractional Inactivated Polio Vaccine
FLW	Frontline Worker
GPEI	Global Polio Eradication Initiative
GPEI Hub	Global Polio Eradication Initiative Hub for Afghanistan and Pakistan
GWG	Gender Working Group
H2H	House-to-House
HCP	Health Care Provider
HRMP	High-Risk Mobile Population
IEC	Information, Education and Communication
IHR	International Health Regulations
IMB	Independent Monitoring Board
IPV	Inactivated Polio Vaccine
ISD	Integrated Service Delivery
KP	Khyber Pakhtunkhwa
LQAS	Lot Quality Assurance Sampling
M2M	Mosque-to-Mosque
NCC	National Certification Committee
NEOC	National Emergency Operations Centre
NID	National Immunization Day
NSTOP	National Stop Transmission of Polio
PCM	Post Campaign Monitoring
PEI	Polio Eradication Initiative
PHEIC	Public Health Emergency of International Concern
PRSEAH	Prevention of Sexual Exploitation, Abuse and Harassment
PTP	Permanent Transit Point
RI	Routine Immunization
ROSA	Regional Office for South Asia
S2S	Site-to-Site
SBCC	Social and Behaviour Change Communication
SIA	Supplementary Immunization Activity
SMC	Still Missed Children
SNID	Subnational Immunization Day
SOP	Standard Operating Procedure
TAG	Technical Advisory Group
UC	Union Council
UNICEF	United Nations International Children's Fund
WHO	World Health Organization
WPV	Wild poliovirus
WPV1	Wild Poliovirus Type-1
WR	WHO Representative

Acknowledgements

The Technical Advisory Group (TAG) acknowledges the efforts of Afghanistan and Pakistan teams, appreciates the courage and extraordinary commitment of frontline workers in both countries and pays tribute to the law enforcement officers who continue to sacrifice their lives to protect polio workers on the job. The TAG also commends the Pakistan programme for engaging frontline workers and co-designing programme operations using their inputs. Moreover, the TAG appreciates the Regional Reference Laboratory for Polioviruses in Islamabad for its continuous support of the Afghanistan and Pakistan Polio Programmes at the highest global standards.

Members of the TAG extend thanks to the State of Qatar for facilitating the hosting of their 15th meeting in Doha, Qatar. They also appreciate the pivotal role of the GPEI Hub for Afghanistan and Pakistan and the World Health Organization's Eastern Mediterranean Regional Office in restructuring the Technical Advisory Group meeting in 2023 to conduct a joint meeting for Afghanistan and Pakistan for the first time since 2007 and help assess progress in the countries and identify key remaining gaps and challenges needing the guidance of the TAG.

The Technical Advisory Group also notes the enhanced cross-border cooperation between Afghanistan and Pakistan and the revival of subnational coordination mechanisms across the border since their previous meeting in October 2022 and appreciates the role of both National Emergency Operations Centers and the GPEI Hub for Afghanistan and Pakistan in this progress.

Executive Summary

In June 2023, the 15th meeting of the Technical Advisory Group (TAG) on Polio Eradication was held in Doha, Qatar to evaluate the progress of polio eradication efforts in Afghanistan and Pakistan over the past six months. Before the in-person meeting, extensive pre-TAG consultations on key thematic areas were conducted virtually. The meeting provided a critical opportunity to review progress towards interruption of endemic poliovirus transmission and preparedness for responding to any polio outbreak in each country, cross-border coordination, supplementary immunization activities schedule for the second half of 2023, as well as forthcoming plans and strategies. The findings and recommendations of the TAG will contribute to the GPEI's mid-term strategy review and the report of the Independent Monitoring Board for polio eradication.

This report provides a comprehensive analysis of the TAG's deliberations, focusing on assessing the status of endemic zones in the East region of Afghanistan and southern districts of Khyber Pakhtunkhwa province of Pakistan, as well as outbreak districts and known historic reservoirs. Detailed attention is given to understanding the current wild poliovirus epidemiology and evaluating the surveillance and immunization efforts of both country programmes, as well as understanding the risks that remain to end polio, once and for all.

Several key conclusions emerged from the TAG's analysis of progress made towards eradication:

1. Wild poliovirus type-1 transmission is still endemic in both Afghanistan and Pakistan. However, the virus remains cornered to the smallest geographical area in the history of the eradication effort, with the number of genetic clusters restricted to just two. TAG concluded there remains a finite, but very real window of opportunity to stop transmission in 2023 but they noted that both countries must work quickly to implement recommendations, homing in on those strategies that will have the greatest impact to succeed and meet their goal of interrupting endemic transmission by end 2023.
2. The programme has missed the opportunity to interrupt transmission in the 2022-2023 low season. In Afghanistan, there is an expansion of infected districts within the East region. Closely related strains have been detected in an environmental sample in Kandahar, and across the northern corridor in a few districts of Khyber Pakhtunkhwa and in Lahore, Punjab. In Pakistan, detections of wild poliovirus type-1 in environmental samples outside the endemic zone of southern Khyber Pakhtunkhwa in 2022-23 confirm the spread of the virus to other parts of the country, however, strong outbreak response campaigns have prevented the re-establishment of transmission outside the endemic zone. Nonetheless, the recent expansion of transmission within the East region of Afghanistan and its spread is concerning given the advent of the high poliovirus transmission season.
3. The programme simply cannot afford to miss the opportunity again to stop endemic poliovirus transmission. The first goal of the Global Polio Eradication Initiative's strategy to interrupt transmission of wild poliovirus type-1 by the end of 2023 remains possible by the end of 2023, however, rigorous and quality implementation of TAG recommendations will be necessary to achieve the goal. The focus must remain steadfast on interrupting endemic

transmission in the East region of Afghanistan and the districts of southern Khyber Pakhtunkhwa in Pakistan and preventing the re-establishment of transmission in areas outside the remaining endemic zones with rapid outbreak response – particularly in the South region of Afghanistan, Karachi, and across the northern and southern corridors.

4. The TAG recommended that the two programmes continue to implement strategies according to the risk categorization model recommended in October 2022 by the TAG. Maintaining the momentum of political, security, and community support is a key ingredient for the programmes to reach every child across the two countries.
5. The most direct path to interrupting wild poliovirus type-1 transmission is through the implementation of high-quality house-to-house campaigns. Afghanistan should seize the opportunity by continuing an aggressive supplementary immunization activities' schedule of progressively improving quality campaigns in the East region to interrupt transmission as soon as possible. Pakistan should continue to employ innovative strategies to reach all children in southern Khyber Pakhtunkhwa, particularly, in the 69 union councils recently identified with the most missed children. The TAG recommends the programme in southern Khyber Pakhtunkhwa should continue to pursue innovative alternative approaches to reach children where the house-to-house vaccination campaign modality is compromised.
6. Considering the risk of a large outbreak of polio among the large number of under-immunized children in the South region and further spread of the virus, the TAG recommends that the national authorities should declare the detection of wild poliovirus type-1 in Kandahar a public health emergency in the region and implement a rigorous outbreak response in accordance with TAG recommendations and global guidelines for outbreak response.
7. TAG endorsed the proposed supplementary immunization activities calendars for the second half of 2023 and recommended that the endemic zones of East Afghanistan and southern Khyber Pakhtunkhwa province in Pakistan pursue an aggressive supplementary immunization activities' calendar that is independent of the nationwide schedule. The vaccination activities in the endemic zones should zero in on reaching all unreached children through repeated high-quality campaigns and other vaccination interventions, through integration with the Expanded Programme on Immunization and other health services.

Given the complex operating environment and unique risks in Afghanistan and Pakistan, the TAG presented each country with a tailored set of recommendations aimed at finally interrupting polio transmission by the end of 2023. These recommendations also cover key cross-cutting programmatic areas including cross-border coordination, programme integration with other health initiatives, improving the participation of women in the polio workforce and strengthening synergies with the Expanded Programme on Immunization. Each recommendation aims to guide the efforts of each country's programme for the rest of 2023 as they strive to close in on the remaining gaps that are preventing a polio-free world.

Introduction

A joint Technical Advisory Group[1] (TAG) meeting on polio eradication for Afghanistan and Pakistan was convened in Doha, Qatar, from 1-4 June 2023, under the auspices of the Regional Director of World Health Organization (WHO), Eastern Mediterranean Region (EMR), and in collaboration between the Global Polio Eradication Initiative Hub for Afghanistan and Pakistan (GPEI Hub) and the National Emergency Operations Centres (NEOCs) for polio eradication in Afghanistan and Pakistan.

Preamble

The year 2023 is a critical juncture for the Global Polio Eradication Initiative (GPEI) and marks 35 years since the programme embarked on its journey to eradicate poliovirus, which had been paralyzing children since at least 1580 B.C. In May 2023, the WHO Director General declared polio as the only public health emergency of international concern (PHEIC) under the International Health Regulations (IHR) in the world.

As the Global Polio Eradication Initiative (GPEI) has set the target of interrupting remaining wild poliovirus type-1 (WPV1) endemic transmission by the end of 2023 (first of the two goals of the "GPEI Strategy 2022-2026: Delivering on the promise of a polio-free world"), all eyes are on Afghanistan and Pakistan as they gear up to finish the job.

The meeting aimed to review and assess the status of polio eradication efforts over the past six months in Afghanistan and Pakistan. Considering the complex operating environment and risks in both countries, the meeting intended to provide recommendations for the programmes to finally interrupt transmission.

Moreover, the outcomes of this TAG will substantially inform the discussions at the 22nd Independent Monitoring Board (IMB) meeting in July 2023, and consequently, contribute to the GPEI mid-term strategy review in September 2023. The mid-term strategy review aims to ascertain whether the two main goals of the GPEI Strategy 2022-2026 can be met within the strategy timeline: interruption of endemic WPV1 and cessation of all outbreaks of circulating vaccine-derived poliovirus type-2 (cVDPV2) by end 2023.

Proceedings and Pre-TAG Preparations

The meeting was chaired by Dr Jean-Marc Olivé, Chair of the TAG with participation of seven TAG members and two temporary advisors to the TAG. Representatives of the State of Qatar from the Ministry of Health and Ministry of Foreign Affairs and from the World Health Organization Country Office joined the inaugural and concluding sessions. The Deputy Minister of Health Qatar joined the concluding session on behalf of the Minister of Health and reaffirmed the full support of the State of Qatar for polio eradication. The Regional Director of WHO's Eastern Mediterranean Region

[1] The TAG for Afghanistan and Pakistan is an independent body mandated as the principal advisory group for polio eradication and comprises of experts in the fields of epidemiology (field and molecular), pediatrics, communications, social behavioral change, and anthropology, serving on a voluntary basis.

(EMR) joined the inaugural session and assured the TAG and country programmes of his unflinching support. The Deputy Regional Director, of UNICEF's Regional Office for South Asia (ROSA), joined the concluding session and reiterated UNICEF's commitment to eradicating polio from Afghanistan and Pakistan.

Dr Nek Wali Shah Momin, NEOC Director, led the Afghanistan delegation, representing the Ministry of Public Health of Afghanistan. The national team included 13 members, whereby the regional Emergency Operations Centres (EOC) of the East, South and Southeast regions were represented by six members. Pakistan's polio eradication team was led by Dr Muhammad Fakhre Alam, the Federal Secretary of the Ministry of National Health Services, Regulation and Coordination. In addition to Dr Shahzad Asif Baig, NEOC Coordinator, the national team and Provincial EOCs of Khyber Pakhtunkhwa (KP), Punjab, Sindh and Balochistan were represented by 21 members. The extended national, regional, and provincial teams of both countries joined the meeting virtually.

The meeting was also attended by the National Expanded Programme on Immunization (EPI) Manager of Afghanistan and Director General for the Federal Directorate of Immunization of Pakistan, the Chairs of the Regional Certification Commission (RCC) for polio eradication in the EMR and the National Certification Committee (NCC) Pakistan, WHO Representatives (WRs) of Afghanistan and Pakistan, and UNICEF Country Representative, Pakistan. Participants included representatives of partner and donor organizations. For a full list of participants, see Annex 3.

TAG presented its summary of conclusions and recommendations on the afternoon of the fourth day after lengthy closed sessions and side discussions with country teams as per agenda (see Annex 4).

Before the in-person meeting, the TAG Secretariat (GPEI Hub/WHO EMR) convened 20 virtual pre-TAG consultative sessions (totaling 29.5 hours) on thematic areas of epidemiology and surveillance, immunization, and social and behaviour change communication (SBCC); as well as cross-cutting themes (programme management, EPI, gender, cross-borders, geopolitics, and security). Based on deliberations in the pre-TAG sessions, the TAG Secretariat provided guidance notes to the two country teams for focused discussions on remaining issues and solutions for program interventions in the second half of 2023.

Context

In October 2022, TAG recommended a major strategic shift focusing on a new risk categorization to ensure interruption of the remaining WPV1 during the low season of transmission. The new programme risk categories comprised of 1) WPV1 endemic transmission zones, 2) Outbreak response zone, 3) Risk Reduction districts and 4) districts to maintain population immunity against polio. Since then, both polio programmes have implemented most of the TAG's recommendations on surveillance, rapid outbreak response, campaign quality and routine immunization. Global polio eradication now depends on rapidly solving the remaining challenges in two small geographic areas with a combined total target of 2.2 million children (southern KP = 1,104,060 and East region = 1,144,312 children).

Both programmes have the knowledge, tools, and experience to succeed. However, significant political instability and changes, such as transition to interim provincial governments in Punjab and Khyber Pakhtunkhwa, the deteriorating economic situation and increasing insecurity in both countries and an overall complex humanitarian situation in Afghanistan are some of the main contextual risks for the programme.

The goal of interrupting virus transmission is still within reach if the key enabling factors, i.e., political commitment, community support and support of law enforcement agencies come together cohesively to ensure adequate implementation of strategies with optimal quality to reach all children.

Situation Analysis

WPV1 Epidemiology

Overview

Afghanistan and Pakistan continued to detect WPV1 throughout the low season of October 2022-March 2023. This circulation was primarily localized to the endemic transmission zones in Afghanistan - Nangarhar and Kunar provinces in the East region (where there are an estimated 933,532 children of target age (below 5 years))- and in Pakistan - the seven districts of southern KP in Pakistan (where there are an estimated 1,104,060 children of target age). With the start of the high season in April 2023, more polioviruses have been detected within and outside the East region endemic zone, with polio cases reported from Nangarhar province of Afghanistan (five), and positive environmental samples isolated in Kandahar (one) in the South region of Afghanistan, as well as in Peshawar and Hangu (five) in northern KP and in Karachi East (one) in Sindh province of Pakistan. All data reflected in this report are as of 3 June 2023.

While there had been multiple outbreaks (environmental detections of WPV1) in Pakistan since 2022, and more recently one outbreak in Afghanistan outside the endemic zones, there is no evidence to date of endemic transmission outside the East region of Afghanistan and southern KP in Pakistan. However, WPV1 importations across the northern corridor, and detections outside the endemic zones, reconfirm the risk of spreading to other parts within and across the two countries.

The remarkable reduction of genetic clusters from 12 in 2020 and four in 2021 to only two in 2022 noted by the TAG in their previous meeting in October 2022, remained true to date. The genetic cluster YB3C has remained restricted to Pakistan throughout 2022 and 2023 to date, while YB3A cluster which was detected only in Afghanistan in 2022, has also been detected in Pakistan since early 2023.

Brief WPV1 Epidemiology: 2022-2023

Afghanistan reported two WPV1 cases in 2022 from two districts; one each from the Southeast and East regions and five cases in 2023 from five districts; all from the East region, the only

endemic transmission zone in Afghanistan. WPV1 was detected in 22 environmental samples from four districts across two provinces in 2022 (Nangarhar and Kunar) and in 29 samples from five districts in three provinces (Nangarhar, Kunar and Kandahar) in 2023, so far. All WPV1 detections from Afghanistan since the previous TAG meeting are in the East region except a single detection in the South region (Kandahar province).

Pakistan reported 20 WPV1 cases in 2022 from three districts and one case in 2023 so far from one district all in the endemic zone of southern KP. A total of 37 WPV1 positive environmental samples (ES+) from 13 districts were reported in 2022 in Pakistan, including 13 positive samples from southern KP. In 2023, there are 10 WPV1 ES+ samples from six districts in 2023, only two of which are from southern KP. Outside of southern KP, of the 24 WPV1 ES+ samples detected in 2022 and 8 detected up to end May 2023, there is no evidence of further transmission of the imported strain in any of the 11 affected districts.

Endemic Transmission in Afghanistan

In 2023, all five WPV1 cases and 86% (25 out of 29) of the WPV1 positive environmental samples in Afghanistan are from Nangarhar province in the East region, and two out of the seven sites in this province are successively positive for five months (January to May 2023), one each in Batikot and Jalalabad districts. Moreover, all sites in both districts have detected WPV1 in April and May, this year. There has been no detection of WPV1 in Kunar province since February 2023.

All WPV1 isolates detected in 2022 and 2023 from East Afghanistan belong to the single YB3A genetic cluster. This cluster was restricted to East Afghanistan throughout 2022. Since early 2023, however, YB3A strains have been detected in seven environmental samples across three districts in Pakistan (Lahore in Punjab, and Peshawar and Hangu in KP), as well as one environmental sample in Kandahar city in the southern region of Afghanistan. These multiple detections of YB3A highlight the continued risk of cross-border transmission, particularly across the northern corridor, even though there is no evidence of YB3A transmission outside the East region of Afghanistan as of 3 June 2023.

Table 1: Environmental Surveillance Results in Endemic Provinces of Afghanistan 2022-2023

Province	District	Site Name	Start Date
Nangarhar	Batikot	AFG-NAN-BAT-BATTIKOT MANZ KALAY	4-Jul-19
	Jalalabad	AFG-NAN-JAL-ULFAT MENA	29-Jan-17
		AFG-NAN-JAL-SANGI QALA	25-Jan-15
		AFG-NAN-JAL-RADOR BRIDGE	25-Jan-15
	Behsud	AFG-NAN-BEH-PEZAND PANA DAFTER	5-Sep-22
		AFG-NAN-BEH-KUNARYANO KOCHA	2-Feb-22
		AFG-NAN-BEH-HADA FARM	25-Jan-15
Kunar	Asadabad	AFG-KUN-ASA-MANDACOOL	24-Jan-15
		AFG-KUN-ASA-KUZ KURUNA	1-Feb-22

The number of infected districts in Afghanistan due to WPV1 isolation from human or environmental surveillance has increased from one district in the period between 1 October 2021 to 1 June 2022 to seven districts in the corresponding period for 2022-2023.

Table 2: WPV1 Detections in the East Region, Afghanistan February 2022 – May 2023

WPV1 Detections in the East Region, Afghanistan Data as of 3 June 2023	1 Feb-2022 to 30 Sep-2022	1 Oct-2022 to 31 May-2023
No. of WPV1 Positive Environmental Sites	3	8
No. of Infected Districts due to WPV1 Positive Environmental Sites	2	4
No. of Polio Cases	1	5
No. of Districts with Polio Cases	1	5
No. districts with WPV1 detection in a case or a positive environmental sample	3	7

Endemic Transmission in Pakistan

In southern KP, since 1 October 2022 (since the previous TAG meeting) one case of polio has been reported from Bannu district with onset in February 2023. In addition, a total of five environmental samples have been positive for WPV1. Of these five environmental samples, two were from different sites in Bannu district (October and November 2022), two from different sites in DI Khan (November 2022 and February 2023), and one from South Waziristan Lower (April 2023). While southern KP has sustained transmission through the low season, there is a significant decline in the number of cases and positive environmental samples detected in 2023, and endemic WPV1

transmission is restricted to a more limited geographic area within southern KP as shown in the table below.

Overall, YB3C transmission has remained restricted to the districts of southern KP, the only endemic transmission zone in Pakistan during 2022 and 2023.

Table 3: WPV1 Detections in districts of southern KP, Pakistan February 2022 – May 2023

WPV1 Detections in Southern KP, Pakistan Data as of 3 June 2023	1 Feb-2022 to 30 Sep-2022	1 Oct-2022 to 31 May-2023
No. of WPV1 Positive Environmental Sites	4	5
No. of Infected Districts due to WPV1 Positive Environmental Sites	2	3
No. of Polio Cases	10	1
No. of Districts with Polio Cases	3	1
No. districts with WPV1 detection in a case or a positive environmental sample	4	3

Outbreak in Afghanistan

A single WPV1 detection in the ES from Kandahar province is reported in May 2023 during the TAG meeting. Detection of WPV1 in Kandahar is a significant risk for a polio outbreak. The South region has not detected WPV1 for ~27 months. This recent WPV1 detection in Kandahar is of serious concern given the fact that there is a large cohort of under-vaccinated susceptible children at imminent risk of a large outbreak of paralytic polio in the South region of Afghanistan, with potential for cross-border spread to Quetta bloc and Karachi in Pakistan.

Outbreaks in Pakistan

In 2022 all WPV1 detections outside the endemic transmission zone belonged to the YB3C cluster linked to the circulation in southern KP. In 2023, nine WPV1 detections from environmental samples have been reported outside the endemic zone in four districts. Among these, only one isolate is from the YB3C cluster and closely related to the strains circulating in southern KP. Seven isolates are from the YB3A cluster closely related to strains circulating in the East region of Afghanistan, and one is an orphan virus belonging to the YB3A cluster, not related to the strains currently circulating in the East region of Afghanistan.

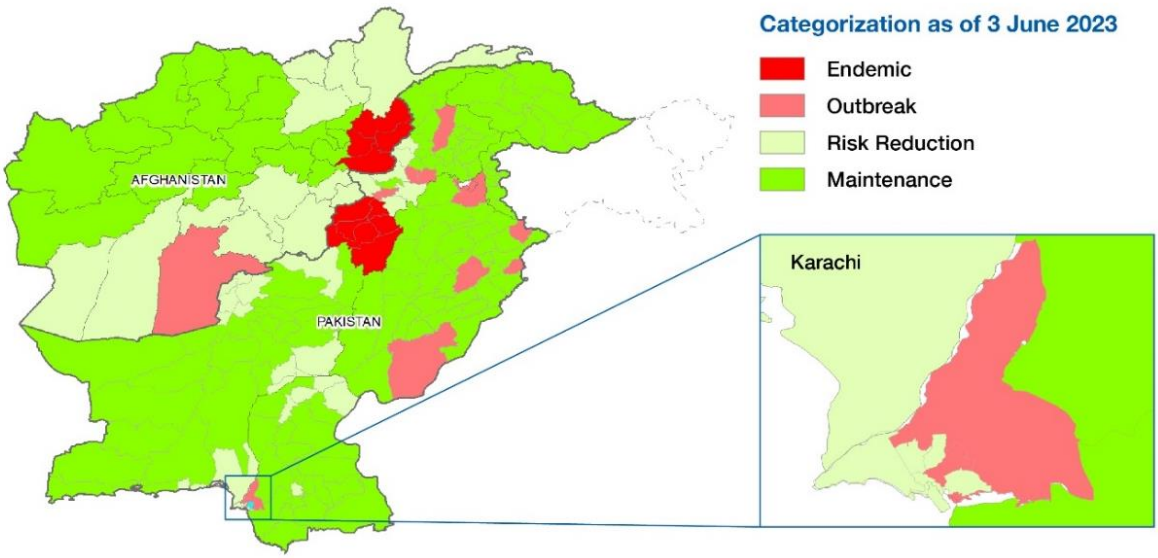
Strains from both YB3A and YB3C genetic clusters have been detected in environmental samples from Peshawar, and Lahore, and YB3A was detected in Hangu in Pakistan, highlighting the critical risk of transmission across the northern corridor.

The most recent WPV1 detection in Pakistan is in district Karachi East, from a positive environmental sample belonging to YB3A cluster. The detailed genetic analysis of this virus has shown that it is an orphan strain which was undetected for around four years. This poliovirus genetic cluster was previously known to be circulating in the Afghanistan-Pakistan Southern Corridor during 2019-2022. However, this isolation is genetically unrelated to Southern KP transmission observed during 2022 and 2023. This virus is also not directly related to WPV1

transmission currently active within Afghanistan. A subsequent environmental sample collected in June 2023 from the same site in Karachi did not detect the presence of wild poliovirus. Continued optimization and expansion of poliovirus surveillance, both acute flaccid paralysis (AFP) and environmental sampling, particularly among mobile and displaced populations, will be important to ensure timely detection of all WPV1 strains in Afghanistan and Pakistan.

These detections outside the endemic zones are a stark reminder that all areas in Afghanistan and Pakistan are at risk of polio infection until the endemic transmission is interrupted. Therefore, TAG suggests continuing implementation of the programme strategies as per the risk categorization model recommended in October 2022.

Graph 1: October 2022 TAG Risk Categorization for Afghanistan and Pakistan



Endemic Interruption	Outbreak Response	Risk Reduction	Maintenance
East region of Afghanistan and Southern KP of Pakistan	Districts with new detection of WPV1 outside the endemic districts	Very high-risk/consequential districts, historic reservoirs, and districts adjacent to infected districts	All other districts in Afghanistan and Pakistan

Modelling of WPV1 transmission in Pakistan and Afghanistan

To further consider dynamics of WPV1 transmission in Pakistan and Afghanistan, the TAG reviewed a model of WPV1 transmission under various assumptions of infection and vaccination during the period from June 2023 to May 2024.

Key findings of the model reinforce the recommendations of the TAG and highlight the main priority of interrupting endemic transmission in East region of Afghanistan and southern KP in Pakistan. If endemic transmission persists, the endemic zones will remain a source of spread within and across the two countries.

The model illustrated the following:

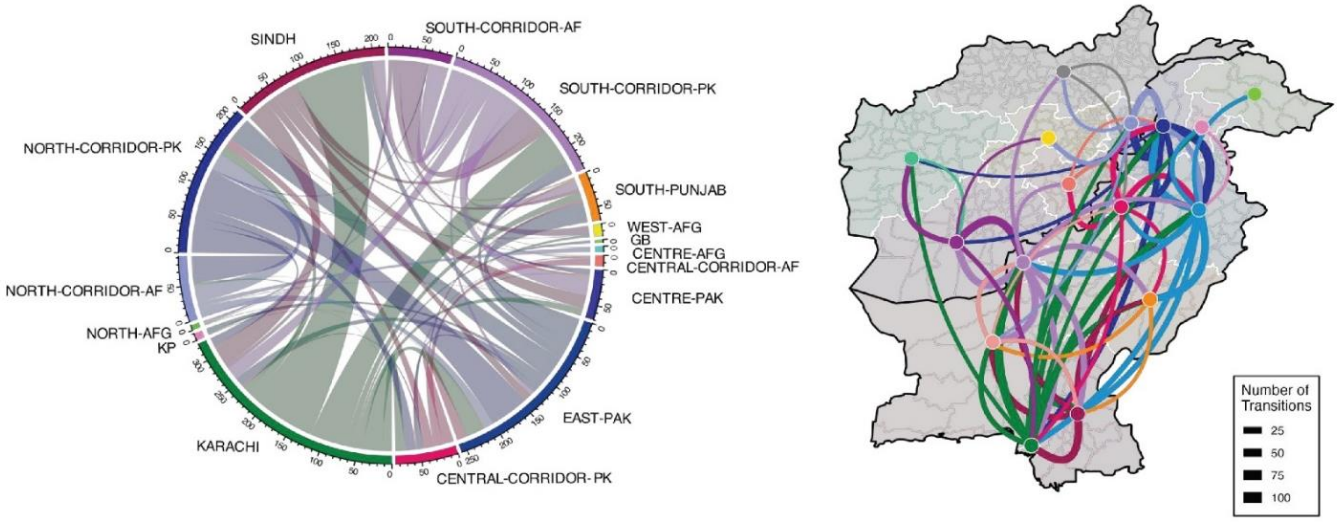
- Due to the current high levels of immunity achieved in East Afghanistan (from improved SIA quality and relatively higher RI coverage), the model shows transmission cannot be sustained in the East region. The persistence of transmission, however, indicates infection in either pockets of missed children in the target age group or children of older age. As recommended by TAG, ensuring these groups are consistently reached with high quality SIAs will be critical to interrupting transmission.
- If transmission is established in Greater Peshawar, East Afghanistan is likely to get reinfected, posing a greater challenge to interruption of transmission on both sides of the Northern Corridor.
- Implementation of planned SIAs substantially reduces geographic scope of transmission in southern KP. If ongoing transmission in southern KP is geographically focused and low, the planned SIAs can stop transmission by end 2023. There is, however, a considerable degree of uncertainty around the current levels of transmission in southern KP and around the extent to which the planned SIAs and innovative approaches will result in vaccination of persistently missed children, an essential requirement to interrupt transmission.
- If there is widespread transmission in southern KP, significant improvements in coverage of the planned SIAs and new approaches will be necessary to interrupt transmission in 2023.
- If there is ongoing transmission in South region of Afghanistan, the southern corridor (including Quetta Bloc) will require substantially improved quality of campaigns to interrupt transmission.

Priorities based on epidemiology

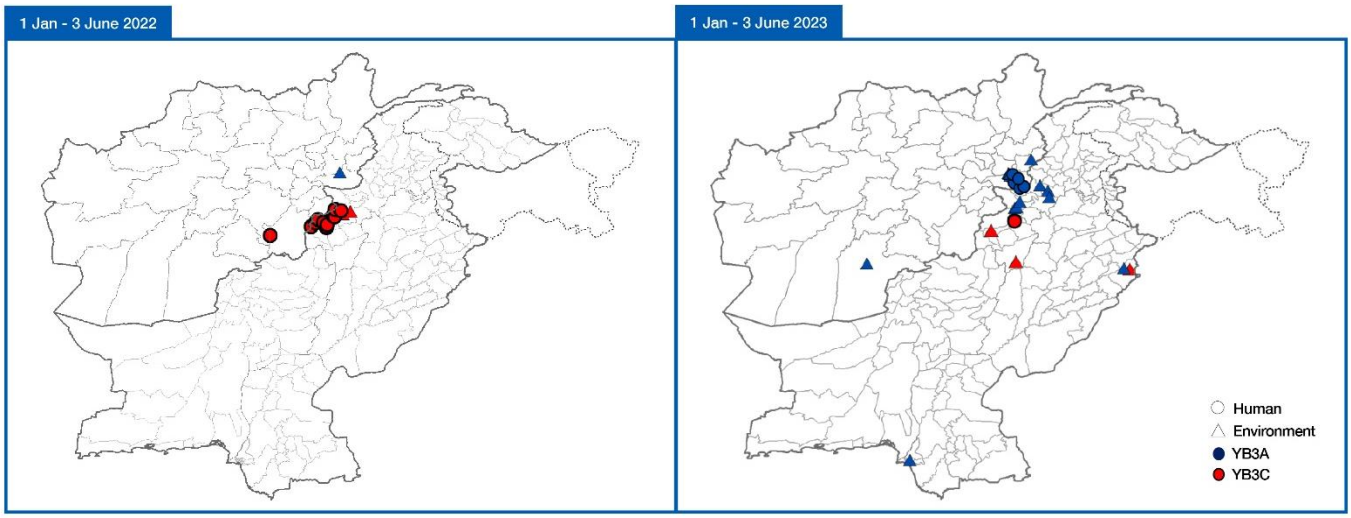
The epidemiological situation analysis in 2022 and 2023, and particularly since the previous TAG meeting in October 2022, highlight the following strategic priorities:

1. Stopping endemic transmission in the East region in Afghanistan and southern KP in Pakistan.
2. Rapidly and effectively conducting outbreak response to detections outside the endemic zones, particularly the most recent detections in Kandahar and Karachi.
3. Reducing the risk of an outbreak following a new WPV1 introduction in high-risk and historic core reservoirs not currently reporting WPV1, particularly the Quetta bloc.

Graph 2: Number of Lineages/Chains Exported from One Zone to Another Across Afghanistan and Pakistan, Showing the Greatest Exporters and Importers Based on the Historic Genetic Data of Poliovirus[2]

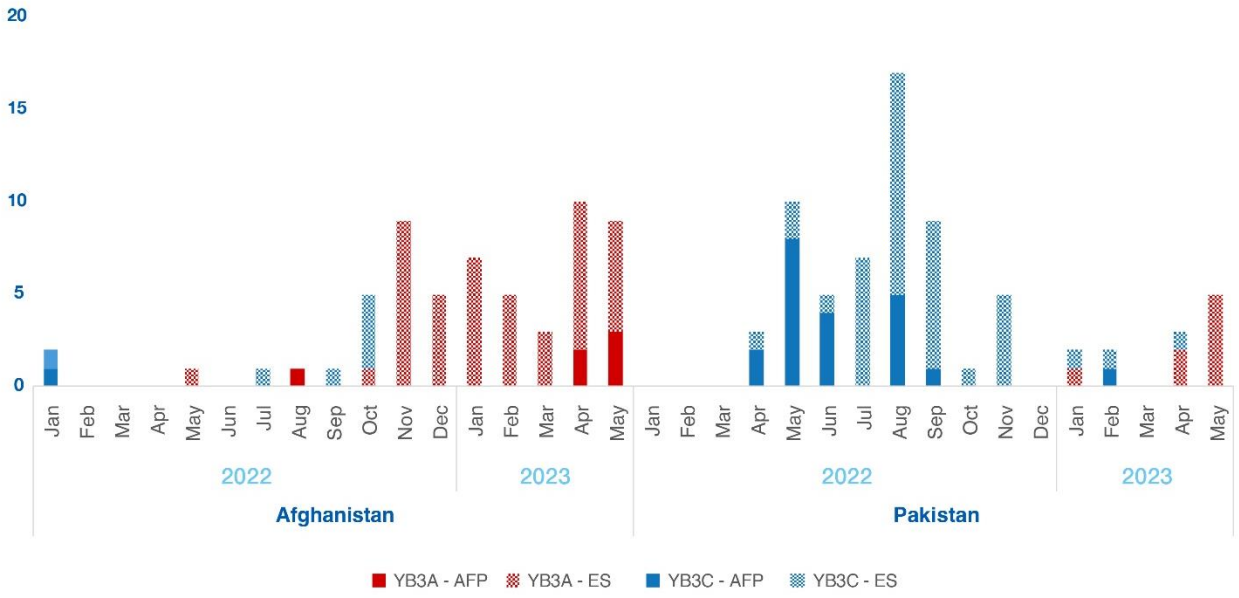


Graph 3: WPV1 Spot Map of Afghanistan and Pakistan, January-May (2022 and 2023), by Cluster



[2] MRC Centre for Global Infectious Disease Analysis and Imperial College London.

Graph 4: WPV1 Isolates (AFP and ES+) 2022-2023, Afghanistan and Pakistan, by Cluster



Surveillance

Overall, the surveillance systems in Afghanistan and Pakistan continue to be functional, responsive, sensitive, and expanding. Despite the high volume of work, the polio laboratory maintained its high performing standards. However, there is still evidence from genomic sequencing and surveillance reviews that suggest missed transmission (orphan virus detected in Karachi and other isolates ~1% divergent from the closest matches, missed AFP cases). However, there is a substantial decline in detection of orphan viruses, 21 detected in 2021 compared to one in 2023 so far. The recent detection of an estimated 4-year-old orphan strain in Karachi highlights the existence of populations, likely mobile and straddling borders, that are consistently not under surveillance net. This reinforces the importance of continued surveillance strengthening and expansion, including environmental surveillance.

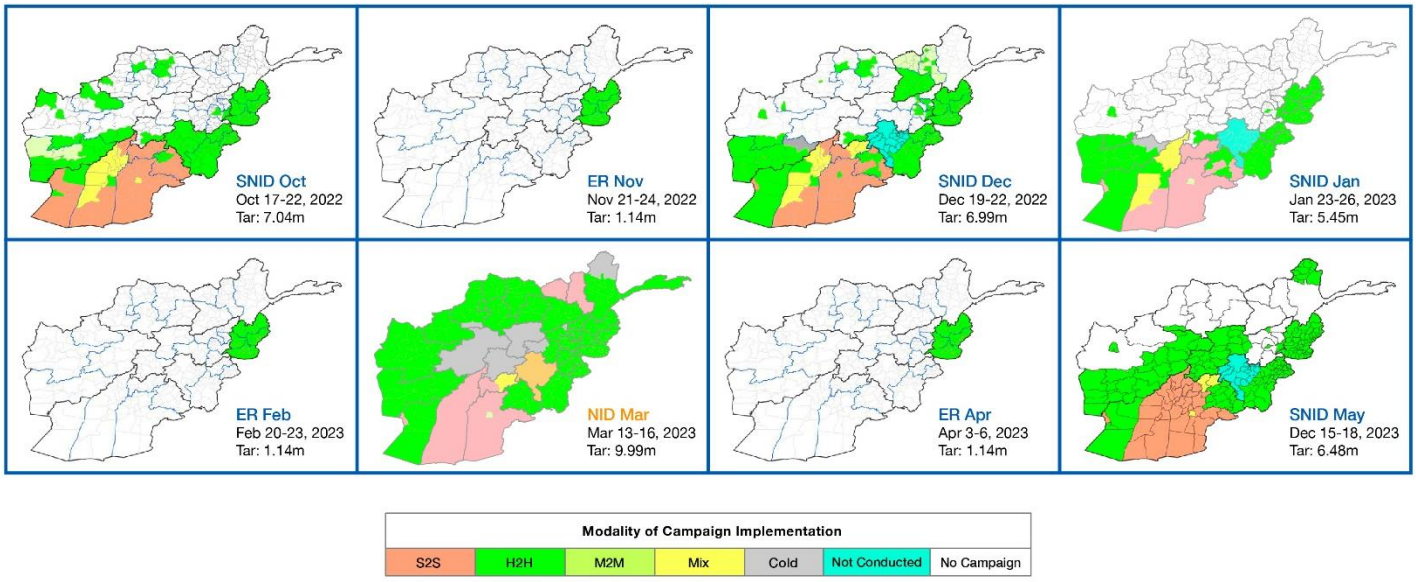
Both programmes have carried out international and internal field assessments of both AFP and environmental surveillance systems. Programmes should continue to optimize surveillance activities systematically keeping in view the recommendations of recent international and internal surveillance reviews and Global Surveillance Action Plan 2022-2024. The need for assuring adequate laboratory capacity before the expansion of environmental surveillance and any supplementary strategies for early detection of poliovirus cannot be overemphasized.

Immunization

Afghanistan and Pakistan polio programmes implemented intense vaccination activities since the TAG meeting in October 2022, with an extraordinary focus on endemic zones and enhanced complementary vaccination activities for access-compromised geographies and population groups.

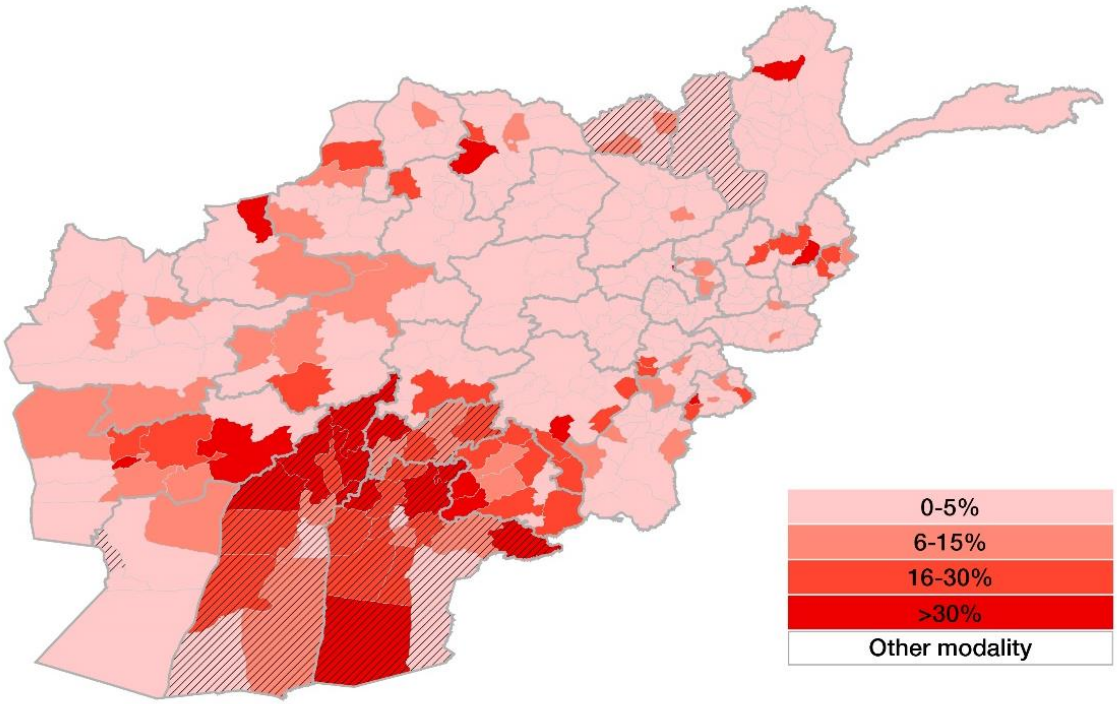
Afghanistan implemented a total of eight *b*OPV SIAs; with one national immunization day (NID), four sub-national immunization days (SNIDs), and three SIAs in the East region. However, there are areas where the ability of these SIAs to reach all children is compromised due to limitations on H2H immunization.

Graph 5: SIAs implemented in Afghanistan by Modality, June 2022 – May 2023



There has been a marginal improvement in the expansion of areas having a full H2H modality. Overall, full access to the H2H modality has slightly increased from 76% districts (71.8% target children) in June 2022 NID to 78% districts (72.2% target children) in March 2023 NID. Consequently, a large cohort of children comprising ~0.6 million children remain in areas where the H2H campaign is not fully implemented. Most of these missed children are living in the South region (~0.45 million), followed by the Northeast region (~0.15 million). This substantial cohort of susceptible children has the potential to be impacted by and fuel a large-scale outbreak.

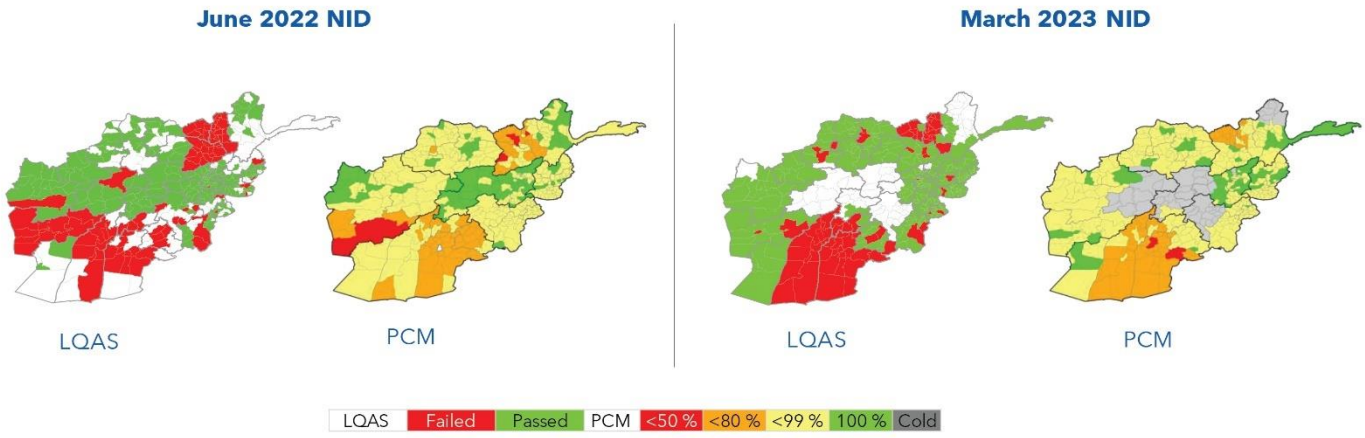
Graph 6: Map of Under-Immunized / Zero-Dose AFP Cases (%) in Afghanistan



Several steps were taken to improve the campaign quality, with priority attention on the East region. This includes a complete revision of the target population in H2H areas with validation of microplans after two years, selection of the frontline workers based on criteria, and the introduction of the Afghan Polio Management Information System (APMIS) to guide real-time measures in the East region. Overall campaign quality in most areas meets Lot Quality Assurance Sampling (LQAS) and Post Campaign Monitoring (PCM) standards except for in the South, where campaign quality is persistently low in areas without H2H modality.

Areas with persistently missed children remain due to alternate vaccination modalities or previously prolonged security challenges that existed until the regime change. The TAG expressed its concern regarding the communities across the South, Southeast, and East regions that have suffered from prolonged inaccessibility due to security concerns or reduced reach due to limitations on campaign modality. In some of these pockets, there may be children in the five-10 years age cohort that were not reached with vaccines. The recently reported polio case in an 11-year-old from East region was a reminder to focus on missed cohorts in the 24 districts in Nangarhar and Kunar, which were partially inaccessible before 2021 for more than four years. TAG also noted children missing vaccinations because of caregivers' refusal, especially among refugees and communities clustering in Southeast region and parts of East region. There is low coverage of routine immunization through the EPI, particularly in all polio-risk areas (South, Southeast, and Northeast).

Graph 7: LQAS/PCM Results for June 2022 and March 2023 NIDs – Afghanistan

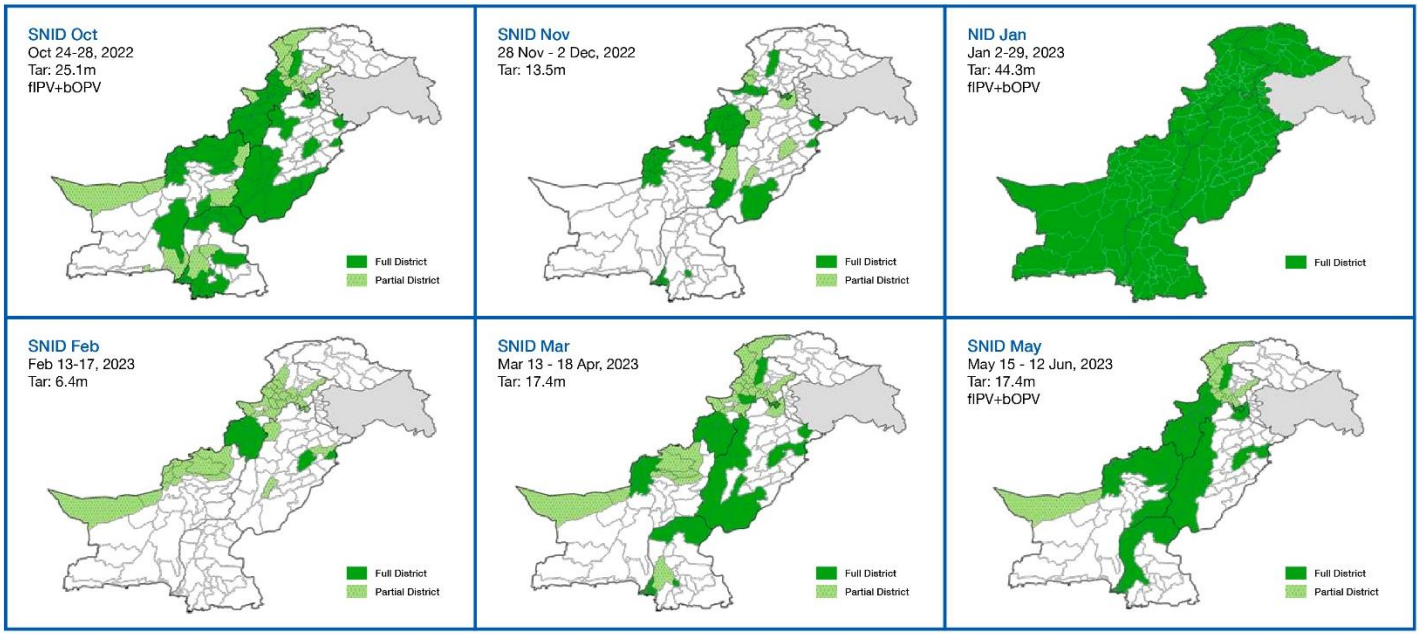


TAG also noted children missing vaccinations because of caregivers' refusal, especially among refugees and communities clustering in Southeast region and parts of East region. There is low coverage of routine immunization through the EPI, particularly in all polio-risk areas (South, Southeast, and Northeast).

In summary, there have been recent improvements in SIAs quality in the East region and elsewhere. The risk of polio outbreaks remains high in areas of Afghanistan where H2H campaigns are not being implemented.

Pakistan has implemented a total of six SIAs since the last TAG meeting in October 2022; with one NID and five SNIDs. *b*OPV was used in all SIAs, supplemented by fractional Inactivated Polio Vaccine (*f*IPV) in some of the southern KP districts in the October 2022, and the January and May 2023 rounds.

Graph 8: SIAs implemented in Pakistan by Scope, October 2022 – May 2023



In southern KP, the programme implemented its enhanced house-to-house (H2H) vaccination strategy that includes a Directly Observed Vaccination (DOV) of children. In each round, *b*OPV is administered to all children. *f*IPV is given in some of the rounds to children 2-59 months of age. All vaccinated children also receive soap. The vaccination campaign activity is implemented over three days followed by two days of catch-up. This is a key strategy to address issues of potential collusion and fake finger marking; and has yielded increased coverage, from 0.97 million in August 2022 SNID to 1.16 million children in the February 2023 SNID in all districts except South Waziristan Upper, where no mass vaccination campaign has been conducted since June 2022.

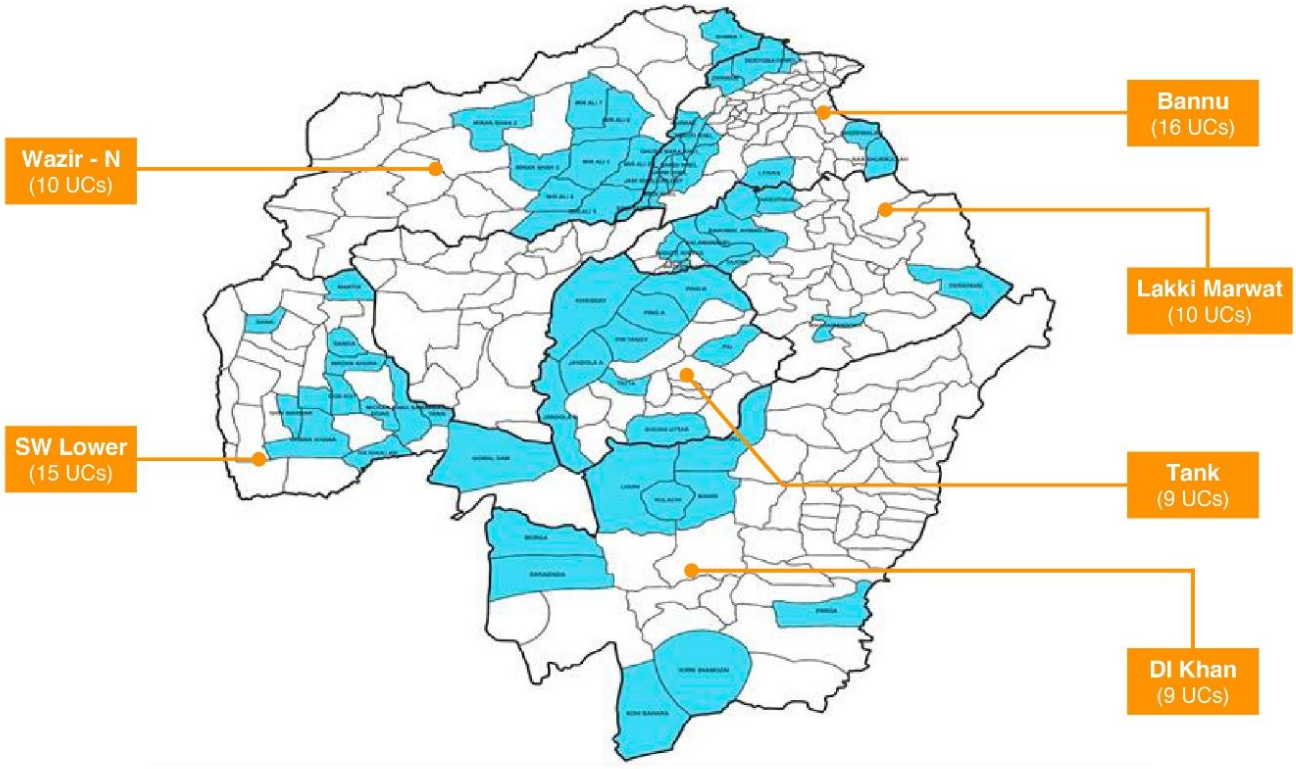
In southern KP, the number of still missed children (SMC) has also increased between August 2022 and February 2023. This increase is likely to be due to better reporting of vaccination outside the house and support to vaccination teams to accurately report missed children. There was an increase in the number of children missed due to boycotts and security-related challenges in the November 2022 and the March 2023 SNIDs. In the March SNID, the overall SMC remained at ~36K (3.3% of target), in addition to ~28K children in South Waziristan Upper. Since the introduction of the enhanced H2H strategy, the LQAS scores have shown mixed trends (ranging from 56% to 80%). South Waziristan district did not score 80% passed lots in any of the last 10 campaigns. According to LQAS and Post-Campaign Monitoring (PCM) results, 70% to 86% of all the children not vaccinated are missed due to operational failure (team did not visit or team missed the child). TAG expressed concern over the decrease in the scope of LQAS and PCM samples in southern KP while recognizing that corrective measures are now being taken in this regard.

The programme identified 69 UCs, among around 250 UCs, where an estimated 75% of all missed children in southern KP cluster. Targeted interventions are planned. TAG commended the analysis and the approaches being planned and encouraged allocation of programme's management,

human and financial resources to reach the persistently missed children in the 69 UCs. Synergy between the EPI and polio programme (hereafter EPI-PEI synergy) is helping the programme reach zero-dose children through extended outreach activities (EOAs) and the Nomad Vaccination Initiative through which mobile children of nomadic communities are being registered, vaccinated with polio and all EPI vaccines by vaccinators move on motorbikes to find these children.

In summary, there is evidence that more than 160,000 additional children have been reached with the enhanced H2H DOV strategy since August 2022. However, it is difficult to judge the overall effectiveness of this strategy in the context of southern KP, given the increase in proportion of missed children and the reduction in passed LQAS since then. Approximately 50,000 children remain unvaccinated, including almost 28,000 children in South Waziristan Upper. Therefore, even though there are some promising signals, the programme needs to continue to iterate and explore alternate and more effective means to connect with communities and reach all children.

Graph 9: Most Vulnerable UCs in Southern KP Selected for Special Interventions



Risks

Major contextual risks facing the programme in Pakistan include the uncertainty around the upcoming general elections. While the political transition in 2022 continued to demonstrate the highest political commitment for the programme, given the scale of the upcoming elections and growing overall insecurity, there is a risk of loss of focus at different administrative levels. In addition, as Pakistan remains one of the most vulnerable countries to climate change, the risk of catastrophic floods and heat waves can further exacerbate the already dire economic situation the country is grappling with.

In Afghanistan, along with the complex health and humanitarian environment, the fragile healthcare system makes the country prone to multiple disease outbreaks. Therefore, without unfettered access to all children through the optimal vaccination strategy (H2H), the programme faces the risk losing its hard-earned gains if there is a large polio outbreak.

From the programmatic perspective, the increasing endemic WPV1 circulation in the East region of Afghanistan and the persistence of WPV1 in the seven polio endemic districts in southern KP, Pakistan, the two endemic zones could seed more outbreaks in the current high transmission season. Moreover, the most recent orphan virus from Karachi underscores the risk of missing transmission, particularly in moving populations. Until the virus is interrupted in endemic areas, children across both countries remain at risk, particularly as seasonal and nomadic populations move along corridors that have historically contributed to the spread of poliovirus.

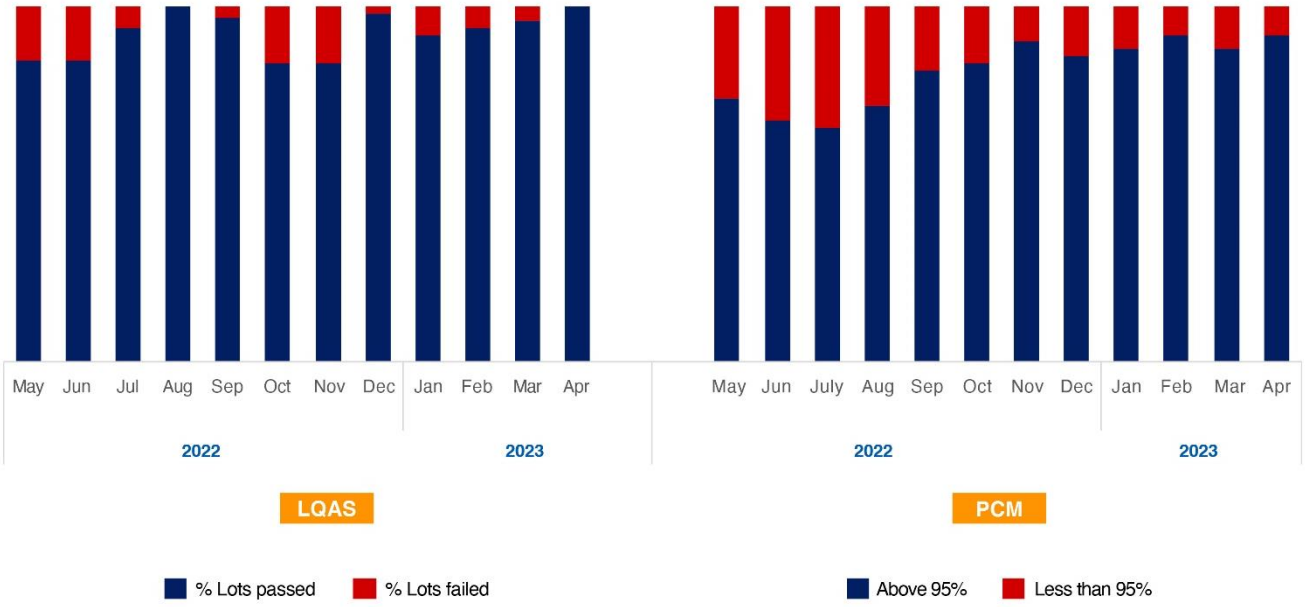
Findings and Recommendations

Endemic Areas

East Region of Afghanistan

There has been disruption to the implementation of vaccination campaigns in the East region during 2021 as campaigns remained suspended after March and resumed only in November. However, the modality from November 2021 to May 2022 was restricted to mosque-to-mosque vaccination. House-to-house vaccination campaigns resumed from May 2022, but their quality was compromised until the end 2022 due to interference and changes in the deployment of frontline workers, fear amongst workers and gaps in the quality of microplans and training. There has been a recent progressive increase in the quality of each vaccination campaign since December 2022. However, small clusters of chronic refusals persist. Among the missed children, around 30% were being missed because their caregivers refused vaccination.

Graph 10: LQAS and PCM Results in East Afghanistan (May 2022-April 2023)



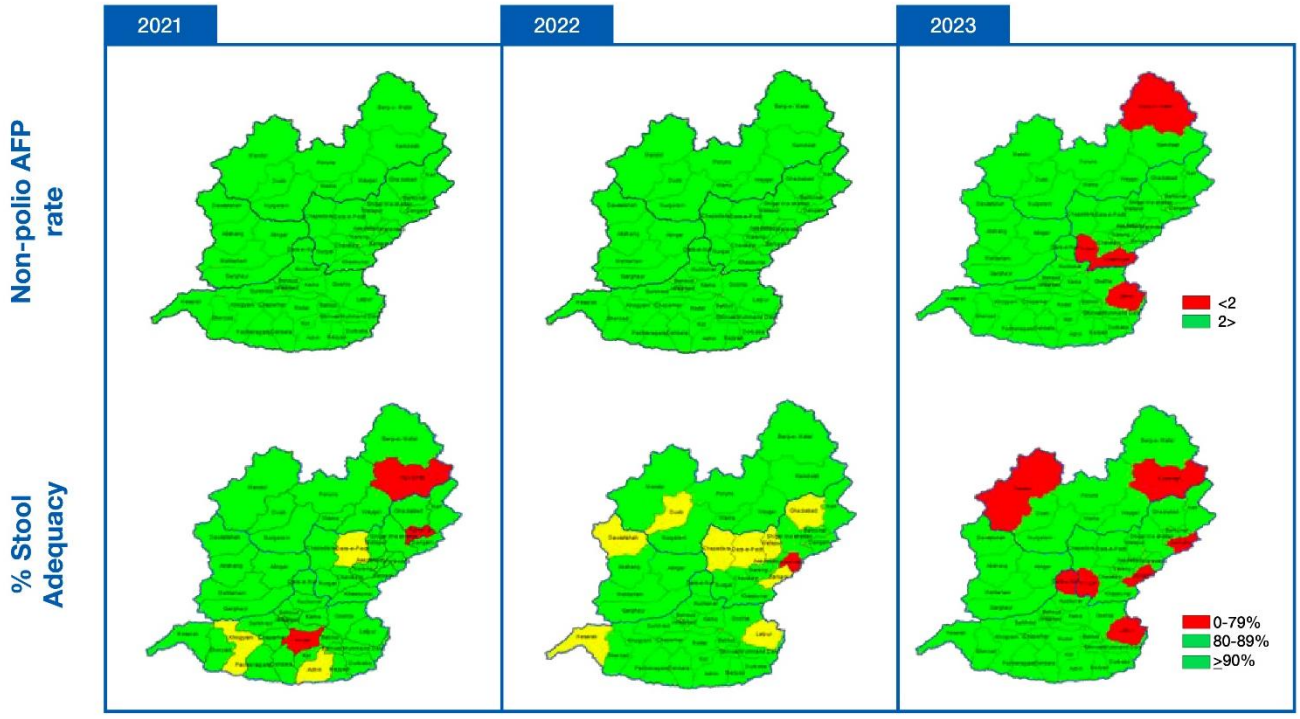
Surveillance

AFP Surveillance system performance indicators are reaching the global standards for endemic areas. A few pockets (low population districts) in 2023 are missing the target for stool adequacy. The system includes a network of health facilities in public and private sectors, and community-based surveillance. A total of 11 environmental surveillance sites are functioning in three

provinces, and each site has 100% entero-virus isolation rate between October 2022 and May 2023, which reflects good specimen handling and shipment practices.

In summary, the performance of AFP and environmental surveillance in the East region is strong. Further expansion of the environmental surveillance system where feasible would be more helpful.

Graph 11: AFP Surveillance Indicators of East Afghanistan by District, 2021-2023

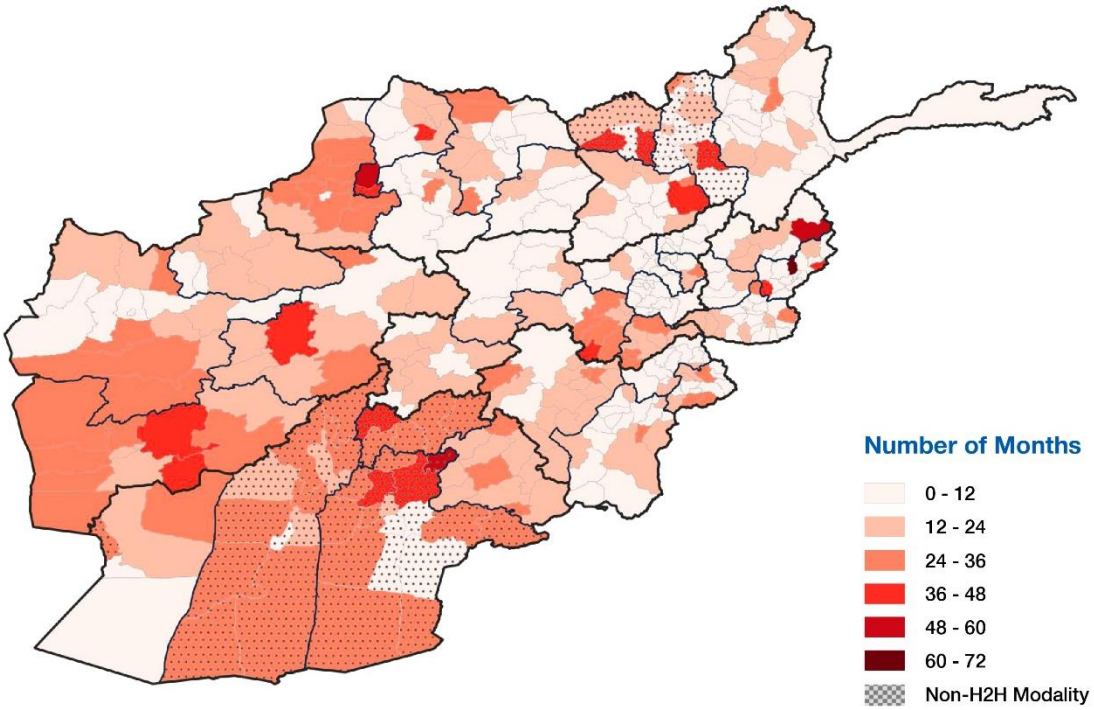


Immunization

Since October 2022, the programme has adopted an aggressive SIA calendar, as per the TAG recommendations, and implemented a series of intensified vaccination campaigns aimed at reaching all children in the endemic region. While the quality has improved significantly, there are potential pockets of susceptible children, including those between the ages of five and 10 years due to a history of inaccessibility in some communities.

TAG recognizes the programme's efforts to engage and reach communities through innovative approaches, such as floating teams, to reduce the number of persistently missed children. Additionally, TAG acknowledges the improvement in frontline worker capacity and interventions to improve campaign monitoring through shadow monitoring and validation of locked houses. The programme must adhere to the simple equation of identifying missed and low performing areas, maintaining full house-to-house access, and increasing campaign quality to capitalize on the opportunity to interrupt endemic transmission.

Graph 12: Map Showing Areas with Long-Term Inaccessibility in Afghanistan (In Months) Since 2012



Recommendations	
AFP surveillance	• Optimize reporting networks for timeliness: Identify causes through detailed analysis of AFP cases with inadequate specimen and take actions with aim of high proportion of AFP cases reported by first or second contact. • Improve immunization tracking of AFP cases: National surveillance team to review and modify the case investigation form (CIF) to include information on the first and second doses of IPV for all AFP cases.
Environmental surveillance	• Enhance further monitoring and evaluation of ES quality in the East. • In coordination with the regional lab in Pakistan, assess potential for further expansion of ES in epidemiologically associated geographies and communities with active transmission of related viruses in the East region.

Immunization	• Implement high-quality SIAs: ○ 4-6 weeks apart starting in July. ○ Finalize analysis of pockets with prolonged inaccessibility. Immunize zero-10 years-old children with *b*OPV in those areas (conduct one round and assess). ○ No need for *f*IPV currently. Programme should re-evaluate need in Q3. ○ mOPV1 is not available or needed. ○ No need for sero-surveys currently. Focus on continued quality improvement of campaigns. • Use social mapping and social listening to ensure that all communities, including mobile populations, are identified, understood, and effectively engaged in each SIAs. • Trial and systematically evaluate use of different plusses (soap, vitamin A, etc.) to optimise campaign quality in high-risk communities. • Continue surge of intense programme monitoring.

Southern Khyber Pakhtunkhwa

The seven polio-endemic districts in Khyber Pakhtunkhwa have proven to be some of the most difficult areas for polio eradication. However, the programme has approached these challenges with an innovative approach that is facilitated and supported by the political leadership and law enforcement agencies. The threat of insecurity, lack of health services, pockets of unimmunized and hard-to-reach children coupled with low routine immunization coverage, gaps in operational quality in SIAs, and demand-based refusals are some of the main challenges hindering success in these areas. Extensive movement of seasonal and nomadic populations to and from southern Khyber Pakhtunkhwa within Pakistan and across the border to Afghanistan, adds to the complexity of programme operations. The role of the South KP Hub, established in 2022, is central to tracking missed children, developing and testing innovative approaches to reach children and ensuring interruption of transmission.

Surveillance

The AFP surveillance system exceeds the thresholds for non-polio AFP detection but continues to have some concerning gaps in stool adequacy and timeliness of case notification that need to be addressed. District Bannu and Tank have stool adequacy below the threshold of 80%. Less than 80% of AFP cases are notified within seven days of onset of paralysis in North Waziristan and DI Khan districts. The information and analysis provided do not clearly indicate what component(s) of case identification, notification, investigation, and stool collection drives specimen inadequacy.

All districts have at least one environmental surveillance sampling site except South Waziristan Upper. All samples from all environmental surveillance sites have consistently found entero-viruses, reflecting good sample handling and shipment practices. Considering the programme's

focus on the 69 highest risk UCs, the programme better characterize coverage of the populations in these UCs with environmental surveillance.

In summary, AFP surveillance system performance is adequate in all districts except Bannu and Tank. Environmental surveillance system performance is adequate, as well. There is no ES site in South Waziristan Upper district.

Immunization

Given the complex operational environment, TAG acknowledged the programme's adaptive and innovative approaches, including the direct observation vaccination, plusses, advocacy through Ulemas[3] and refusal conversion committees, and targeted immunization efforts such as transit vaccination, Nomad Vaccination by vaccinators on motor bikes, and birth dose. However, while there has been encouraging progress, such as improvements in coverage in Bannu and Lakki Marwat and more than 160,000 additional children receiving the vaccine, there is a need for systematic and regular evaluation of the innovative approaches, particularly as monitoring data indicates clustering of operational gaps.

For the next six months, the programme has identified a strategy for "Reaching the Unreached" in 69 UCs that account for around 75% of the total missed children. The strategy has been developed after an extensive prioritization analysis. The effectiveness of this strategy will be evaluated based on the results.

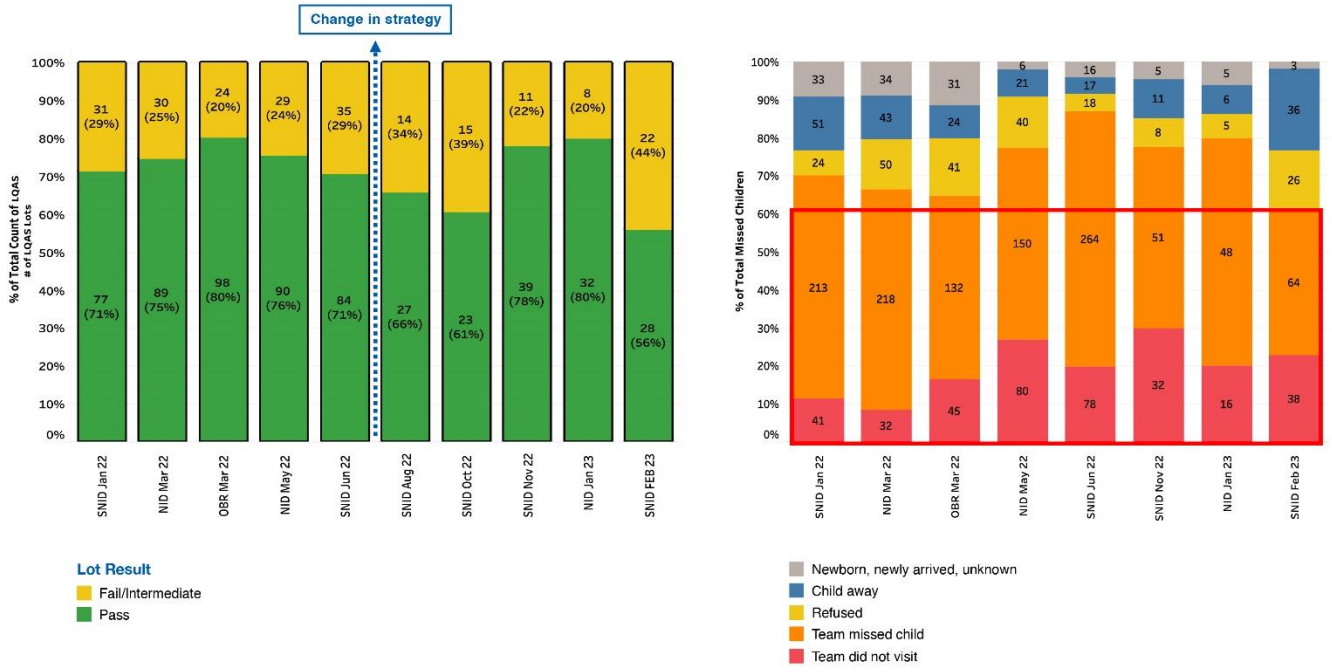
To enhance community acceptance and trust in the poliovirus vaccine, the programme is implementing a focused and integrated SBCC strategy that includes various interventions such as parental counseling, engagement with trusted influencers, single knock strategy, and engagement with female Madrassa.

TAG underscores that the most direct path to interrupting remaining endemic transmission in southern KP is to focus on multiple high-quality H2H campaigns and improving routine immunization. Success in Pakistan depends on finding approaches that will work within the existing context. The programme should continue to pursue avenues for high quality H2H campaigns in as many parts of southern KP as possible, while at the same time using alternative approaches in areas where reaching all children through H2H is compromised for one reason or another.

TAG expressed concern about reduction in measures of campaign quality like PCM and LQAS in southern KP.

[3] According to the Encyclopedia of Islam by Leiden: E.J. Brill (2nd edition): Ulemas are the guardians, transmitters, and interpreters of religious knowledge in Islam, including Islamic doctrine and law.

Graph 13: LQAS Pass Proportion and Reasons for Missed Children reported in LQAS in Southern KP districts (January 2022 – February 2023)



Recommendations	

Surveillance	• Implement southern KP Action Plan (updated based on Surveillance Review in North and South Waziristan and Bannu, with support of federal team):
	  • South KP Hub should ensure rapid root-cause analysis of late notification in multiple districts for consistency in surveillance performance at district and sub-district level across southern KP.
	  • Continue with systematic monitoring and evaluation of ES site quality, particularly the 'ad hoc' sites, and monitor sample shipment as a measure of quality assurance.
	  • Rapidly implement recommendations of the surveillance review to address the gaps identified (missed AFP cases, inadequate active surveillance visits, suboptimal reporting network).
	  • Continue to collect and analyse data on IPV in Case Investigation Forms (dose one and two)
	  • Ensure adequate laboratory capacity before considering further ES expansion.

Immunization	• The quality of existing SIAs is not sufficient across southern KP to stop transmission. Therefore, vigorously pursue higher quality SIAs to address persistently missed children across the seven endemic districts, and particularly in the 69 most vulnerable UCs.
	• TAG endorses, until end 2023, priority focus on 69 UCs, the 'Reaching the Unreached' strategy and recommends to:
	  • Ensure robust planning. Establish minimum "go/no-go" preparedness criteria.
	  • Design a social behavioural change package, co-designed with community input, to support optimal implementation of the 'Reaching the Unreached' strategy.
	  • Do not conduct July SNID in these areas and use the time for planning and preparing.
	  • In advance, articulate "success measures", agree how these will be measured, who will measure, and who will compile the analyses. South KP Hub should convene a 3-level partner review after each round. Adopt a rapid feedback learning mindset.
	  • Evaluate potential plusses based on community interests and feedback matched with operational, financial, and temporal feasibility. Be creative.
	  • Use experience of 'Reaching the Unreached' approach to inform what aspects need to be taken forward for SIAs in remainder of 2023.
	• The 69 vulnerable UCs identified in southern KP represent an important strategic focus for the programme to rapidly reach the bulk of persistently missed children during the next 6 months. This will require:
	  • The dedication of strong leadership and management.
	  • Allocation of necessary human and material resources, including plusses.
	  • High quality operations integrated with social mobilization.
	  • More intense independent and high-quality monitoring.
	• South Waziristan Upper: No Objection Certificate (NOC) should be issued urgently to implement planned vaccination activities. Restart mass immunization. Conduct a structured evaluation of options and impact and decide the way forward as a partnership.
	• Monitoring: TAG is concerned about the reduction in the scope of monitoring (especially LQAS and PCM). The programme must expand robust monitoring from July SIA/ 'Reaching the Unreached', across southern KP especially in the 69 UCs.
	• Clustered refusals and boycotts: TAG is concerned about stagnating or rising clusters, particularly North Waziristan. These are symptoms of larger social and operational issues that are not understood. The programme should identify appropriate expertise to understand these

	issues and provide a report and recommendation to the TAG by end of August. • Evaluate plusses and integrated services based on community input including nutrition options (e.g., high energy biscuits). • Boycotts: Continue to develop and expand social listening mechanisms to inform boycott prevention and resolution. Develop and test boycott prevention interventions through targeted exploration of integrated services, including through advocacy and partnering/collaborating with other humanitarian agencies capable of delivering against stated household needs in critical areas. Identify success criteria, measure, and conduct three level review at South KP Hub.

South KP Hub and Programme Management	• In the volatile situation of southern KP with the high level of uncertainty and unpredictability, TAG strongly recommends to:
	  • Ensure implementation of previous recommendations and fully staff the South KP Hub – consider additional social science and data analytic expertise and ensure full support.
	  • Review the current coordination mechanisms for the programme in southern KP. Convene experienced leaders within the programme, for example all EOC Coordinators, to help articulate a coordination and decision architecture - what needs to be decided, how it will be decided, who inputs and who decides, and when.
	  • Coordination structures at all three levels (South KP Hub, provincial and national EOCs) must enable effective and efficient action in the field.

Outbreak Response

As per the risk categorization model, TAG maintains that any WPV1 detection outside of the endemic zones should be dealt with as per the GPEI's Standard Operating Procedures (SOPs) on Outbreaks and Response adapted for endemic countries. Maintaining high levels of immunity is key to preventing the virus from finding any space to re-establish itself, particularly in the historic reservoirs that have seen an alarming decline in immunization rates. However, outbreak response should not take the focus away from the interruption of endemic transmission in either country, but rather managed in parallel.

In Afghanistan, there were no poliovirus detections outside the endemic zones between June 2022 and April 2023. The recent detection of WPV1 in Kandahar was notified during the TAG meeting and is the first detection outside the endemic zone, and constitutes a public health emergency, reiterating the urgency to respond with speed and efficiency. For Afghanistan, TAG recommends, high-quality vaccination responses are implemented through the recognized optimal modality of H2H campaigns. Furthermore, given the expanded reach through engagement with humanitarian actors in underserved areas, TAG encourages this approach to complement outbreak response in Kandahar.

Whereas in Pakistan, 11 districts have responded to outbreaks since June 2022. The country programme has demonstrated its ability to successfully respond to outbreaks, as evidenced by the timely and robust responses to detections. The tailored SBCC packages, including the introduction of female teams in areas where previously there was no participation of women, and tailored community engagement in slum areas was acknowledged by TAG.

The new detection in Karachi warrants swift and robust investigation and response like the one conducted in 2022 for the positive environmental isolate collected in August 2022 from the Malir district. Karachi is at risk of re-established transmission due to inconsistent vaccination campaigns and high exportation risk based on the historical genetic data.

Surveillance

The surveillance system overall (AFP and ES) in all outbreak areas is functioning well, based on the two key surveillance indicators (non-polio AFP rate and stool adequacy) that continue to meet the global standards at the district level for these areas with exception of few districts (below 80% stool adequacy in Peshawar, Rawalpindi, and few districts of Karachi). The environmental surveillance system is functioning well in these areas as reflected in the table below where all collected specimens except one had either WPV1 or sabin-like or non-polio enteroviruses (see the table below). The recent orphan virus from Karachi and few isolates in other areas with ~1% divergence (e.g.: Jalalabad, Behsud, and Durbaba in Afghanistan and Lahore and Bannu in Pakistan) from the closest viruses underscore potential surveillance gaps at the sub-national levels and in high-risk mobile populations (HRMPs).

Table 4: Environmental Surveillance Results in Outbreak-Affected Districts of Afghanistan and Pakistan, 2022-2023

Province	District	Site Name	Start Date	2022 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2023 Jan	Feb	Mar	Apr	May
Afghanistan																				
Kandahar	Kandahar City	AFG-KAN-KAN-KARWAN KOCHA	6-Dec-16																	A
Pakistan																				
Khyber Pakhtunkhwa	Peshawar	PAK-KPA-PES-LARAMA	3-Jan-15																	A
		PAK-KPA-PES-NARAY KHWAR PALOSI PUL	18-Jul-18								C	C		C					A	A
		PAK-KPA-PES-SHAHEEN TOWN	10-Jan-15							C	C	C								
	Hangu	PAK-KPA-HAN-CIVIL HOSPITAL	9-May-23																	
		PAK-KPA-HAN-COMPOSITE CIVIL HOSPITAL & JANI CHOWK	7-Sep-21																A	A
	Swat	PAK-KPA-SWA-SHARIFABAD	30-Aug-22								C	C								
		PAK-KPA-SWA-SAIDU SHARIF	17-May-22							C	C	C								
	Nowshera	PAK-KPA-NOW-MILL COLONY	28-Jan-17							C										
Punjab	Lahore	PAK-PUN-LAH-MULTAN ROAD STATION	19-Jan-15							C	C					C				
		PAK-PUN-LAH-GULSHAN RAVI STATION	5-Jan-15													A				
		PAK-PUN-LAH-OUTFALL STATION-G	12-Jan-15								C			C						
	Faisalabad	PAK-PUN-FAI-PUMPING S. 3 ACHIKAIRA	9-Jan-15											C						
	Rawalpindi	PAK-PUN-RAW-SAFDAR ABAD	10-Jan-15							C	C	C								
	Sialkot	PAK-PUN-SIA-NALA BHAIR	16-Oct-19								C									
	Bahawalpur	PAK-PUN-BAH-LALBAGH & TIBA BAHADUR	28-Dec-16								C									
Sindh	KHI East	PAK-SIN-KHI-SOHRAB GOTH	30-Jul-09																	A
	KHI Malir	PAK-SIN-KHI-LANDHI BAKHTAWAR VILLAGE	26-Jul-16								C									
Islamabad	Islamabad	PAK-ISL-CDA-SABZI MANDI	12-Jan-15							C										

Wild A=YB3A; C=YB3C	Other Classifications	No Virus Isolation	Pending	Sample Not Collected	Site Not Started

Immunization

Since January 2023, Lahore has successfully implemented three vaccination responses, Peshawar two and Hangu one. In Punjab most of the outbreak districts achieved LQAS pass percentage of 80%. Response rounds in KP, Sindh and Islamabad have shown mixed LQAS results (KP 67%-100%, Sindh 50%-88% and Islamabad 50%-83%). There is an improving trend emerging in LQAS in recent campaigns. A large percentage (55%-85%) of all the children missed identified by LQAS were due to operational failure ('team did not visit' and 'team missed the child'). The programme used three strategies to reach HRMPs: vaccination in SIAs, permanent transit points (PTPs) and Nomad Vaccination teams. All outbreak vaccination responses covered more than two million children as per TAG's October 2022 recommendation.

Table 5: Few Examples of Tracking of Outbreak Events and Responses in Afghanistan and Pakistan, 2022-2023

Outbreak event	Field investigation and risk assessment within 72 hours	Scope identified targets at least 2 million children	Round 1 immunization (in 2 weeks)	Round 2 immunization (4-6 weeks after R1)	Round 3 immunization (4-6 weeks after R2)	Additional immunization rounds (in the event of further detections)	SBC evaluation and integration in operational plans	Surveillance
Pakistan								
Peshawar								
Hangu								
Lahore								
Rawalpindi								
Faisalabad								
Karachi Malir								

Achieved | Partially achieved | Not achieved | Not applicable as of date

Recommendations	
Epidemiology/ South Region	• The national authorities in Afghanistan should declare the outbreak a public health emergency in the South region and urgently respond. The extent of the public health emergency and response should be expanded if additional regions detect poliovirus. • Given the risk of paralysis of hundreds of children in the South region, there is an immediate need for high-level advocacy for H2H campaign modality.

Immunization/ South Region	• Keeping in view the significant immunity gaps, the following response is recommended as per the GPEI outbreak response guidelines:
	  • Field investigation and risk analysis: within 72 hours of notification.
	  • Outbreak response scope: Historic transmission patterns and large immunity gaps suggest a wide scope is needed. Conduct a joint corridor risk assessment with Pakistan considering southern Region, Quetta bloc, and other linked areas.
	  • Three high quality H2H vaccination response campaigns:
	  • Round 1 within two weeks.
	  • Rounds 2 and 3 within four weeks.
	  • Immunize up to 10 years of age children in pockets of the South region that had protracted inaccessibility.
	  • Maximize implementation of an outbreak vaccination response until H2H vaccination is permitted. A dedicated outbreak response team with surge support should be provided to the South region for at least the next six months.

	• Maximize the GPEI humanitarian engagement to support the outbreak response.

All Outbreak Zones	• Interval between response rounds: Within four weeks (especially considering high transmission season and associated risks, particularly re-establishment of circulation elsewhere).
	• Management: For each event, the programme should ensure dedicated management capacity to oversee outbreak response. Each event should have an assigned outbreak lead and team, including social behavioural change.
	• Social behavioural change: Ensure incorporation of social investigation processes in risk assessment (local behaviours and social links) into the design of response plans. Create and test rapid message development for each outbreak event.
	• Both Afghanistan and Pakistan programmes should ensure procedures are consistent with global guidelines:
	  • Breakthrough / additional detection in an outbreak area: Continue immunization campaigns in the outbreak response zone at four-week intervals until three high-quality rounds have been conducted since the last WPV detection of the imported lineage. If detection of the imported lineage continues for more than one year, then this becomes an area with re-established endemic transmission.
	  • Closing outbreaks: For each outbreak event, when six months have passed without poliovirus detection, the programme should conduct an outbreak response assessment evaluating:
	  ○ Management
	  ○ Field investigation
	  ○ Risk assessment
	  ○ Social behavioural change integration into operational plans
	  ○ Quality of immunization response
	  ○ Sensitivity of surveillance
	  ○ Essential immunization
	  • The assessment should include lessons learned for future outbreak response and recommendations for post-outbreak period and officially close the outbreak response phase.
	  • Unless there is a significant change in risk, districts with closed outbreaks should be reassigned to their pre-outbreak risk category.

Risk Reduction and Preparedness

Considering the historic trends of transmission through the epidemiological corridors, both programmes should maintain strong cross-border coordination and synchronization.

Findings underscore the need to fully implement critical risk reduction activities as historic hotspots for polio like Quetta bloc, Karachi and South region of Afghanistan have demonstrated gaps in surveillance, campaign frequency and quality. Overall, the risk has either remained static or even increased, in the Quetta bloc, the South region and to a lesser extent in Karachi. *This trend is inconsistent with the 'risk reduction' objective*. And there is a need for strengthened monitoring, cross-border coordination, and programme management.

Surveillance in the Northern, Southern and Central Corridors

Both AFP and ES are functioning well in the three corridors except for a few geographies. The East region of Afghanistan needs to consider expanding environmental surveillance where feasible. Although Peshawar is only marginally below 80% stool adequacy, it is an important district for cross-border risks given the district environmental samples have detected both YB3A and YB3C genetic clusters. In the central corridor, two districts in southern KP do not meet the 80% stool adequacy indicator. Districts in the Southeast region of Afghanistan have relatively lower performance than others. Environmental surveillance sampling does not cover important geographies like Birmal in Afghanistan and South Waziristan Upper in Pakistan. One sampling site, namely Leewanay Kandey has three recent most successive samples negative for entero-viruses requiring field investigation.

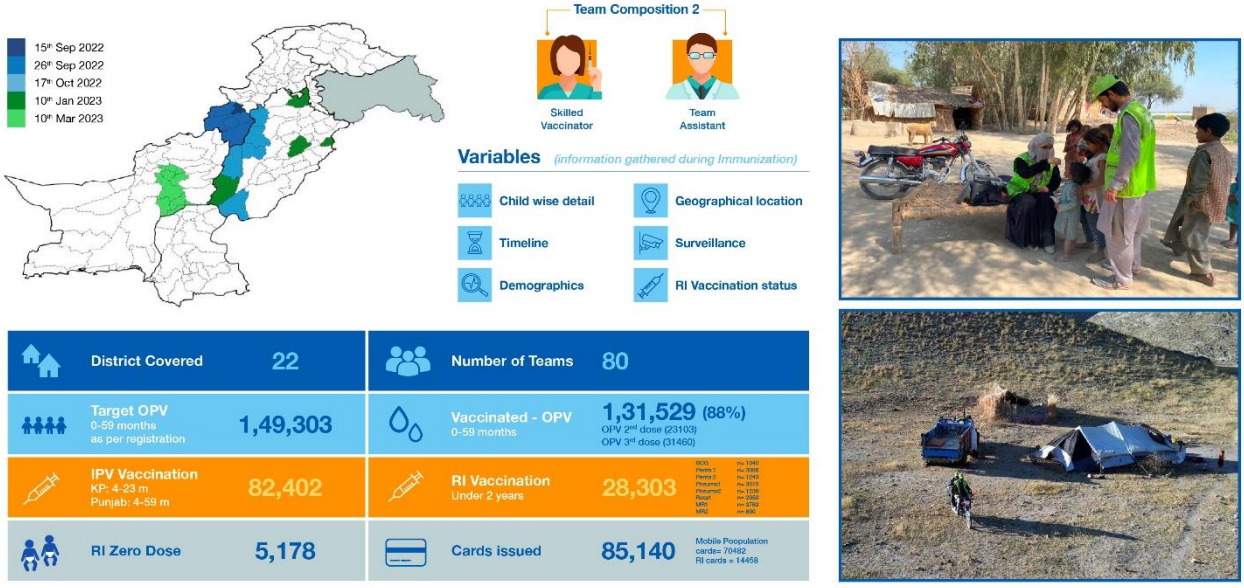
Immunization

In Karachi, the campaign coverage remained consistent between the October 2022 SNID and the March 2023 SNID with still missed proportions in all districts of Karachi ranging between 1.8% to 4.1%, including ~37,000 refusals. During the last three SIAs the cumulative results of LQAS have deteriorated, with passing rates fluctuating (65%, 57% & 85% respectively for January, March, and May SIAs), and LQAS data showed that around 50%-60% of children not vaccinated during SIAs in Karachi were missed due to operational failures (either the teams did not visit, or they had missed the children).

In Quetta bloc, Quetta City did not implement each planned SIA during the first half of 2021. Moreover, the coverage in Quetta district dropped down from ~500,000 to ~440,000 children in January 2023 SNIDs. Quetta district has also reported an increasing trend of missed children (from 5% in October 2022 to 7.8% in January 2023). The cumulative result of LQAS in Quetta bloc ranged between 83% in October 2022 to 77% in January 2023. In the last campaign Killa Abdullah performed the worst with a 17% pass rate. LQAS data showed that around 60%-80% of unvaccinated children in Quetta bloc were missed due to operational failures. Avoidable failures in operational quality add unnecessary risk in areas where risk reduction is key.

Due to significant population movements, the Pakistan programme launched the targeted Nomads' Immunization Initiative, with 80 vaccination teams. They provided *b*OPV to 131,528 children from nomadic communities between September 2022 and April 2023. Eligible children were given routine EPI antigens as well (see graph below for details).

Graph 14: Phase 1 of Nomad Immunization Teams Vaccinate children from families of Nomads and Brick Kiln workers (Polio vaccination and Essential Immunization) – September 2022-April 2023



Recommendations	

Overall Risk Reduction and Preparedness	• Both programmes need to ensure there is management capacity dedicated to risk reduction areas, including improving basic SIA quality:
	  ◦ Pre-position Information, Education and Communication (IEC) materials and messages in appropriate language for rapid deployment in cases of outbreak.
	  ◦ Train social behavioural change staff in outbreak response communication.
	• The programme teams dedicated to risk reduction need to work with EPI to create a specific plan for improving RI with concrete actions, targets, and timelines.
	• Fully implement and continue to monitor recommendations of the recent surveillance reviews with a special focus on Quetta bloc and Karachi.

Northern Corridor	• Additional WPV1 detections should be anticipated in the northern corridor and teams should be in position for aggressive and extensive outbreak responses.

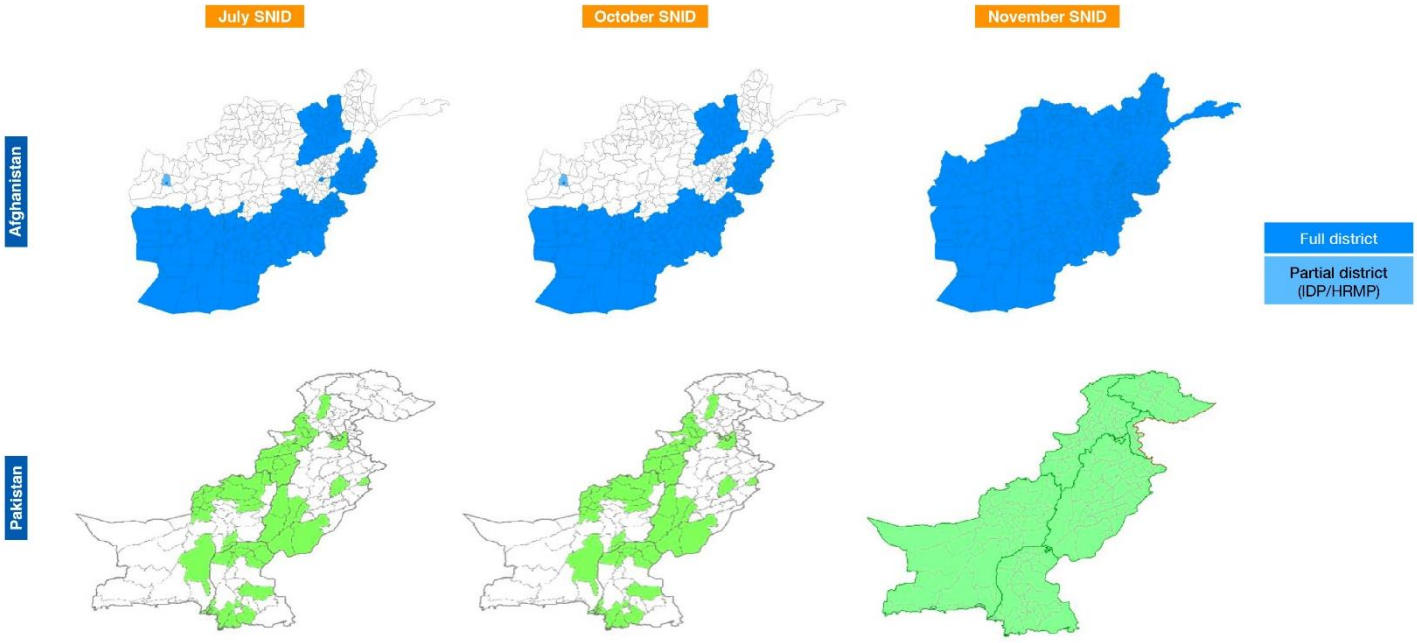
	• Revitalize the Divisional Task Force in Peshawar to address the risks. • A large number of UCs (35% of all UCs) were identified as high-risk across KP. Additional risk analyses are needed to identify a smaller number of UCs that are at highest risk of transmission (population movement, historical patterns) and take preventive actions in these areas (enhanced surveillance, SNIDs, targeted SIAs, improved EPI etc.).
Central Corridor	• Improve surveillance in the districts of Southeast region bordering Pakistan. Expand environmental surveillance in coordination with the laboratory experts with immediate preference to Birmal. • Missed children contribute to a significant immunity gap. Therefore, continue efforts to reduce the number of missed children. • Continue to assure adequate team compositions.

Southern Corridor	• Detections should be expected in Quetta bloc and Karachi; the programme needs to be fully prepared to deliver rapid outbreak responses at highest quality.
	• On SIA quality and EPI:
	  • Analyze causes of deteriorating SIA quality (LQAS) and paucity of SIA activity in Quetta City; develop a clear strategy to reverse this trend. Develop a plan to increase routine immunization coverage in the Quetta bloc.
	  • Sustain consistently high-quality SIAs in Karachi; while continuing to cover the whole of Karachi for risk reduction activities but concentrate specially to maximize vaccine uptake in slum areas. Continue to focus on reducing SMC in high-risk UCs. Concerted effort on increasing essential immunization is needed.
	• Develop an aggressive plan for Karachi to improve low stool adequacy, improve timely notification by health care providers, and overall review recommendations.

SIA Calendar for Remainder of 2023

TAG endorses the SIA calendar presented by the polio programmes for the endemic areas, outbreak zones and risk reduction and maintenance areas for the period of July to December 2023 and recommends a few modifications.

Graph 15: Endorsed Afghanistan and Pakistan SIA Schedules for the Remainder of 2023



Recommendations	
Endemic zones	• Afghanistan's eastern region should pursue its own schedule delinked from the nationally planned schedule - namely an aggressive push to interrupt transmission with three more high-quality SIAs at no more than four to six weeks apart and then reassess to ensure quality is being maintained and either continue additional rounds or if WPV1 detection has stopped, choose to rejoin national schedule. • Southern KP in Pakistan should continue to set its own SIA schedule independent of the broader country schedule. Currently, the most urgent priority is reaching the unreached children multiple times. The 69 UCs proposed for the "Reaching the Unreached' plan should not join the July SNID, but instead focus on ensuring readiness for high-quality and innovative approach to deliver these three additional doses by the end of the year (with vaccination opportunities at least every six weeks).

Outbreak response	• Both Afghanistan and Pakistan programmes should implement at least three campaign rounds in the event of an outbreak, with 2-4m target and four weeks apart (see recommendations on outbreak response).
Risk reduction	• Both Afghanistan and Pakistan programmes should implement at least four vaccination campaigns per year in the risk reduction zones. • Afghanistan should add the Northeast region to the SNIDs.
Maintenance	• Maintenance districts should continue to be covered by NIDs.

Cross-Cutting Programme Areas

Cross-Border Coordination

Since the last TAG, Afghanistan and Pakistan have strengthened cross-border coordination, particularly at the corridor level. The GPEI hub in Amman organized a meeting in March 2023 that allowed teams from all three corridors and the national level to identify focal persons, prepare joint action plans and revitalize the coordination mechanisms.

Historically, the three corridors have been the biggest contributors to the spread of the virus. Additionally, data shows that the northern and southern corridors have historically had the longest chains of transmission. The northern corridor has had transmission chains persisting for up to five years.

Regional Coordination

The GPEI Hub for Afghanistan and Pakistan has facilitated enhancement of cross border coordination at national and sub-national levels.

Recommendations	
Cross-Border Collaboration	• GPEI Hub should support continued cross-border coordination and NEOCs should ensure collaboration between Afghanistan and Pakistan polio programmes at the subnational levels. • Continue to update the national and provincial/regional framework. • GPEI Hub to continue to conduct corridor analysis at least on a quarterly basis and facilitate inter-country coordination to address new epidemiological developments. • Ensure that social behavioural change strategies and messages/materials on both sides of the border are unified, and available in local languages. • Harmonize the cross-border vaccination strategy (including synchronization of SIAs). This needs to be facilitated by NEOCs to ensure it is resolved. • Conduct quarterly in-person meetings of local corridor level staff in addition to the ongoing virtual interactions.
Surveillance	• Upon the completion of two years since the previous international surveillance review in October 2021 in Pakistan and June 2022 in Afghanistan, TAG recommends the WHO Regional Office to conduct international surveillance reviews in second half of 2024 in both Afghanistan and Pakistan.
TAG	• GPEI Hub should facilitate updates to the TAG on implementation of its recommendations. • GPEI Hub to coordinate TAG virtual consultation in November 2023, and next in-person TAG in February 2024.

Programme Integration

The TAG commended overall strengthened linkage between immunization operations and SBCC. This will enhance the programme's efforts in reaching missed children, converting refusals, and building community trust. TAG recommends further integration between SBCC and operations in multiple thematic areas, including microplanning, refusal conversion, campaign planning.

Recommendations	

Microplanning	• TAG recommends creating a single microplan for operations and SBCC and incorporating social data analysis in the microplanning process.
	• Coordinate microplanning across borders, ensuring uniformity in messaging.
	• When creating common microplans, base them on local needs. For example:
	  • Link community engagement to areas with programmatic issues.
	  • Provide 'not available' lists to social mobilizers for engagement.

Moving Beyond Refusals	• The amount of time and effort spent by social behavioural change staff on refusals vs missed children should be proportional to the numbers of children in each category. • Moving from an extensive refusal focus to the broader 'missed children' focus will likely channel resources to high-impact activities. • Ensure that all social behavioural change activities are used to promote essential immunization among households. • Continue to build trust in the polio eradication initiative through partnerships with other organizations to provide services.
Campaign Planning	• Operations and SBCC staff should work together in an integrated way before and during the campaign at all levels (i.e., from NEOC to household). • Solicit frontline worker input— on operations and SBCC —to determine optimal local campaign integration and common purpose between frontline workers. • Use frontline worker listening initiatives to enhance campaign design and determine frontline worker responsibilities, strengthening motivation and performance of SBCC and operations frontline workers. • Solicit community input on campaign delivery preferences to optimize accessibility and quality. • To maximize coverage in areas with mosque-to-mosque or site-to-site modality, utilize social behavioural change community dialogues and other co-design approaches, as needed to determine fixed site delivery at times and places convenient to the community.

Humanitarian Engagement

TAG recognized the significant contribution of humanitarian organizations who have mounted an impressive scope of humanitarian response activities across Afghanistan and across a variety of sectors. Through the GPEI's humanitarian engagement initiative, collective expertise is being leveraged to strengthen vaccination and surveillance for polio in this last mile, along with supporting other emergent health needs of the Afghan people. Between March and April 2023, seven humanitarian actors vaccinated 340,069 children with OPV across eight provinces. Out of these, 11,125 children were missed by the polio programme in the last three months.

Recommendations	
Humanitarian Engagement	• Health camps implemented by Afghan Red Crescent Society and supported by International Federation of Red Cross should contribute to the outbreak response in the South region. • The polio programme should continue to identify opportunities to leverage platforms of humanitarian partners to increase polio and essential immunization coverage in underserved areas. • Continue advocating for a more comprehensive integration of immunization response with the World Food Programme.

Gender Mainstreaming

Overall, there has been an improvement in the recruitment and retention of female frontline workers with varying scope in Afghanistan and Pakistan. A well supported and safe workforce is essential to optimize the efficacy and impact of the programme.

In Afghanistan more than 11,000 female workers are part of the frontline health workforce in critical roles including community mobilisers, campaign monitors, and vaccinators. The Ministry of Public Health has publicly stated that the health sector is exempt from a decree that otherwise prohibits females working outside of the home, which has allowed female vaccination teams to continue working in monthly vaccination campaigns from December 2022 to April 2023 without any incident.

In Pakistan, the NEOC formulated the Gender Working Group (GWG) to strengthen the efforts to overcome gender-related programme barriers. One of the projects initiated by the GWG is the "Female Frontline Workers Co-design Initiative". This initiative involved a consultative process that solicited inputs from frontline workers, the majority female. It started with surveying a representative sample of more than 2,600 women working in the highest-risk districts. Women answered questions about their experiences and challenges in the field, including the barriers to reaching children during campaigns and administering vaccines in homes, as well as their motivations and safety concerns. Based on the survey results, 14 in-person workshops were held across the country, bringing together hundreds of female frontline workers in dedicated listening sessions.

Recommendations	
FFLW Co-Design Initiative	• Review and approve agreed solutions proposed through the Pakistan Female Frontline Worker Co-Design initiative by end of June 2023, and roll out implementation by end of September 2023.
Monitoring and Evaluation	• In both countries monitor and report on key performance indicators for gender equity and take corrective action, including the proportion of female staff at all levels of the programme (from frontline worker to NEOC to TAG).
Recommendations from October 2022 TAG that remain valid	• Increase proportion of female staff at all levels of the programme (from frontline worker to NEOC to TAG). • Provide safe and secure environment to female workforce at all levels, which is essential to optimizing programme efficacy and impact. • Benefit from gender analysis done by humanitarian actors (international non-governmental organizations) to understand different needs of men and women and develop objectives to overcome gender-related barriers for the programme. • Prevention of sexual exploitation, abuse, and harassment should be fully implemented at all levels of the programme. • Introduce gender mainstreaming training for programme staff at all levels (men and women). • Integrate sex-disaggregated data to ensure no population is missed. • Integrate gender sensitivity into communication strategies and materials. • Actively ensure male and female participation in community engagement processes (jirgas, etc.), including 'spaces' for dialogue in household visits for women when not possible at community level. • Develop partnerships and build alliances with women's organizations at the local level.

Synergy with EPI

TAG noted an increasing synergy between the polio and EPI programmes in both countries. In Pakistan, the extended outreach activities present a strong collaboration and provides a concrete example of how, through this collaboration, missed and zero dose children can come in the programme's fold. The East region in Afghanistan has shown an improvement in immunity levels, however, the situation in the rest of Afghanistan is still extremely challenging. Modeling data suggest high rates of immunity are needed in the East region to interrupt polio transmission.

Detailed analysis on routine immunization coverage by district confirms that while there has been an improvement in certain districts, some have shown a declining trend, underscoring the need

for strengthening the partnership between the polio and EPI programme. Areas like the South region of Afghanistan and Balochistan province in Pakistan, that are hosting a significant population of zero dose children, are concerning for the programme.

Recommendations	
EPI-PEI Synergy	• Ensure EPI staff are present and accountable for delivering services. • Explore the possibility of re-integrating EPI vaccinators into the polio workforce. • EPI should prepare an emergency plan to address the systematic gaps in Quetta and Karachi. • Strengthen vaccination posts (fixed and temporary) including with sufficient and qualified staff. • Recruit social behavioural change officers for EPI. • Include IPV 1 & 2 coverage in regular immunization reports. • Accelerate routine immunization coverage of high-risk mobile populations, with recruitment of vaccinators who are linguistically and culturally aligned with these groups.

Communications	• EPI and PEI communications teams should develop a joint strategy for all levels:
	  • Polio SBCC staff should include EPI messaging in their communications.
	  • Communications team should document successes of PEI-EPI synergy.
	  • NEOC Coordinator and FDI Director General to publish a joint paper on Pakistan's experience of EPI and PEI synergy.

Conclusions

TAG concluded that there is a clear pathway to interrupting transmission in Eastern Afghanistan if further high-quality campaigns can be smoothly conducted as recommended. While transmission is declining in southern KP, the pathway to interrupting WPV1 is less certain given the adjustments the programme is making to the core strategy of multiple high quality H2H SIAs. The programme is commended for its resilience and creativity with these adjustments but at the same time, it is a fact that the effectiveness of these on interrupting transmission is not known as they haven't been used anywhere else. The TAG also commends the programme in Pakistan for successful outbreak responses and preventing re-establishment of transmission in areas outside the remaining endemic zones. This is critical as it enables the programme to maintain focus on finally interrupting endemic transmission.

Maintaining the momentum of political, security and community support is a key ingredient for the programmes to reach every child across the two countries and hence interruption of poliovirus transmission is possible within the next six months, provided both programmes receive the necessary political, security and community support to reach every child in endemic and outbreak zones.

Priorities and Next Steps

Given the urgency to interrupt transmission within the stipulated timeline, TAG identified the following **priorities** that calls for a focused and deliberate approach for the two endemic programmes until end of 2023:

1. Interrupt transmission in endemic zones of southern KP and East Afghanistan.
2. Mount a robust and effective response to detection of WPV1 in environmental samples in Kandahar, which now represents **a public health emergency**.
3. Implement a rapid and effective outbreak response, with strong focus on Peshawar and Karachi.
4. Reduce risk in historic reservoirs and prevent the virus from re-establishing in these areas, particularly as pockets of susceptible children remain at risk.

The GPEI Hub for Afghanistan and Pakistan will convene a virtual TAG consultation in November 2023 to review the status of the implementations of the recommendations provided, update on epidemiology and advise additional recommendations, if required. The next joint in-person TAG is scheduled for mid-February 2024.

Annex 1: Afghanistan Questions to TAG

	Question	Answer
Overall/ Strategic	**1.** What should the SIA calendar in the remaining part of 2023 and early 2024 look like? The approved calendar for the remainder of 2023 has two SNIDs and one NID.	The TAG endorses the SIAs calendar for 2023 presented by the country. The 2024 SIAs' calendar was not presented to the TAG. The programme may present their SIA plan for Q1 of 2024 in the proposed virtual consultation in November 2023.
	2. In the absence of H2H campaigns in the South region, what needs to be done in case of a possible outbreak?	The absence of H2H campaigns is a major concern and any outbreak response will need to be bigger in scope than it would be otherwise, as recommended by the TAG. The programme must achieve high coverage in all outbreak response vaccination campaigns regardless of modality, but the required modality remains H2H.
	3. What additional strategies should be implemented to address the immunity gap in S2S/M2M areas?	H2H is the only modality with evidence of interrupting transmission in Afghanistan and Pakistan. Hence, it remains the preferred method for achieving high coverage of supplementary immunization. The programme must achieve high coverage in all outbreak response vaccination campaigns regardless of modality, but the required modality remains H2H.
East Region	1. Should the age bracket be increased up to 10 years for SIAs?	In most areas, the default vaccination age is 0-5 years. In the East Region, however, there are pockets of unvaccinated children due to previously prolonged inaccessibility. The programme is advised to define the sub-district level geographies where children could not be vaccinated for several years in the last decade, carefully estimating the potential number of higher age group susceptible children in these areas and conduct at least one SIA for an expanded age group of 0-10 years in those communities. A specially designed social behavioural change strategy for the expanded age group vaccination is essential to clearly communicate the rationale for modified age-range in specific areas and to promote uptake of vaccination. Similarly, given the significant immunity gap in the South region of Afghanistan due to inability to conduct full

		house-to-house, the programme is advised to conduct at least two SIAs with expanded age 0-10 years in case of any outbreak event in areas with prolonged inaccessibility.
East Region (cont')	2. Should the programme plan to use IPV in targeted areas with continued detection of poliovirus? If yes, what should be the modality of delivery – full dose or *f*IPV?	TAG refers to the following recommendation of the SAGE with an unequivocal emphasis on applying this recommendation for the areas with heavily immunized populations that continue to have poliovirus circulation, despite being reached multiple times. Current transmission in the East Region demonstrates that the programme is not reaching all the children with bOPV. The Afghanistan programme has reported that improvements in quality of SIAs in the East Region is only very recent. *SAGE recommendation (March 2023): "in areas of persistent poliovirus circulation, an additional IPV (full or fractional dose) campaign should be conducted to supplement OPV campaigns as a means to enhance mucosal immunity and reduce the likelihood of ongoing poliovirus circulation".* In view of the current understanding of polio epidemiology as the programme is entering into the high season, TAG reiterates the need to focus on the quality of activities already being conducted. This is not to oppose the use of *f*IPV, however, it is more to do with the sequencing of priorities and recommendations for the programme; and to avoid introducing two major changes to the polio campaigns at once: that is the expanded age group vaccination in pockets of known chronic inaccessibility previously and the use of *f*IPV (which requires the Jet Injector), both of which might lead the community to raise questions. The Afghanistan Programme should proceed with the following priorities and steps: • First, continue to deliver high quality SIAs in the East region. • Second, recognizing that there are some pockets where there had been chronic inaccessibility,

East Region (cont')		consider implementing older age vaccination as per the TAG recommendations focusing on tailored communication strategies and quality. • Third, consider the option of adding fIPV in specific areas in Q4 2023 if WPV1 transmission persists through the third quarter. Program should prepare (logistics and communication strategy) before implementing the intervention. The TAG does encourage improving the IPV coverage and reporting in routine immunization.
	3. Should the programme use mOPV1 in these areas instead of *b*OPV? If yes, what should be the scope?	mOPV1 is not available. However, even in case of availability of the vaccine, evidence shows that *b*OPV efficacy is not inferior to mOPV1.
	4. What additional measures should be taken to rapidly enhance population immunity like adding Plusses?	TAG encourages the use of plusses to increase vaccination coverage and advises to assess the impact of any new interventions (i.e., plusses) in a more systematic manner before scaling it up or adopting new tactics.
	5. Is there any plan to undertake sero-surveys to estimate community immunity for all three types of Polio viruses?	TAG does not advise sero-surveys at this time, given the fact that there is no obvious information gap at this point in the programme that can be filled by sero-surveys.
Communication	1. What would TAG recommend to the programme to have a child centric approach in the communication and community engagement strategy?	Prioritize responding to 'child needs' holistically (child-centered approach) at the household level, especially during the outbreak response in Kandahar city in the South region: a. Provide packages beyond polio drops. Example: "Plusses" in line with local needs b. assist with delivery of services such as nutrition, health, and WASH, particularly in the endemic zone (East region).
	Given the need to tailor communication and community engagement activities in distinct settings in the East, South, and Southeast region to increase	See TAG recommendations on SBCC.

	vaccine uptake and tackle misinformation, what additional/unique interventions does the TAG recommend? Specifically: a) During outbreak response in areas experiencing outbreaks in the East region (endemic region) b) In geographies and communities implementing M2M/S2S campaign modalities c) For transient and mobile populations, especially among refugees and border-crossing communities.	
Expanded Programme on Immunization	1. What additional measures should be taken to rapidly enhance population immunity in polio-endemic areas with non-H2H campaign modality? Multi-antigen campaigns? Plusses in multi-antigen campaigns? Resource mobilization for enhanced EPI strategy?	See recommendations of the TAG. No opportunity should be missed when encountering a target-age child is encountered.
	2. How should the programme leverage polio Plusses in enhancing EPI in South and Southeast regions, given the risk associated with plusses during polio campaigns?	Define specific types of 'Plus' offer; define expected impact on EPI uptake in specific locations; measure effect and (where impact is positive) replicate.
	3. What additional measures should the Afghanistan programme take to protect against possible importation?	See recommendations. Achieving and sustaining high immunization coverage is the only protection against the consequences of importation.
	4. Additional measures to further enhance AFP surveillance in Southeast region?	Address inadequate stools through in-depth health data analysis of the health-seeking behaviour of AFP cases and look at the potential for expanding the environmental surveillance network in all areas with no ES site or ineffective sites. Birmal is a priority location to have ES site(s).

Annex 2: Pakistan Questions to TAG

	Question	Answer
Outbreak Preparedness and Response	1. Does TAG endorse or suggest any modifications to the Pakistan Programme current outbreak guidelines below? a) When do we close an outbreak of WPV1 (ES and AFP)? b) What should be the period needed to close the outbreak; counting from 1st detection or the last detection? if in same geography.	a) Outbreak response vaccination campaigns can be stopped if there are no breakthrough detections. Three high quality rounds (four weeks apart) are required after every breakthrough. b) Transmission can be considered stopped and outbreak can be closed at six months from the last detection and completion of at least three outbreak response rounds since last detection with high quality surveillance (AFP and ES), or after a year from the last detection with insufficient surveillance quality. Resources: Standard Operating Procedures for Responding to a Poliovirus Event or Outbreak - March 2022
	2. An outbreak zone has completed three outbreak response rounds and WPV1 is detected that is closely related to the original outbreak strain, a situation in which breakthrough transmission cannot be ruled out. How many rounds should the programme implement after the detection of the last WPV1 in the outbreak response zone? Does it vary with the risk category of the affected district/s.	The three-round outbreak response following breakthrough does not vary with the risk category. The first part of the question is answered above.
	3. An outbreak zone has completed three response rounds and then detects a new importation of WPV1 from a different lineage or cluster. How many response rounds should the district plan? Would it be the same number of rounds for low-risk	New importation and **breakthrough** are equivalent. Three rounds should be conducted.

	districts compared with districts in the high-risk category?	
Allocation of Resources Based on Risk Analysis	1. Should the programme stop operating based on risk categorization at the UC levels, particularly Super High Risk Union Councils?	Super High Risk Union Councils are in the risk reduction category.
	2. Advice on appropriate strategies and resources for traditional core reservoirs during the next six months.	Current support for the traditional core reservoirs should be maintained for the next six months but a careful and comprehensive review should be made to identify high impact operational strategies that should continue in 2024.
Social Behaviour Change	1. How can the polio programme assess the effectiveness of the SBCC strategies in addressing specific challenges related to vaccine hesitancy, fake finger marking, trust, community fatigues and other communication barriers, given the evolving epidemiology and ongoing efforts to eradicate polio in South KP?	SBCC results should be measured beyond refusal reduction to ensure adequate resources dedicated to its broader role in reducing all forms of missed children, that includes: I. Strengthening social analysis, understanding community perceptions, and applying social intelligence to help shape the programme response. II. Prioritizing areas with the highest epidemiological risk and virus circulation. III. Conducting community based rapid assessment and tracking community sentiment. TAG recommends further harmonization between SBCC and Operations, specifically in designing programme delivery formats and schedules to ensure that both streams are mutually synergetic. 1. Entry point should be joint micro planning using the insights and knowledge from the SBCC stream with an enhanced focus on community acceptance. 2. Leverage the insights from social and community listening particularly in areas of community resistance and insecurity, to tailor operational activity to maximize local acceptability and uptake.

Annex 3: List of Participants

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Dr Sebastian Taylor, Member
Dr Chris Wolff, Member
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[4] Eight TAG members and two advisors attended the meeting in-person. Ms Sherine Guirguis participated in the SBCC pre-TAG sessions virtually.
[5] Regretted.

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Mr Jassim Faisal Al-Thani, International Affairs Researcher
Ms Sara Ahmed Al-Mohannadi, Project Director
Ms Sara Abdul Aziz Al Mulla, Third Secretary
Ms Nofe Khalid Al Suwaidi, Deputy Director, International Cooperation & Development

Ministry of Public Health
H.E Dr Hanan Mohamed Al Kuwari, Minister
Dr Salih Al Marri, Assistant Minister
Dr Mohammad Mohammad Alhajri , Director of Emergency Preparedness and Response Department
Dr Walid Mohamed Osman, Health Emergency Consultant
Mrs Salha Rashid Al-Mohannadi, Head of Regional & International Relations Section

WHO Qatar Country Office
Dr Rayana Bou Haka, Representative
Mr Fouad Mansour, Senior Administrative Assistant

Regional Certification Commission (EMR)
Dr Yagob Al-Mazrou, Chair

[6] Virtual participation.

[7] Virtual participation.

GPEI Partnership

WHO Headquarters
Mr Aidan O'Leary, Director, Polio
Dr Arshad Quddus, Coordinator, Polio DAI

WHO Regional Office for the Eastern Mediterranean
Dr Ahmed Al-Mandhari, Regional Director
Dr Hamid Syed Jafari, Director, Polio
Dr Eltayeb Ahmed Elsayed Elfakki, Medical Officer- EPI
Dr Salmaan Sharif, Scientist, Polio
Mr Muzaffar Khan, Information Management Officer, Polio
Dr Natalia Molodecky[8], Technical Officer, Polio
Mrs Rimsha Qureshi, Communication Officer, Polio
WHO Eastern Mediterranean Region
Dr Ruqaia Tabasum Malik, Programme Specialist (Gender)
Mr Hossam Younes Mohamed Abdelmoni Younes, Service Desk Administrator

UNICEF Headquarters
Mr Steven Jean L. Lauwerier, Global Director – Polio Eradication
Dr SM Moazzem Hossain, Deputy Director Polio
Ms Sheeba Afghani, Senior Manager SBCC

UNICEF Regional Office for South Asia
Ms Noala Skinner, Regional Director A.I.

CDC
Dr Frank Mahoney, Acting Chief, Polio Eradication
Mr Chukwuma Mbaeyi, Technical Advisor
Ms Maureen Martinez, Team Lead, Eastern Mediterranean Region

BMGF
Mr Michael Galway, Deputy Director, Polio Endemics
Mr Jeffrey Partridge, Senior Programme Officer, Polio

Donors
Ms Ellyn Ogden, Coordinator for Polio
Mrs Fartun Abdirizaq Yussuf, Program Analyst

TAG Secretariat, GPEI Hub
Dr Fazal Ather, WHO Team Leader
Mr Richard Duncan, UNICEF Lead
Dr Hashim Ali Elzein Elmousaad, CDC Representative
Dr Ana Maria Guzman, BMGF Senior Program Officer
Dr Muhammad Obaid-ul Islam Butt, Technical Officer
Dr Alakyaz Assadorian, Technical Officer
Mr Suneel Raja, Communication Specialist
Ms Sireen Hamdan, Administrative Assistant
Mrs Mais Ghawi, Program Assistant

Participants of the Technical Advisory Group meeting in Doha, Qatar in June 2023. *Photo: Afghanistan and Pakistan GPEI Hub*

[8] Virtual Participation.

Annex 4 – Meeting Agenda

Day One Thursday, 1 June 2023 Focus on Endemic Zones (Southern KP Pakistan and East Region Afghanistan)		
Time (GMT+3)	**Session**	**Presenter/Moderator**
08:30-09:00	**Welcome and Registration**	
	Introduction	Dr Hamid Jafari
9:00-9:05	Recitation of Holy Quran	
9:05-10:00	Introduction of Participants	
	Opening Remarks	
	Jean-Marc Olivé TAG Chair	
	Dr Ahmed Al Mandhari WHO Regional Director for the Eastern Mediterranean	
	Mr Steven Lauwerier Director Polio UNICEF Headquarter	
	Dr Rayana Bou Haka WHO Representative Qatar	
	H.E Aljohara Yousef Alobaidan Assistant Director of Asian Affairs Department	
	Dr Mohammad Mohammad Alhajri Director of Emergency Response and Preparedness Department – Ministry of Public Health Qatar	
	Dr Luo Dapeng WHO Representative Afghanistan	
	Dr Nek Wali Shah Momin Ministry of Public Health Afghanistan Representative	
	Dr Palitha Mahipala WHO Representative Pakistan	
	Dr Muhammad Fakhre Alam Ministry of National Health Services, Regulation and Coordination Pakistan Representative	
	Dr Aidan O'Leary Director Polio WHO Headquarters	
	Meeting Objectives	Dr Jean-Marc Olivé TAG Chair
10:00-10:15	**Photo Session**	
10:15-10:30	Coffee	
10:30-11:00	**Setting the Context - Country Overview** **Session 1: Overview of Pakistan Polio Program** (30' Presentation)	Dr Jean-Marc Olivé TAG Chair NEOC Pakistan

11:00-11:30	**Session 2: Overview of Afghanistan Polio Program** (30' Presentation)	NEOC Afghanistan
	Endemics – The last 100-meter dash!	
11:30-13:00	**Session 3: Four Provinces of East Region** Epidemiology/Surveillance (15' Presentation and 30' Discussion) Immunization (15' Presentation and 30' Discussion)	REOC East
13:00-14:00	Lunch	
14:00-15:00	**Session 3: Four Provinces of East Region** *(continued)* Social Behavioural Change (15' Presentation and 30' Discussion) Conclusions and Way Forward (15' Discussion)	REOC East
15:00-15:15	Coffee	
15:15-17:45	**Session 4: Seven Districts of Southern Khyber Pakhtunkhwa** Epidemiology/Surveillance (15' Presentation and 30' Discussion) Immunization (15' Presentation and 30' Discussion) Social Behavioural Change (15' Presentation and 30' Discussion) Conclusions and Way Forward (15' Discussion)	South KP Hub
	Closed Session	
18:30-19:30	**NEOC Pakistan**	

Day Two Friday, 2 June 2023 Outbreak Response and Preparedness		
Time (GMT+4)	**Item**	**Presenter/Moderator**
8:00-8:30	**Coffee**	
	Faster and Smarter Outbreak Response	
8:30-9:30	**Session 1: Khyber Pakhtunkhwa Province** (20' Presentation, 40' Discussion)	PEOC KP
9:30-10:30	**Session 2: Punjab Province** (20' Presentation, 40' Discussion)	PEOC Punjab

10:30-11:30	**Session 3: Sindh Province** (20' Presentation, 40' Discussion)	PEOC Sindh
11:30-13:30	Friday Prayer and Lunch	
	Sustaining Gains – Outbreak Preparedness	
13:30-14:30	**Session 4: Balochistan Province** (20' Presentation, 40' Discussion)	PEOC Balochistan
14:30-15:30	**Session 5: Southeast Region Afghanistan** (20' Presentation, 40' Discussion)	REOC Southeast
15:30-16:00	Coffee	
16:00-17:00	**Session 6: South Region Afghanistan** (20' Presentation, 40' Discussion)	REOC South
17:00-18:00	**Session 7: Rest of Afghanistan (Polio)** (15') **Overview of Routine Immunization Afghanistan** (15') (30' Presentation, 30' Discussion)	NEOC/WHO Afghanistan
	Closed Session	
18:00-20:00	**Closed Session**	TAG Members and Secretariat

Day Three Saturday, 3 June 2023 Cross Cutting Issues and Risk Setting		
Time (GMT+4)	**Item**	**Presenter/Facilitator**
09:00-09:45	**Session 1: Cross-Border Collaboration**	Panel discussion
09:45-10:30	**Session 2: Overview of Routine Immunization Pakistan** (15' Presentation, 30' Discussion)	Pakistan FDI
10:30-11:00	Coffee	
11:00-11:30	**Session 3: Molecular Epidemiology**	Discussion
11:30-12:30	**Session 4: Triangulation of Genetic Analysis, Population Immunity, Risk Modelling**	GPEI Hub
12:30-13:30	Lunch	
13:30 – 16:30	**Session 5: Follow-up with South KP Team**	NEOC Pakistan and KP teams

16:30-18:30	**Closed Session**	TAG Members and Secretariat

Day Four Sunday, 4 June 2023 TAG Recommendations		
Time (GMT+4)	**Item**	**Presenter/Facilitator**
11:00-13:00	**Closed Session**	TAG Members and Secretariat
13:00-14:00	Lunch	
16:00-17:30	**TAG Recommendations for Afghanistan and Pakistan**	Dr Jean-Marc Olivé TAG Chair
17:30-18:30	**Closing Session**	Dr Hamid Jafari
	Dr Yagob Al-Mazrou Chair, Regional Certification Committee	
	Ms Ellyn Ogden Coordinator for Polio USAID	
	Dr Aidan O'Leary Director Polio WHO Headquarters	
	Ms. Noala Skinner Regional Director a.i. UNICEF ROSA	
	Dr Frank Mahoney Acting Chief, Polio Eradication CDC	
	Mr Michael James Galway Deputy Director, Polio Endemics BMGF	
	Mr Aziz Memon Rotary Foundation Trustee/ National Chair	
	Dr Nek Wali Shah Momin Ministry of Public Health Afghanistan Representative	
	Mr Abdullah Fadil UNICEF Representative Pakistan	
	Dr Muhammad Fakhre Alam Ministry of National Health Services, Regulation and Coordination Pakistan Representative	
	Dr Rayana Bou Haka WHO Representative Qatar	
	Dr Salih Al Marri Assistant Minister of Public Health Qatar	
	Dr Jean-Marc Olivé TAG Chair	
	Meeting Closed	

POLIO GLOBAL ERADICATION INITIATIVE

every last child

Afghanistan and Pakistan GPEI Hub

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