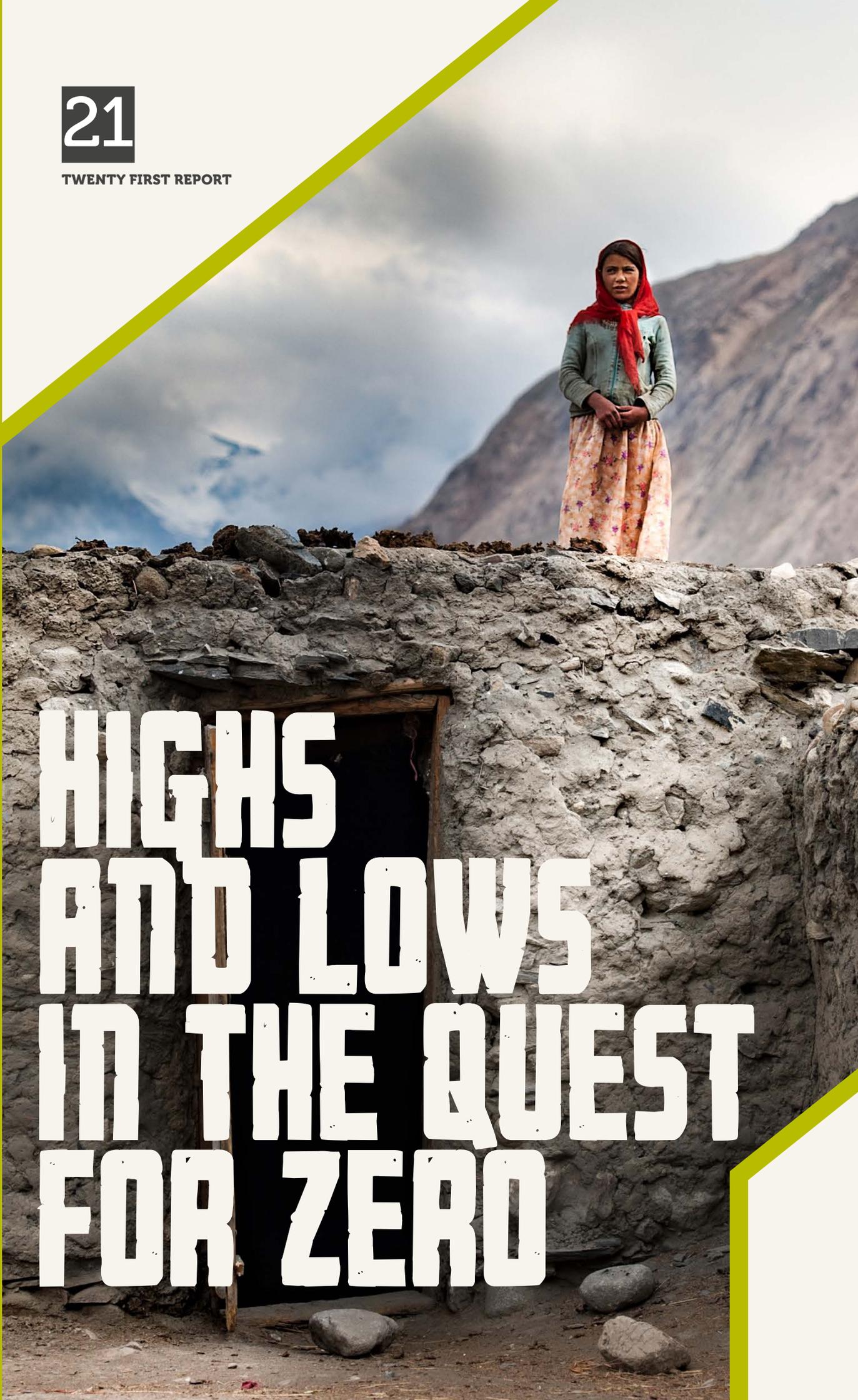


21

TWENTY FIRST REPORT

April 2022 • Independent Monitoring Board • Global Polio Eradication Initiative

A woman wearing a red headscarf and a floral dress stands on a stone wall in a mountainous region. The background shows rugged mountains under a cloudy sky. The overall scene is in a high-altitude, rural setting.

HIGHS AND LOWS IN THE QUEST FOR ZERO

INDEPENDENT MONITORING BOARD

The Independent Monitoring Board (IMB) provides an independent assessment of the progress being made by the Global Polio Eradication Initiative (GPEI) in the detection and interruption of poliomyelitis (polio) transmission globally.

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The IMB's reports are entirely independent. No drafts are shared with the Polio Programme prior to finalisation. Although many of the data are derived from the GPEI, the IMB develops its own analyses and presentations.

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INTRODUCTION

The last IMB report (*Another Chance: Don't let it slip away*), published in mid-2021, followed the IMB's 20th meeting that took place as many of the polio activities suspended because of the COVID-19 pandemic had resumed. Although polio vaccination campaigns and surveillance had largely been restored, further pandemic waves were expected, COVID-19 vaccines were being rolled out, and deployed in communities, while essential immunisation coverage rates were only just starting to climb back towards pre-pandemic levels.

At that time, the wild poliovirus epidemiology in Pakistan was looking much more favourable than it had been a year previously. However, having reviewed progress with the teams in the four affected Pakistan provinces, the IMB still had concerns about performance, particularly the numbers of "still missed" children in Karachi, in the Quetta Block, in Lahore and in southern Khyber Pakhtunkhwa.

The apparently low number of cases in Afghanistan was another positive sign, but the continuing high inaccessibility and consequently large number of children with low, or no, immunity was a deep ongoing source of concern. At that point, the Government of Afghanistan was still in place and efforts by the Polio Programme

were continuing to persuade the Taliban to permit full polio vaccination campaigns. The IMB was pushing strongly, as it had for several years, for organisational, governance and accountability reforms to enable the Sehatmandi project, that provides most basic health services in Afghanistan, to play a fuller role in polio eradication.

At the previous (20th) IMB meeting, the persistence, size and widely geographically distributed nature of the outbreaks of vaccine-derived poliovirus was also a focus of particular attention. The position of Nigeria as a major source of this infection was very worrying. The backdrop to discussions was that 1,530 children had been paralysed by vaccine-derived polioviruses since 2016; most were under two years of age and 90% were "zero-dose" children for the inactivated polio vaccine.

Polio outbreaks were also a focus of intense deliberation in the last Polio Transition Independent Monitoring Board (TIMB) meeting. The fifth TIMB report (*Building stronger resilience*) was published in the fourth quarter of 2021 and drew attention to the dysfunctional nature of the overall outbreak response, with some countries choosing to ignore GPEI, SAGE (Strategic Advisory Group of Experts) and IMB advice

to use existing outbreak vaccines rather than waiting for supplies of the novel oral polio vaccine.

The most recent IMB meeting and this, the board's 21st, report picks up progress and the story of polio eradication during 2022 so far. It examines the situation in Pakistan where, at the time of the IMB meeting, there had been no case of wild poliovirus for 14 months and four positive environmental samples (in southern Khyber Pakhtunkhwa) in the previous six months. The news of two cases in Pakistan after such a long interval came in April 2022 as this report was being finalised.

Now that the Taliban has taken power in Afghanistan, the report addresses the prospects for being able to vaccinate the large number of children that have been inaccessible in Afghanistan for several years.

It also reviews the factors that have contributed to the huge outbreak of cases of vaccine-derived polio in Nigeria and what needs to be done to gain control of the disease that continues to threaten Nigeria and other countries. It highlights the unexpected discovery of a case of wild poliovirus in Malawi. The war in Ukraine, a polio-vulnerable

country, came after the IMB meeting as did the occurrence of a case of vaccine-derived poliovirus type 3 in Israel.

The very first IMB meeting was held on 21 December 2010. It was not foreseen that its role would be needed for so long, but multiple eradication deadlines have been missed and the board has continued to analyse progress and to identify the root causes of programmatic failures and weak performance. Its recommendations over a period of 11½ years and 21 reports have sought to point the way to sustained improvements in performance and to introduce a degree of independent accountability which is otherwise lacking in the Polio Programme.

The GPEI has decided to commission the IMB, henceforth, to hold just one meeting a year with one report (a similar arrangement as for the TIMB). This decision reflects the Polio Programme's favourable view of current poliovirus epidemiology and its severe budgetary pressures. Thus, the next full IMB meeting will be held in 2023 and will be followed by the 22nd independent report.



GLOBAL AND COUNTRY PROGRESS REPORTS

In their presentations to the IMB, the GPEI leadership pointed to a number of key areas of progress.

OVERVIEW OF THE ENDEMIC COUNTRIES

They were confident that the highest level of political commitment and engagement has been maintained in Pakistan, led by Prime Minister Imran Khan. There have been two missions of the Polio Oversight Board to Pakistan in the last year. The Prime Minister of Pakistan had engaged with the deputy commissioners of the 25 highest-risk districts in advance of each polio vaccination campaign; his political departure came unexpectedly a few weeks after the IMB meeting.

The GPEI leadership told the IMB that, within the two endemic countries, there has been a continued reduction in the number of cases of wild poliovirus over the last year and, very importantly, a corresponding reduction in the proportion of positive environmental isolates. In the six months preceding the IMB meeting, just four such isolates were detected

in Pakistan. There has also been a very positive trend: a reduction from approximately 60% of environmental positives reported in 2020, to just under 8% in 2021 with no isolates reported as positive in 2022 by the time of the IMB meeting (though two cases were subsequently identified).

While environmental positive isolates have been sporadic, in southern Khyber Pakhtunkhwa, within the districts of South Waziristan, Dera Ismail Khan (DI Khan) and Tank, samples have remained positive. The persistent nature of these detections, despite the long interval since the last wild poliovirus case in Pakistan, was troubling the GPEI leadership when they attended the IMB meeting.

In Pakistan, there have been uninterrupted vaccine rounds delivered, with pandemic virus protective measures, following the post-COVID-19 resumption. That has continued unabated through 2021 into 2022.

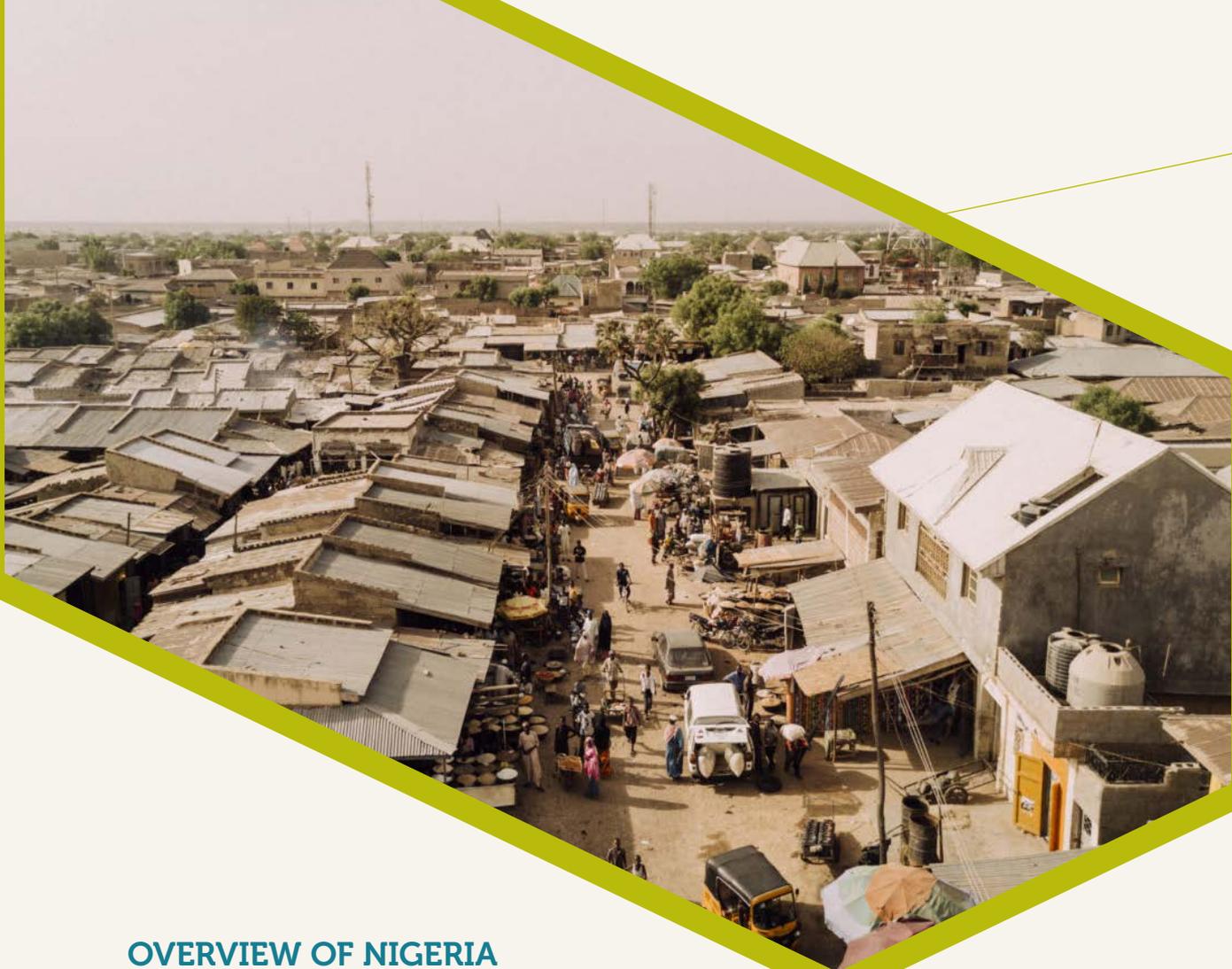


The GPEI leadership expressed to the IMB their particular concern about the mediocre quality of too many polio vaccination campaigns in both very-high- and high-risk districts of Pakistan, shown up by suboptimal evaluation reports. The December 2021 national campaign quality data were in the vicinity of 84% “pass” rates, but this masked important variations between provinces and districts.

The GPEI leadership also told the IMB that, for Pakistan, it is vital to maintain the focus on key reservoirs and the other high-risk areas, principally southern Khyber Pakhtunkhwa, and to reduce further the numbers of missed children. Southern Khyber Pakhtunkhwa was flagged as “particularly troublesome” because it contains areas with restricted access for supervision and monitoring by partner staff due to security and permission challenges. Long-chain viruses have been isolated there, as well as in the adjacent districts of Afghanistan. This indicates there are

places where transmission is not being interrupted.

On Afghanistan, by the time of the IMB meeting, the GPEI leadership reported that there had been one case of wild poliovirus in 2022 and one detection in an environmental sample early in the year. A desk-based surveillance review was conducted in 2021. Since the transition to the Taliban administration, polio vaccination campaigns have been resumed and more children in previously inaccessible areas have been reached and vaccinated. In these new campaigns, when they began in November and December 2021, there was a relatively secure environment for programme operations. Then, security was thrown into doubt with the occurrence of truly horrifying incidents in which eight frontline workers were killed in coordinated attacks.



OVERVIEW OF NIGERIA

At its meeting, the IMB reminded the GPEI leadership that, at the time wild poliovirus circulation was interrupted in Nigeria, it gave very strong and forceful advice that the Polio Programme should not become complacent. They should place great emphasis on building the resilience of the Nigeria populations to infection, both reinfection with the wild virus or infection with the vaccine-derived viruses. In discussion, it became clear that there had been a degree of complacency, with that and a wide range of other factors contributing to the worsening situation in Nigeria over the last two years. The GPEI leadership is in no doubt that they need to become very hands-on in helping the Nigeria Polio Programme to return to its previous level of performance as well as taking much stronger and more effective action to raise levels of essential immunisation coverage. This is a formidable task, given factors such as the loss of experienced staff, the worsening security situation, and the financing required. One GPEI leader described the Nigeria Polio Programme as having “shrivelled”.

OVERVIEW OF OUTBREAKS

When the GPEI leadership gave a situation report on the multinational outbreaks of vaccine-derived poliovirus, they said there have been obvious improvements but all was still not well with the cohesiveness of the response. Some countries are not treating new detections or ongoing circulation as a public health emergency, given other disease priorities facing them. Some outbreak responses are too slow to start and not well-coordinated with surrounding geographies. Some countries are holding back because their preference is to use the novel oral polio vaccine type 2 (which has been in short supply) rather than an alternative established outbreak vaccine (which is available in large stockpiles).

GENDER EQUALITY STRATEGY

In its update on progress with its gender equality strategy, the GPEI leadership concentrated on gender mainstreaming. This is the process of assessing gender implications for all affected people, within any planned action, including policies, programming or legislation, with the ultimate goal of achieving gender equality. This is an approach employed by the United Nations system since 1996, as well as in the international community, to realise progress on inequalities in women's and girls' rights. It is relevant for polio eradication because gender is a powerful determinant of health. By taking a systematic approach to gender mainstreaming, the Polio Programme will begin to address gender-related barriers to vaccination, improve immunisation outcomes and increase women's meaningful participation in decision-making and leadership roles, in demand creation and in health service delivery.

Gender mainstreaming embraces a number of key principles. First, gender mainstreaming is not a standalone function. It is a complementary cross-cutting process to address the root causes that are hindering polio eradication. Second, gender mainstreaming should be anchored at the lowest level, the community level. Third, gender mainstreaming should be embedded in the Polio Programme's country activities. Fourth, regional- and global-level roles are necessary to facilitate and support a national dialogue, to finalise relevant plans, make available expertise, guide planning and implementation, advocate for required resources and monitor the achievements made. Fifth, the majority of all the resources are to be allocated to enable country offices to identify and address the root causes related to gender inequity. Lastly, the design and

implementation of activities are guided by the GPEI polio agenda strategies.

The Polio Programme has four specific areas of focus: a) country support for gender strategy setting and planning; b) data for action; c) gender parity and human resources (recruit, retain, promote, develop leadership); and d) the prevention of sexual exploitation, abuse and harassment as well as policies and practices for safeguarding, protecting and supporting polio workers and communities.

In the two endemic countries, Afghanistan and Pakistan, attention continues to be focused on increasing female workers at the frontline. There have been setbacks for the gender strategy over the last year, particularly with the shift to the mosque-to-mosque campaign modality in Afghanistan. Indeed, even within house-to-house vaccination there has been a fall in the overall proportion of female workers. In Pakistan, a major finding in the external surveillance review was the predominance of all-male surveillance teams. Generally, across the Polio Programme, women's representation in leadership and senior positions is low.

The IMB was told that there are dedicated groups and collaborations across the polio partners, applying the gender equality strategy and many initiatives are planned and being taken.





PROGRAMME FUNDING

The Polio Oversight Board, at its October 2021 meeting, approved a 2022 budget of \$932 million. However, anticipated funding for 2022 is less than this. The latest estimated funds available for use in 2022 are somewhere between \$771 million and \$822 million.

The Polio Programme has therefore had to undertake a prioritisation exercise. Activities that were budgeted for were put into two priority groups. Priority one aims to fund the most critical activities, such as the endemic countries, outbreak responses, oral polio vaccine procurement, surveillance and other core capacities in high-risk countries. Priority one also includes a specific budget line for gender mainstreaming activities.

The GPEI leadership told the IMB that \$771 million would be enough funding to fund all activities in priority one. The team is working to identify any

potential savings from priority one activities that could be allocated to priority two (e.g. preventive oral polio vaccine campaigns in non-endemic countries).

In addition to the core budget of the GPEI (called the financial resource requirements or FRR) there are also investments made by some donors to so-called non-FRR activities. The IMB was told that the GPEI anticipates that around \$400 million will be allocated in this way, outside the core budget, in 2022. This will come from the Bill & Melinda Gates Foundation, Centers for Disease Control and Prevention (CDC) and Gavi (with smaller amounts from Rotary International).

The deployment of these non-core polio funds covers initiatives such as integrated service delivery in the polio-endemic countries, expanding primary health care (including essential immunisation) activities in high-risk areas of Afghanistan and Pakistan, and providing various forms of technical assistance.

The GPEI leadership emphasised that the most fundamental funding need is for a dependable multi-year budget, to run through to 2026, in order to support the new strategic plan that was launched in mid-2021. The cost of getting through to 2026 and certifying the world wild poliovirus-free is estimated to be around \$4.8 billion. The estimated multi-year budget is 7% higher than GPEI's historical fundraising levels and this is in what the GPEI leadership told the IMB is "a very competitive donor landscape". There are no fewer than eight replenishments or fundraising efforts in 2022 for global health, of which GPEI is just one, and the estimated cost of all of these fundraisers and replenishments is between \$130 billion and \$140 billion.

A few weeks after the IMB meeting, the GPEI published its formal investment case for 2022–2026 (*Investing in the Promise of a Polio-Free World*).

SANITARY REFORM

It remains remarkable that tackling one of the prime means of transmission of the poliovirus (“Transmission occurs from person to person through the oral and faecal–oral routes”, *CDC Yellow Book*.) has attracted so little enthusiasm within the GPEI hierarchy. A commitment by the Polio Oversight Board at a 2018 meeting, following representations by the IMB, led to a plan for sanitary reform in the super-high-risk union councils in Pakistan. This has moved forward at a snail’s pace. The IMB was told about progress but much of this has been small-scale and fragmented, falling well short of the transformational potential of the original idea to take action on this.



PAKISTAN AND ITS FOUR KEY PROVINCES IN MORE DEPTH

In its discussion with the IMB, the GPEI leadership, speaking of its recent surveillance reviews, concluded that, for Pakistan, there is a sound surveillance system in all districts, at the district, tehsil and union council levels. Surveillance reviews have been completed, both for Pakistan nationwide and, more recently, the follow-up for southern Khyber Pakhtunkhwa. The review included 158 health facilities, 89 acute flaccid paralysis case field validations and 37 environmental sites in the first instance. The follow-up for southern Khyber Pakhtunkhwa covered a further 58 health facilities, 10 acute flaccid paralysis case field validations and nine environmental sites. The Polio Programme is placing a strong focus on implementing the recommendations of these reviews, with the aim, at this stage of the eradication effort, of making the surveillance system as sensitive as it can possibly be.

The GPEI leadership was confident that the then favourable epidemiological situation was an accurate reflection of reality and not down to unreliable data. However, even before the two new cases of wild poliovirus, there was persistent evidence of low-level transmission, particularly in areas that are still detecting orphan viruses, namely the corridor from south Khyber Pakhtunkhwa to southern Punjab to northern Sindh. This carries a danger of transmission being sustained in very specific, high-risk populations. The GPEI leadership told the IMB that it is concerned in Pakistan about four such population subgroups.

The first is communities living in areas that have restricted or limited access for supervision and monitoring. These are mainly the security-compromised union councils, making it very

difficult for staff to go there and conduct day-to-day activities.

The second is the seasonal migrants.

The third group is the vacated or partially-vacated union councils which were affected by security operations in the distant and recent past. There are not supposed to be substantial populations living in these union councils, but there are doubts about this claim.

The fourth group is the refugees from south-east Afghanistan. They not only move internally, within Afghanistan, but also across the border, going into North and South Waziristan and adjoining districts.

An evidence-based approach is being adopted to ensure that surveillance and vaccination are reaching these identified subgroups. It is hoped that the actions of the surveillance review will major on the hunt for missing links in the remaining chains of transmission. Some of the review's recommendations include the need to increase surveillance sensitivity in public secondary and tertiary hospitals. There is also an intention to conduct a comprehensive review of all surveillance sites; despite this action being embedded in the National Emergency Action Plan, reviews have not taken place as regularly as they should have.

The GPEI leadership assured the IMB that, on the operational front, programmes across Pakistan have been improved in a number of key respects, from revision of micro-plans and the rationalisation of team workloads, to improved training of frontline workers, the procurement and distribution of cold chain equipment, as well as a continued strengthening of support of supervision and monitoring. There has been a consistent decrease in the number of chronic or persistent vaccination refusals. New social and behavioural change approaches have been piloted to really make sure that communication is strengthened, particularly targeting hostility

towards the vaccine and its avoidance and refusal.

The IMB spoke separately, at its meeting, with the Pakistan federal government team and then individually with the teams in each of the four provinces.

The federal government team was led by Health Minister (called the Special Assistant to the Prime Minister) Dr Faisal Sultan. The Minister described the situation as "a special moment for us", in relation to the historic very low numbers of poliovirus detections with, at the time of the IMB meeting, no case for the previous year and a concomitant decline in positive environmental samples.

As the GPEI leadership had done, he reassured the IMB that polio had remained a very clear priority as far as the leadership of the country is concerned and a topic on which the Prime Minister was fully conversant and aware of, not only the broad strategy but also of what he called the "nitty gritty".

The IMB was told that the Government of Pakistan planned to make available nearly \$800m for polio eradication over the next five years.



The Minister told the IMB that across the political spectrum “coordination and buy-in has been tremendous”.

Much of the discussion was spent on the challenges in Khyber Pakhtunkhwa. The Minister considered these to be multiple, covering socioeconomic, political, and programmatic factors. More widely, he had continued to reach out to local leadership and spoken to elected Members of Parliament, both provincial and national, to urge them to really take ownership of polio eradication.

The Minister has also forged a good working relationship with the Health Minister in Afghanistan.

The Minister left office after Prime Minister Khan’s political departure a few weeks after the IMB meeting.

Khyber Pakhtunkhwa province is the focus of the greatest concern globally and nationally. The IMB was told that, of the nine wild poliovirus positive environmental isolates detected in the Khyber Pakhtunkhwa province during 2021, four were “orphans” (i.e. they had been circulating undetected for some time) and five were not. Of the two positive environmental isolates from outside the province, one had origins in Quetta and the other in Faisalabad. The province recorded no polio cases in 2021, 22 in

2020 and 93 in 2019. Despite the absence of a confirmed wild poliovirus case for 19 months prior to the IMB’s meeting with the provincial team, the discovery of these orphan isolates strongly suggests that wild poliovirus is very much still in circulation in southern Khyber Pakhtunkhwa. It is clear that this is very much so with the reports of two more cases of wild poliovirus only weeks after the IMB meeting.

The provincial polio team presented data on the number of “still missed” children at the level of union council, comparing the programme’s performance in the December 2021 campaign and in the campaign immediately preceding the IMB meeting in March 2022. While the number of vaccination refusals for the province overall had improved somewhat (18,321 versus 19,874), in the eight highest-risk districts there was some worsening performance, notably in North Waziristan, Khyber and Tank.

The provincial and federal governments have collaborated to produce a special plan for southern Khyber Pakhtunkhwa. As part of this, an additional coordinator and a communications team have been placed in each district.





The data presented on zero-dose children in this province is also quite disturbing, with the highest numbers of reported zero-dose children in southern Khyber Pakhtunkhwa. In 2020, in South Waziristan, 93% of children presenting with non-polio acute flaccid paralysis aged between six and 23 months had no polio vaccination through routine services, largely as an effect of the COVID-19 pandemic on routine services (80% in 2019 pre-pandemic). The proportion has improved in 2021, but still over half of the children presenting were zero-dose ones. Additionally, the Pakistan Polio Programme told the IMB that there must be zero-dose children that have not been recorded in other areas, due to cross-referencing with other sources. Commenting on this, the provincial polio team said: “this is a worry for the programme and another reason why we need a plan”.

On campaign quality, there had been an overall deterioration for the province as a whole from the December 2021 campaign (86%

“pass”) to the March 2022 campaign (77% “pass”). The provincial team explains this by the greater amount of sampling in the south of the province. Most union councils in more northern parts of southern Khyber Pakhtunkhwa were excluded from the quality sampling. Looking by district, there were improvements in Peshawar, Charsadda, Mohmand, Karak and Tank. Bannu also improved from the December 2021 “pass” rate of only 60% to 86%, though this is still an unsatisfactory figure. Campaign quality in North Waziristan was very low in March 2022 (25% “pass”) and fell badly in South Waziristan between December 2021 and March 2022 (83% to 47% “pass”). The remaining districts of Khyber, Bajaur, Nowshera, DI Khan, Hangu, Kohat and Lakki Marwat saw declines in the scores between December 2021 and March 2022, although Khyber and Lakki Marwat still remain above the 90% “pass” threshold. These independent post-campaign monitoring scores also indicate that 30% of districts in North Waziristan are achieving coverage of less than 90% “pass”. The WHO’s regional polio team told the IMB that these scores confirm the programme-wide conviction that the southern part of the province is the greatest challenge.

The provincial polio team described its own three biggest concerns to the IMB. The first is a need to create further momentum, engagement and advocacy to finish the job. It is still trying to fully convey to all the political leaders what it described as “the enormity of this polio eradication”. Linked to this is sustaining the levels of funding required.

The team’s second major concern is the scale of cross-border movement between Afghanistan and Pakistan and the risk of transmission that this carries. It is trying to mitigate this with cross-border cooperation from top to operational levels. Synchronised campaigns and responses across the border are being carried out. Route maps and movement calendars are being regularly updated for mobile populations and nomads so that they are reached in polio vaccination campaigns and essential immunisation outreach activities. The provincial Polio Programme is also focusing particularly on those union councils adjacent to the border.

The team’s third concern is the remaining campaign quality gap in the south of the province. It told the IMB that a hub has been created, led by a senior officer, who stays in the campaign area for the entire month. Safe space has been created for the external monitors to be in dedicated areas; its facilities are being built



with the help and cooperation of the district administration. The provincial Polio Programme remains strongly engaged with the district administration and the law enforcement agencies. This they see as a vital part of ensuring campaign quality.

The IMB was told that some of the refusals were strongly linked to protest about lack of public resources and infrastructure. The provincial government is trying to address this and find the resources to extend health and education service delivery system to communities. There have been visits to these areas to listen to communities' concerns and to explain to them what the government is doing for the people.

The provincial government believes that this community engagement is a very positive move.

Balochistan, like the other provinces, puts its districts into four categories

for polio eradication purposes. Quetta Block has the highest-risk districts. There are five and they are all clustered around Quetta city and connecting borders with Afghanistan. The polio teams in the field operate mainly at union council level and there are 159 of these within the five districts.

Over the last decade, Balochistan had a peak of 73 cases of wild poliovirus in 2011, other serious outbreaks in 2014 (25 cases) and 2020 (26 cases) but, by the time of the IMB meeting, no wild poliovirus case had been detected in the province since January 2021 (reported from Qilla Abdullah). The last vaccine-derived poliovirus case was reported around the same time from the Mastung district. This was not previously classified in the highest-risk group, but as a result of the detection of vaccine-derived poliovirus, it has been reclassified. At the time of the IMB meeting, environmental samples had not tested positive for wild or vaccine-derived poliovirus over the preceding 13 month period.

Campaign administrative coverage has moved from 99% in December 2021 to 95% in March 2022, but it varies across the 34 districts. In around two thirds of the province's union councils, the Polio Programme achieved more than 95% coverage in the March 2022 campaign but less than 90% in 154 union councils. The IMB was told that the lower coverage in Quetta is partly

accounted for by the mass movement of populations from cold areas to summer areas.

There have been improvements over the last year in the number of persistent refusals and children continuing to be unavailable when vaccinators call. "Still refusals" in Quetta Block have moved down to 4,648 (0.5% of the target population). This is a 50% reduction since the last IMB meeting.

The Polio Programme's performance metric for "still missed" children is the percentage of such children in relation to the population target for a particular vaccine campaign, the target is less than 2%. In the March 2022 polio vaccination campaign, 230 of Balochistan's union councils scored over 2%. This is only a small improvement on the December 2021 campaign which had 244 union councils above 2%. The provincial government and its polio team have been addressing this problem by improving the microplanning process, intensifying their monitoring network, extending the length of vaccination campaigns





with more intensive door-to-door visits, and by establishing special health camps (to give essential immunisation plus a polio vaccine).

The IMB was told that major political leaders and influencers (with specific focus on active involvement of Pashtun influencers) have been mapped and are actively supporting the provincial Polio Programme through inaugurations, video messages and refusal conversion activities. Also, to strengthen the enabling environment, the Balochistan provincial government, with the help of partners, is trying to expand an integrated service delivery package to all super-high-risk union councils. Another intervention is round-the-clock availability of vaccination services in major hospitals (both government and private) and in health care units with high number of births.

The Balochistan polio team set out for the IMB their three greatest concerns. First, the potential presence of wild poliovirus in Afghanistan. Balochistan is a neighbouring province and there

is constant movement of populations in and out of Afghanistan. Fencing of whole borders means that most of the population now flows through the transit points. This has helped to enable large numbers of polio vaccinations to be carried out at these border crossings. However, the forest border has few controls, and that reduces the impact.

Second, the provincial polio team pointed again to the seasonal high population movements and also to cultural taboos in Balochistan, such as not taking a baby out of the room for the first 40 days of its life.

The team's third major concern is the low essential immunisation level in the province. This is being addressed more effectively now that the polio and essential immunisation teams work side-by-side in the Emergency Operations Centre. Also, as part of outreach activities, 100 vaccinators in high-risk districts in Balochistan have been provided by the partners to assist the government in strengthening essential immunisation performance.



One phenomenon that the provincial team did not mention is the problem of “grey houses”, a major issue in Balochistan compared to the rest of the country. This is the Polio Programme’s term for houses that do not open the door to vaccinators. The independent quality scores are quite “green” (i.e. good) in Balochistan because these surveys only capture people that open the door to polio workers. Grey houses do not seem to be routinely included in quality sampling.

According to the most recent Knowledge, Attitudes, Practices and Experiences (KAPE) survey conducted by UNICEF in 2021, people surveyed in Balochistan reported far lower rates of trust and willingness to vaccinate their children than those living in other Pakistan provinces. Many caregivers in the sample in Balochistan saw the polio vaccine as either not safe or ineffective and would not give the drops to their children. Very few respondents in Balochistan regarded religious leaders or traditional healers as being supportive of polio vaccination. The majority of respondents in Balochistan believed vaccinators were “outsiders”, a

stark contrast to other provinces.

Respondents to this survey in Balochistan were also more likely to report experiencing coercive tactics or pressure to vaccinate from the administration, a major driver of refusals. Trust deficits in national and provincial governments were noticeably higher among caregivers in Balochistan compared to other provinces.

Sindh province had not detected a wild poliovirus case in the 21 months prior to the IMB meeting. This compares with 30 cases in 2019 and 22 cases in 2020. By the time of the IMB meeting, all environmental samples in 2022 had tested negative. In Karachi in 2021, there were six wild poliovirus positive environmental isolates while other divisions of Sindh were clear for that entire year.

The independent quality measures for polio vaccination campaigns are

showing “pass” rates of between 67% (very high-risk districts) and 82% (high-risk districts) for the March 2022 activities, with a slight worsening of performance compared to December 2021.

For Sindh province as a whole in January 2021, there were a little over 200,000 “still missed” children after the polio vaccination campaign. This number was down to around 135,000 in March 2022, a reduction of around a third. The comparable figures for Karachi were approximately 122,000 “still missed” children (January 2021) and approximately 61,000 (March 2022), a drop of nearly 50%.

The provincial polio team told the IMB that this has been achieved by microlevel planning based on profiling of the refusals, establishing detailed language and cultural information, and investigating the reasons for the refusal. This analysis enables the teasing out of the reason for the

refusal, whether it be a misconception about the vaccine, a religious belief, a fear of exposure to the risk of COVID-19, or a demand-based matter (e.g. resentment about lack of government provision of services or sanitary infrastructure). The provincial Polio Programme then chooses the appropriate person to help engage with the family who are refusing.

The provincial polio team is also using so-called “cluster mapping” in Karachi. This means that if a team misses a certain number of children in a day, this is defined as a cluster; because of this targeted approach, there were 72% fewer clusters in super-high-risk union councils in the March 2022 campaign than in January 2021.

The provincial government organised around 247 health camps in super-high-risk union councils in 2021. These were able to cover around 5,500 missed children who were refusals and to provide 29,000 children with essential immunisation. In addition, 14 dispensaries are delivering various health-related services, including nutrition, birth registration and other elements. An additional 55 female vaccinators have also been deployed in super-high-risk union councils.

These are many other initiatives and positive examples of political leadership and practical actions, for instance: the Minister of Health regularly chairs review meetings in which there are in-depth discussions with the districts and divisions about progress; the provincial secretary, commissioner and deputy commissioners inaugurate the campaigns, attend evening review meetings and personally observe the campaigns; parliamentarians are also involved in inaugurating campaigns and helping to turn round refusals; there are alliance building activities with the Pakistan Paediatric Associations to address engagement with the so-called “posh” areas where parents tend to take their children to clinics rather than receive

door-to-door visits; women’s organisations have helped in developing the action plan for Urdu speaking areas; influencers’ engagement has given good results and this is now being further developed; the communications and operations teams have been integrated; the workload of teams has been rationalised and this has proved very effective in reducing overloads with a target of 130 houses reduced to 80 houses; new hamlets have been found that were earlier missing in micro-plans; and high-rise building vaccination has been tackled by involving the associations that run them.

After a very full discussion of progress with the IMB, the Sindh polio team identified its three major concerns. First, the high number of “still missed children”, especially in Karachi. Second, the high population influx from northern areas of Khyber Pakhtunkhwa, Balochistan and, especially from, Afghanistan because of the change of political administration there. The polio team has mapped the areas where they expect the influx from the Afghan population in Balochistan and are targeting these areas. Third, suboptimal coverages for essential immunisation and zero-dose children. For example, Balochistan only covered 15-17% of its zero-dose children for routine oral polio vaccine during the last three national campaigns. Balochistan is also the worst performing provincial Polio Programme for “still missed” children, for “still not available” children, and for the overall proportion of zero-dose children in the province.

Punjab province has been free of reported wild poliovirus cases for more than one year and free of environmental positive samples for 10 months. This is against a background of 14 polio cases in 2020 and 58% environmental sample positivity that same year. In the very high-risk districts of Lahore, Faisalabad and Rawalpindi, the last cases were reported in May, April and March respectively of 2021. Environmental



positivity in the province was 6% for 2021 and 0% for the first three months of 2022. By 2021, Rawalpindi and DG Khan were reporting samples linked with one genetic cluster, while Lahore, Faisalabad and Multan recorded positive samples linked with another genetic cluster.

Overall polio vaccine campaign coverage in this province has improved in the last year. None of the high-risk districts is showing less than 100% administrative coverage from the March 2022 campaign. These scores are complemented by post-campaign monitoring that also shows high levels of coverage. While Faisalabad has seen steady improvements in independent quality scores, recording its highest rate – a 96% “pass” in the March 2022 campaign – compared to five previous campaigns, Punjab overall and Lahore district in particular have seen drops in scores over the past two campaigns. Lahore dropped badly from 93% “pass” in December 2021 to 38% “pass” in January 2022, with some recovery (to 54% “pass”) in March 2022. Punjab has scored 78% and 84% “pass” over the past two campaigns respectively. Rawalpindi has maintained a score of 92% “pass” over the past two campaigns.

The number of “still missed” children has improved compared to 2021 across all union councils in Punjab. One district that has recorded rates of more than 5% missed children in the latest campaign: Rawalpindi.

The provincial polio team reported many positive actions as a special focus. In prioritising high-risk, mobile populations, there are communication tactics that aim to unpack the missed children data, sustain demand and engage the most vulnerable through tailored strategies. The programme has conducted challenge mapping on all the recorded refusals, not available children and persistently missed children, and has performed community engagement activities with over 1,000 key influencers. It has taken similar initiatives with high-risk, mobile populations and other priority communities.

The provincial Polio Programme has been working to match the language profiles of vaccinators to local communities. They have also conducted 179 health camps in priority community areas of Lahore and Rawalpindi over the past year, which has further bolstered coverage for “still missed” and zero-dose children. Punjab is excelling at covering zero-dose children. Across the province, Punjab vaccinated over 90% of zero dose children



identified in the March 2022 campaign, compared to weaker response on this metric in the other Pakistan provincial Polio Programmes.

After explaining more of their initiatives to reach high-risk, mobile populations, missed children, and supporting routine immunisation and other health service needs, the Punjab provincial polio team told the IMB about its top three concerns. First, the high rate of “still missed” children. It has implemented an initiative to track missed children through a web portal. It conducts evening vaccinations in dwellings reported as “locked houses” and houses where children had been reported as not available. The same teams for the area are in charge so that no children are missed and the data are validated. Moreover, social profiling of persistently missed children in union councils is being conducted to work out whether these children are missed by one round, two rounds or more than five rounds. The

IMB was told that, currently in Punjab, there are no children who have been missed in two rounds but there are such children who have already either left the district or are part of a mobile population.

A second major concern is what the provincial polio team described as the “huge size” of the high-risk, mobile populations, including concerns over the potential influx of Afghan refugees migrating across the border. To address this, the provincial Polio Programme is strengthening vaccination at permanent transit points, conducting health camps for integrated service delivery in the high-risk, mobile population areas while the high-risk, mobile population settlements are being registered in all the districts. For Afghan new arrivals, tracking and assessment is being conducted.

The provincial polio team’s third major concern is the pockets of low essential immunisation coverage. Currently, the provincial government is recruiting 2,000 new vaccinators. It has also set in motion a plan for essential immunisation and evening checks at all the government health facilities across Punjab. It is also establishing 100 new immunisation centres through public–private partnership in union councils lacking cover.



AFGHANISTAN IN MORE DEPTH

It was not possible for the IMB to meet with the Afghanistan Health Minister and head of the country's Emergency Operations Centre. The Minister did not wish to meet in virtual format and a face-to-face meeting was not feasible on this occasion. The IMB gathered information from the polio partners and other sources familiar with progress in Afghanistan.

By the time of the IMB meeting in March 2022, the GPEI leadership reported that, in Afghanistan, there had been one case of wild poliovirus in northern Paktika province in 2022. Although this territory is immediately adjacent to southern Khyber Pakhtunkhwa in Pakistan, genetic analysis showed the poliovirus to be most closely linked with an origin in Quetta Block in 2020. Prior to this detection, in 2021, there had been a cluster of three cases in Kunduz province in the north-east and one case in Ghazni province in the south-east. Environmental sampling in 2021 had shown just one detection in Helmand province on 23 February of that year.

Epidemiological surveillance has expanded. There are now 26 environmental sites in Afghanistan, across 13 provinces (16 districts), which includes three new sites, one each in Uruzgan, Ghazni and Kunduz provinces established in 2021.

The country has not reported any circulating vaccine-derived poliovirus cases since July 2021. This followed 2020, in which Afghanistan accounted for almost a third of global cases of type 2 vaccine-derived poliovirus.

The GPEI leadership is concerned about a strong likelihood of sustaining transmission in very specific high-risk populations and districts straddling the Afghanistan–Pakistan border. This includes Afghan returnees from south-east Afghanistan, who move internally within Afghanistan, and into North and South Waziristan and adjoining districts of Pakistan.

The Polio Programme commissioned a desk-based surveillance review in 2021. This concluded that Afghanistan meets surveillance standards at national and most subnational areas.

An estimated 3.5 million children aged less than five years remained unreached during the first half of 2021. Since the political transition, an estimated 2.4 million children were reached (before March 2022) who had been inaccessible for more than three years. In March 2022, the national polio vaccination campaign added new areas for house-to-house service delivery with a total target of 0.9 million. None of these children were part of the 3.5 million inaccessible children (who had remained unreached for more than three years).

At a technical level, the Polio Programme is focused on getting access to the whole population of Afghanistan's children and doing so with the eradication-standard mode of vaccination: house-to-house campaigns.

The GPEI leadership explained to the IMB that they were maintaining intensive engagement with the Afghanistan health authorities about the balance between house-to-house and mosque-to-mosque modalities of campaign delivery. There have also been advocacy missions to seek the support of the Qatar Government. The IMB was told that there are concerns within the Taliban authorities about community attitudes. As there are very acute health needs, they argue that going house-to-house with vaccines, when people do not have basic health services, would not be good for their new government. This is despite three or four polio vaccination rounds, covering some 8.5 million



children, not encountering any communities that rejected them, the GPEI leadership explained. The IMB was told that there are differences of perception, too, among Taliban policy-makers about the effectiveness and popularity of the mosque-to-mosque campaign modality. Some claim that it is achieving high coverage levels. A mosque-to-mosque approach is also attractive to those within the administration concerned about the ongoing security dangers of house-to-house campaigns, and the reputational problems in the event of harmful incidents.

The hope had been for more progress towards exclusively house-to-house campaigns. At the time of the IMB meeting, that had not yet fully materialised. However, there had been extension of house-to-house campaigns in the eastern and southern regions, places with the highest concentration of zero-dose children.

The GPEI leadership told the IMB that they believe that the prospects are good for agreeing on house-to-house campaigns in large swathes of Helmand province, further areas of the south and in parts of the south-east of Afghanistan. The GPEI leadership is continuing to engage very closely with the Ministry of Interior Affairs to make sure that the conditions are sufficiently secure for the safe conduct of campaigns as these new areas of access are opened up.

The Polio Programme in Afghanistan was also heavily engaged in supporting the launch of a

measles campaign. The last measles campaign (in which bivalent oral polio vaccine was added) targeted over 1.9 million under-fives in 50 districts of 24 provinces in mid-March 2022; the campaign was completed in 49 districts. This was the first phase of measles campaign, that has planned a next phase covering more than 100 further districts.

The IMB was told that the WHO Director-General met with Dr Qalandar Ibad, the Taliban acting Minister of Public Health, in Geneva in February 2022, to discuss a number of issues. The key concerns on the Taliban side were: to safeguard and secure funding for the Sehatmandi project and to improve its performance; to secure support for addiction centres for upwards of 3.5 million individuals across the country; to receive support for the ongoing response to COVID-19; and to get help with ongoing capacity-building efforts, both inside the country and outside, as well as for accreditation.

At this meeting, the WHO Director-General urged the Afghanistan authorities to grasp the opportunity ahead for polio eradication, with a particular focus on the whole house-to-house modality in the eastern and southern regions. Also, in response to a request for support on human rights, he highlighted the importance of women's rights, particularly in the health and education fields, not because it has been asked for from the outside but because it is the right thing to do for Afghanistan.



NIGERIA AND POLIO OUTBREAKS IN AFRICA

The IMB heard the GPEI leadership's views on the situation with vaccine-derived polio outbreaks in Nigeria but also held a special session with a team of officials representing the Nigeria Government. No minister was available to attend the IMB meeting. Less than two years after declaring the country, and continent, free of wild poliovirus, Nigeria faced the largest outbreak of circulating vaccine-derived poliovirus in history.

The GPEI leadership told the IMB that vaccine-derived poliovirus cases in Nigeria increased from 18 in 2019 to 415 in 2021; in that year, Nigeria contributed 62% of all such cases followed by Democratic Republic of the Congo (28 cases), Senegal (17 cases) and Mauritania (17 cases). In 2021, 31 Nigeria states were infected and within them 205 local government areas. The largest numbers of cases were in the north with numbers ranging from 86 (Jigawa state) through 42 (Kano state) to 7 (Zamfara state).

Although parts of West Africa have been cleared, there has been continued spread in the very

western part, with Senegal, Mauritania and Gambia becoming key hotspots in the last 12 months and continued transmission also in some of the more difficult areas (including South Sudan, Somalia, some parts of Democratic Republic of the Congo). The complexity of operating in these latter areas illustrates some of the major obstacles to completely getting rid of vaccine-derived poliovirus.

Just after the IMB meeting, by mid-April 2022, there were four affected countries with cases and positive environmental isolates as follows: Nigeria (30), Democratic Republic of the Congo (21), Madagascar (3), and Côte D'Ivoire (2). At this time in Nigeria, 13 states were affected.

Nigeria has been using the novel oral polio vaccine type 2 to respond to its outbreak. Even in the context of several vaccination rounds and a big round in February 2022, there have been "breakthrough" cases. "Breakthrough" transmission

is defined as vaccine-derived poliovirus detected with a date of onset (or date of sample collection) more than 28 days after the first day of the most recent outbreak response round (in this case using novel oral polio vaccine type 2). There have been 20 such detections, 17 in the north-west, (Zamfara, Sokoto and Kebbi states), and three in the south-west, (Oyo and Osun states). Two rounds of novel oral polio vaccine type 2 vaccinations were carried out in five other African countries (Benin, Congo, Liberia, Sierra Leone, Niger) between January and February 2022.

The quality of the outbreak response vaccination rounds in Nigeria has been very varied. Of the previous four vaccination rounds in the north, two did not meet the quality standard. Campaign quality was generally weaker in the south than the north. The southern part of the country has better essential immunisation rates generally, but teams there are less accustomed to doing oral polio vaccination rounds compared to those in the north.

There have been delays in vaccination responses for outbreaks in Nigeria. Some of this is COVID-19-related, some due to postponements because the government's choice to use the novel oral polio vaccine type 2 meant that sufficient supplies were not available, some was down to failure to release state counterpart funding, and some down to lack of focus and weak commitment of the states given their many other pressures and priorities.

The Nigeria Government team expressed concern to the IMB that it may be in "the quiet before the storm" because of the occurrence of wild poliovirus in Malawi, undetected, for two years. It foresaw a real possibility of wild poliovirus returning to Nigeria, through an importation. With that possibility, and the high-level of circulating vaccine-derived polioviruses, due to a decline in type 2 poliovirus population immunity over the years, Nigeria is in a very difficult situation.

Nigeria's ongoing response is taking place under

very challenging circumstances, including increasing insecurity, the COVID-19 pandemic, other communicable disease (measles, Lassa fever, yellow fever) outbreak activities, and the ramping down of GPEI resources and limited supplies of novel oral polio vaccine type 2. All these factors have increased the risk of further spread of the vaccine-derived poliovirus, despite the government's adoption (after a global round-table meeting) of a plan to interrupt its circulation before the end of 2022.

The Nigeria Government team told the IMB that, in Kebbi state, it started detecting cases in week four of 2021, but the response was not mounted until week 15. Even after the two rounds with the novel oral polio vaccine type 2, it was still isolating cases and started another response. It attributed this to "breakthrough" transmission.

The Nigeria Government team also attributed further cases of vaccine-derived poliovirus (in states other than Kebbi)– Sokoto, Zamfara, Osun and Oyo states– to "breakthrough" transmission. All these states with supposed "breakthrough" transmission had four rounds of oral polio vaccination in the outbreak response. The IMB was told that there were four rounds in 12 states, three rounds in nine states and two rounds in 16 states.

The Nigeria Government team pointed out to the IMB that it had not been able to conduct large, synchronised campaigns covering contiguous geographical areas. For example, one of the rounds, in December 2021, was planned to target 17 states, but because of vaccine unavailability, the Polio Programme could not actually target all of these states. It had to match the size and geographical scope of the outbreak response to the vaccines that were available, which apparently came in multiple small shipments.

The quality of the outbreak response campaigns in the country over the last two years has been very varied, with many examples of suboptimal delivery and generally better performance in the northern



compared to the southern states. In January 2022, the quality assurance “pass” rate in the northern part of the country was 88%. In the southern part of the country, in January 2022, the percentage “pass” was 82%.

The patches of low essential immunisation coverage are also a strong contributory factor to the outbreaks of vaccine-derived poliovirus (and also measles) that are causing so much concern. The Nigeria essential immunisation team told the IMB that 145 Local Government Areas across 29 states have high numbers of zero-dose children. The inactivated polio vaccine (IPV) coverage level was 62% in 2021; states with high coverage of the second dose of inactivated polio vaccine through the essential immunisation programme had a lower risk of vaccine-derived poliovirus transmission.

Targeted interventions are being made in migrant and nomadic populations, as they move to seek greener pastures for their livestock. Efforts to re-engage traditional leaders have started. Rapid response teams are being reactivated across states to help them respond to non-compliance and to cases in particular subpopulations.

The WHO Regional Office for Africa, working with the countries, has put in place seven outbreak

response blocks to strengthen activities at the subregional level:

Block 1: West African countries (excluding Niger and Nigeria);

Block 2: Nigeria;

Block 3: Niger, Chad, Cameroon; Central African Republic, Gabon, Equatorial Guinea;

Block 4: Angola, Republic of Congo, Democratic Republic of the Congo, Burundi;

Block 5: Kenya, Rwanda; Ethiopia; Eritrea, South Sudan, Uganda;

Block 6: Zimbabwe, Malawi, Tanzania, Mozambique, Zambia;

Block 7: South Africa, Lesotho, Namibia, Madagascar, Botswana, Eswatini.

The recent development in Malawi has raised serious concerns right across the global Polio Programme. A three-year-old girl with no history of travel and a record of only one bivalent oral polio vaccine birth dose was recorded as a case

of wild poliovirus in the urban area of Lilongwe. The date of onset of paralysis was 19 November 2021. The samples had been collected on 26 and 27 November 2021 but because of logistic problems in moving the sample to a South African laboratory, the formal results only became available in February 2022. Genetic analysis suggested similarity to a wild poliovirus case detected in Pakistan in October 2019. The GPEI oversaw teams being deployed in-country, and initiated work on the establishment and expansion of environmental surveillance sites both in Malawi and in each of the immediately neighbouring countries of Zambia, Tanzania and Mozambique.

Malawi has relatively high levels of essential immunisation coverage – in the 80%-plus range – but action is also being taken to further strengthen that coverage level, in tandem with an aggressive case response. The GPEI told the IMB that up to three million children will be targeted during the months of March and April 2022 with that immediate response, covering all of Malawi and districts in each of the neighbouring countries.

POLIO OUTBREAKS IN THE EASTERN MEDITERRANEAN REGION

In 2020, Afghanistan and Pakistan were the countries with the largest number of vaccine-derived poliovirus cases. In the last 12 months, both countries have moved from large numbers of cases to no cases. Although the job is not finished there, it does demonstrate the effectiveness of the outbreak response vaccines, if planned and deployed properly. Also, they are both countries with current experience of mounting big oral polio vaccination rounds whereas many other countries have not done so for some time.

In the wider Eastern Mediterranean Region, the WHO regional team told the IMB that priorities for vaccine-derived polio circulation in 2022 were to stop ongoing outbreaks in Somalia and Yemen and ensure cessation of transmission in Djibouti and Egypt. The regional team considers the outbreak in Somalia particularly complex. It started in 2017 and the most recent isolate at the time of the IMB meeting was in January 2022. In Djibouti, the vaccine-derived poliovirus outbreak involved the detection of five positive environmental samples, starting from October 2021 and most recently in December 2021. In Yemen a type 1 vaccine-derived poliovirus outbreak started in 2020 whereas a type 2 outbreak started in July 2021 and is ongoing. The virus spread to the south of the country and there were cases in September, October, November and December of 2021.



ASSESSMENT AND CONCLUSIONS

In this section, the IMB discusses the main issues that arise from the progress reports and insights gained.

PAKISTAN: CONSTANCY OF PURPOSE AT A TIME OF CHANGE

At the time of its meeting, the IMB found the engagement on the political front in Pakistan to be very strong. There was a sense of optimism, there was focus, and there was commitment. All the indications were that the Pakistan governments at federal and provincial levels were really engaging with polio eradication to finish the job. This sense of ownership of the Polio Programme and the strong rhythm of progressive improvement has been growing over the last two years. The IMB was told by the Pakistan national polio team: “We’ve never had it so good”.

Despite this positive feeling about the political commitment and consensus, the IMB was uneasy because 2023 will be an election year in Pakistan. Changes in government have often seriously

harmed the Polio Programme in the past. This was certainly the case with the previous Pakistan national election. Despite the unequivocal statements of cross-party support for polio eradication given to the IMB in early 2018, these promises were not honoured, continuity was seriously disrupted, changes to the programme were made that did not work and polio cases surged in Pakistan during 2019 and 2020.

In the weeks after the IMB meeting, the national political context changed dramatically. Prime Minister Khan was ousted after a parliamentary vote of no confidence in early April 2022 and much of his ruling party then resigned. While the national elections will still be in 2023, a new government is likely to be continuously in place from now until then (though there are circumstances in which this could change). The full implications of the break in continuity for the Polio Programme are not yet clear. A number of key organisational and governance features of the



Pakistan Polio Programme have been transformative in keeping the country safe from the effects of wild poliovirus for more than a year, until the appearance of two recent cases. These are: the Prime Minister's strong, personal leadership; his empowerment of the Special Assistant to the Prime Minister (Health Minister equivalent) to deliver a polio-free Pakistan; the appointment of a highly experienced head of the Emergency Operations Centre; and the tight alignment and coordination between national and provincial politicians and technical teams.

If the new government does not ensure continuity of approach and puts in place measures that do not replicate the key features of the previous arrangements, polio is likely to make a return on a larger scale.

Political commitment, consensus, alignment, and coordination are essential for polio eradication to be successful but they are not enough alone. Five other factors must also be present: technical excellence in programmatic planning, organisation and delivery; supportive communities; good levels of essential immunisation coverage; capability to get to hard to reach populations; and sanitary environments.

The Polio Programme in Pakistan is struggling to score highly in all of these five areas and there is

varied performance in its affected provinces.

So, in Pakistan, is the epidemiology really as good as it seems? A cautious response to this question would start with an apparent disconnection. First, the "viral load" is low. Second, while there have been incremental improvements to the Polio Programme's performance in Pakistan, there are still serious weaknesses in vaccination campaign performance. For example, the Polio Programme is really struggling to get a good quality campaign in southern Khyber Pakhtunkhwa. Plus, there have been few major breakthroughs in reaching and really penetrating high-risk, mobile populations. Thus, at the time of the IMB meeting, performance did not seem commensurate with the apparent level of infection.

The IMB has noted a similar kind of situation in Pakistan before. For about five months there was no polio case in the country between November 2017 and March 2018. Then, as now, IMB sources, speaking on condition of anonymity, could not point to anything the Polio Programme had done to achieve this low viral load.

At the IMB meeting, the GPEI leadership and the Pakistan federal polio team were adamant that, this time, the epidemiology was telling a true story of

almost interrupted transmission of wild poliovirus. They particularly pointed to more environmental monitoring sites becoming negative as indicative of a genuine reduced viral load.

They did concede that gaps in programmatic performance, particularly in southern Khyber Pakhtunkhwa, are worrying. Most of the IMB's discussion on Pakistan with the global and national polio teams have centred on concerns about the risks of a wild poliovirus outbreak in southern Khyber Pakhtunkhwa. The perception that this geographical area is pivotal to the eradication of polio in Pakistan was captured in a remark made by a member of the federal government polio team: "If we get the virus in Quetta or Karachi or Lahore or in any other city, that means we have lost the battle in south KP".

As the IMB report was being finalised, the GPEI reported that, in Pakistan, two new cases of type 1 wild poliovirus had been detected in North Waziristan in the Khyber Pakhtunkhwa province.

The location and origin of the first cases in the country since January 2021, does seem to confirm the concerns discussed in this IMB report about the Khyber Pakhtunkhwa province. At this point, the GPEI does not see this as a major setback, commenting in its weekly polio bulletin that: "Similar low-level transmission was also seen in other countries during the 'end game' of their eradication efforts". It remains to be seen

whether these two cases that came a few weeks after the IMB meeting are the start of something bigger.

In its discussion with the IMB, which preceded the discovery of the new cases, the provincial polio team in Khyber Pakhtunkhwa was optimistic and described a wide range of improvement actions that have been implemented or are scheduled to strengthen their Polio Programme. However, there were many causes for concern. The data showing suboptimal campaign quality, the number of "still missed" children after active vaccination campaigns, the difficulties in comprehensively reaching populations flowing back and forth across the border with Afghanistan, and the ongoing pockets of insecurity in parts of the south of the province are among the reasons that southern Khyber Pakhtunkhwa is undermining the feelings of optimism about Pakistan's progress.

That is why there has been a recent focus on surveillance quality. A surveillance review was conducted to ensure that the Polio Programme was not systematically missing cases. The report has identified certain gaps in surveillance in different areas, but appears overall to have had a reassuring influence on the leadership.





Yet, it is not entirely clear how accessible parts of southern Khyber Pakhtunkhwa actually are and whether external monitors can enter and freely move in areas where the Army is engaged in security-related manoeuvres.

The IMB understands that there is very little deployment of female vaccinators in key areas of Khyber Pakhtunkhwa province. Several IMB sources suggest that in North Waziristan, for example, female participation is less than 1%. In South Waziristan, it could be around 10% and in Bannu, in southern Khyber Pakhtunkhwa, it is estimated to be as little as 13%. Male vaccination teams do not have the authority to enter the houses, so the children have to be brought outside, thus risking chronic omission of children from the vaccination rounds. It would be even worse if there is systematic connivance and abuse of the system of finger marking; this is entirely possible but difficult to prove with conventional campaign quality monitoring methods.

When there was such a situation in polio-endemic Nigeria, an extensive network of informal contacts deep within the affected communities was able to feed real-time soft intelligence confidentially to the Emergency Operations Centre. This was one of a range of key innovative solutions necessary in the “last mile” phase of interrupting wild poliovirus transmission in that country. The IMB is not aware of any comparable initiative with this level of sophistication in southern Khyber Pakhtunkhwa. It seems that the

GPEI leadership, and the national and provincial polio teams in Pakistan are content that they are getting trustworthy intelligence on campaign quality. Gathering information on vaccination coverage is not a perfect science, so every creative effort is needed to help “triangulate” if gaps, missing populations, false data returns, and weak performance are to be identified.

Each of the four provincial Polio Programme teams was asked by the IMB to spell out their top three worries. The response was the same across the three provinces of Sindh, Balochistan and Punjab: high numbers of “still missed” children; the risks of population movement (cross-border or high-risk mobile) and low rates of essential immunisation and high numbers of zero-dose children. The Khyber Pakhtunkhwa polio team also mentioned cross-border population influx from Afghanistan but its two other worries were different. It mentioned campaign quality gaps but also the need to sustain momentum and commitment. It is surprising to hear of flagging momentum at this stage of the eradication effort.

Each of the four provinces has a range of initiatives to reduce the number of “still missed” children and increasingly is investing time and resources in very



detailed social and cultural profiling of families who refuse the vaccine or avoid encountering vaccination teams.

Sindh is a good example of where data are being used really well. The provincial polio team has gathered very rich and insightful social and cultural profile data, allowing them to match the characteristics of a family to someone who would have their trust and persuade them to let their child have the vaccine. Karachi has a large Pashtun population and these people are heavily represented among the vaccine-refusing families. While Pashtun refusals are distributed across more than eight tribes, the majority are either from the Yousaf Zai (with traditional homelands in various districts of Khyber Pakhtunkhwa) or Mahsood (with traditional homelands in South Waziristan) tribes or they are Afghans. When the reasons for refusal are analysed across seven categories, the overwhelming majority in Karachi are due to misconceptions about the vaccine. This kind of granularity of data should be like gold for a fully committed polio eradication programme.

It is important also for programme leaders to take note of any other

sources of information about their communities that is regularly assembled. UNICEF has continued to commission KAPE sample surveys in key communities in Pakistan to dig deeper into the barriers to acceptance of the Polio Programme. The IMB noticed that, in the 2021 survey in Balochistan, 53% of the overall sample refused to respond, and 32% refused in Bannu. These are worrying findings. They suggest a lack of interest and a degree of hostility towards the Polio Programme and should be regarded as an additional insight to be discussed by programme leaders. It is also not clear how the understanding of zero-dose families was advanced for planning campaigns and strengthening their quality.

Investigating the reasons for refusals and “still missed” children is essential work that the IMB has been recommending since its early days at a time that such qualitative data were not mainstreamed into the Polio Programme’s work. It was then often referred to in scathing terms

by a programme that had eyes only for epidemiological data. While the Polio Programme has woken up late to the importance of social and cultural profiling and acting on it, the approach is now fundamental to eradicating the disease.

The UNICEF survey also had four key recommendations to help improve perceptions of the Polio Programme and parents’ willingness to vaccinate. First, to reduce the frequency of campaigns. Second, to meet caregivers’ needs for other services. Third, to eliminate coercive tactics and, fourth, to increase awareness in local languages and to use visual methods to target illiterate audiences.

These issues are not new. Yet, they are fundamental barriers that require carefully crafted actions and determined implementation.

The frequency of campaigns is a hotly politicised debate. The Polio Programme’s ability and willingness



to meet caregivers' needs for other services is limited by its tradition as a vertical, technical programme. A transformative solution for polio eradication therefore depends on the federal and provincial governments in Pakistan working with existing development partners and donors. Progress in bringing modern sanitary infrastructure and dependable public services to communities tends to involve years of slow, piecemeal implementation. Whereas the need for removal of obstacles to polio eradication is on a hoped-for timescale of weeks and months at most.

Coercive tactics are not openly discussed with the IMB, but the Polio Programme must recognise that they are harmful to long-term trust-building. Ultimately, they create a vicious circle, raising further barriers to vaccination acceptance and hostility towards polio workers.

The Polio Programme must tailor communication in local languages, for particular audiences, such as the illiterate, adolescent mothers, and grandmothers. They must also test

messaging in a more systematic way to ensure it is working to break down the barriers raised, but also so that it reaches and is understood by specific groups.

In the past, the IMB has repeatedly emphasised the importance of leadership's role in inspiring, motivating, and empowering frontline teams. Seeking opportunities to improve management is important but it is evident that the Polio Programme has been very involved in activities such as functional reviews, programmatic changes, and adjustment in reporting and accountability lines. While these may bring benefits, it is important to remember that organisational and staff changes consume energy and divert attention. There must not be a higher focus on management reform than on campaign quality.

The IMB has serious concerns about

breaks in continuity through staff movement in and out of key senior positions in the provinces of Pakistan and the impact on the capability of those provincial governments to eradicate polio when there is this leadership "churn." The turnover of the deputy commissioners and chief secretaries which happens routinely and periodically in Pakistan has a big downside for polio eradication. These postholders are crucial to all the actions necessary to build an eradication-standard Polio Programme. Inevitably newcomers will be several months climbing the learning curve. Similarly, changes to Emergency Operations Centre coordinators can break continuity and affect a whole provincial Polio Programme. A new person coming in may not have a polio background and will also take time to fulfil the leadership requirements of this mission critical role.

AFGHANISTAN: FROM NEGOTIATION TO COMMON PURPOSE

When the IMB last met, the Afghanistan Government was in power and access for the Polio Programme was blocked by the Taliban in many parts of the country. Negotiations to expand access were progressing very slowly. Efforts were being directed to reforming and improving the performance and accountability of the Sehatmandi project, with a view to giving it a bigger role in delivering polio vaccination in inaccessible areas.

Everything has changed.

The position of the Polio Programme in Afghanistan must be seen against a complex backdrop of geopolitical change and a population that is suffering very great hardship and many wider threats to their health and survival as well as very poor access to, and availability of, public services. The IMB was told that just after the political transition on 15 August 2021, only 18% of health facilities had functional outreach for essential immunisation services, whilst 64% had stockouts of essential medicines. People in Afghanistan face displacement, drought, food insecurity, and malnutrition, among many other challenges. Essential immunisation coverage to fully immunise children aged 12-23 months ranges from 2% to 77%, with average estimates as

low as 3% in Uruzgan, 13% in Helmand and 22% in Paktika provinces. These are all polio hotspots.

The Taliban came to power rapidly and their approach to maintaining and developing public health services is still emerging. It is clear that their early priority was all about preventing the collapse of the health system. This was threatening intersectoral coordination; emergency preparedness and response; aspects of maternal and child health; food security; family planning; and mental health. There seems to be no formal central structure or enforcing power to hold people to account or to ensure that standards and procedures are being properly followed. Some health staff, from before the changes, have been retained, perhaps more than expected, but many places have lost their most skilled health professionals.

In September 2021, the externally-funded Sehatmandi project (effectively the country's health service) had ceased to function. No one was there to manage it and funding was terminated. The United Nations agencies stepped in to prevent total system collapse. The Global Fund to Fight AIDS, Tuberculosis and Malaria offered funding for one month's worth of salaries and essential medical supplies. The United Nations Central Emergency Fund injected \$45 million through WHO and UNICEF to cover the period November 2021 to January 2022. This meant salaries being paid, supplies procured, and operational costs being partly covered. Women have been allowed to work in health facilities, as long as they are escorted by a man to and from the premises. From February 2022, the Afghanistan Reconstruction



Trust Fund, now renamed Afghanistan's Emergency Response Fund (ERF), agreed to provide funding up until June 2022.

The international partners' interventions have provided an essential lifeline to the Afghanistan health system. However, donors are still making clear that funding will not be provided until girls are allowed to go to secondary school. The Taliban has declared that it will allow this, but only once it has made changes to the syllabus, produced national hijabs, and opened more schools in remote areas.

Managing the health sector is placing heavy demands on UNICEF's and WHO's capacity. Progress has been made with the Sehatmandi project. Utilisation and health indicators are improving. However, there are still huge problems. Equipment, consumables, and medicines are not widely available. It can take six to eight months to procure items from outside the country and there are further delays at customs on arrival. The maternal mortality rate in Afghanistan is still one of the worst in the world, with an estimated 638 deaths per 100,000 live births (2017). Every 51 minutes a mother dies in Afghanistan. By the end of 2018, more than 50% of the provinces in the country recorded high levels of severe Global Acute Malnutrition exceeding the critical threshold of 15% for children under five years of age. Current estimates predict one million children could die of severe malnutrition.

Even though geographical access for international staff has improved, and this is helping to strengthen health services, access to good quality care continues to be a top concern. Currently 77% of health expenditure in the country is from out-of-pocket payments. Afghanistan is suffering a complex burden of diseases. Non-communicable disease needs for care sit alongside those of mothers and children. Communicable diseases are a common cause of serious illness and death, while injuries – resulting from both conflict and road accidents – are also an important dimension.

Underlying all this, is the profound effect of poverty and deprivation. Data from 2016 had already indicated that 17% of people in Afghanistan lived below the poverty line, but poverty is now estimated to be universal. Afghanistan is on the leading list of humanitarian crises relevant to health, worldwide. Approximately 24 million people require humanitarian assistance – more than half the population. Women and children are the groups most adversely affected.

UNICEF and WHO have held meetings to discuss interim priorities for the health sector in Afghanistan for the next 18 months. During these meetings, requests made by the Taliban were about developing tertiary health care services, access to medicines and consumables, and fostering a highly trained and well recognised health workforce locally. Inevitably, this will take many years to build, even if there is adequate funding and coordination.

In December 2020, the World Bank offered \$100 million to the Afghanistan Reconstruction Trust Fund to underpin the Basic Package of Health Services (BPHS) and the Essential Package of Hospital Services (EPHS) until June 2022. The World Bank is intending to change the name of this project to the Health Emergency Response Project and it will last until December 2023. The amount of money involved in this package has not yet been announced.

On 31 March 2022, the High-level Pledging Event on Supporting the Humanitarian Response in Afghanistan raised \$2.4 billion dollars for reaching





those in need, approximately half of that estimated to be required.

Amidst the turmoil in Afghanistan, the GPEI is trying to ensure that the recent gains in polio eradication are not lost and to continue to progress programmes to prevent a resurgence due to poliovirus exploiting the large immunity gaps. The Taliban initially showed no interest in talking about specific programmes, whether polio or any other vaccinations, not even COVID-19, nor in dealing with a measles outbreak. It was unified in stating that its number one priority was to remedy the situation where people do not have basic services.

It is encouraging that, during 2022, core organisational components for managing the Polio Programme have been re-established. A new Health Minister is in place. He is a trained surgeon and knowledgeable about health systems and disease control. He has appointed an Emergency Operations Centre Director, who is also a physician. A new staffing structure has been set up, following a selection process in which GPEI partners have participated. The November 2021, December 2021, and January 2022 polio vaccination campaigns were conducted without any safety or security incidents. Women have been able to work in the programme

with male escorts in the teams. Tragically, at the end of February 2022, coordinated attacks in Takhar and in Kunduz provinces took the lives of eight frontline workers, resulting in suspension of the campaigns that they were part of. Taliban Ministers made a public statement, saying that these attacks will not hinder or undermine their plans to take forward polio eradication, but the implications of this serious and tragic security incident on programme functioning are not yet clear.

The Polio Programme maintains that, despite the political transition, most surveillance indicators have not deteriorated. However, the Kunduz isolates in 2021 were detected after a long quiet period. This suggests gaps in capability to detect transmission. There is also evidence of surveillance gaps in the south region, notably in Helmand, Kandahar and Uruzgan provinces. The GPEI plan is to try to validate the findings of a desk surveillance review through a field surveillance review in the second quarter of 2022.

The IMB is concerned that the Polio Programme is too relaxed about the seemingly quiescent epidemiology in Afghanistan. The population is still highly susceptible, with no campaign for the last three years in some areas and very low essential immunisation coverage. People have not been moving as much, as it has been winter; this is the low season for polio. There will soon be fewer COVID-19-related constraints on movement. For both these reasons, the wild poliovirus could be re-seeded when the high season for transmission begins.

The national campaign in March 2022 targeted 9.9 million children. The number of unreached children is highest in the south, the north east and the west. These are generally areas with mosque-to-mosque or site-to-site campaign modalities.

In the run-up to the IMB meeting, there was an additional backward step. The Polio Programme in the east region, including in Kandahar City and surrounding districts, was vaccinating house-to-house, but now is vaccinating

mosque-to-mosque. So, some coverage will have been lost there.

At the time of the IMB meeting, of the 1.5 million children not reached in recent campaigns, about 1.3 million were in the two most epidemiologically-significant regions, the east and the south. There are multiple cohorts of under-vaccinated children in parts of the south region. Also, by the time of the IMB meeting, the east region had not had a substantive house-to-house vaccination round for almost a year, although before that good coverage from house-to-house campaigns was being achieved. Since the IMB meeting, during the March 2022 national campaign, new provinces opened for house-to-house coverage, including some in the east and south regions.

There are serious drawbacks in relying on mosque-to-mosque vaccination campaigns as a way of interrupting wild poliovirus transmission. The first is that women are not allowed to enter mosques. That, by itself, is a huge impediment to reaching younger children. This prohibition also means that female polio teams are not permitted inside mosques either. Second, it is difficult to know which, and how many, children are being missed. In house-to-house campaigns, there is a good understanding of how many children were in a particular house, how many were vaccinated, how many were missed. A team can record who has been missed. In mosque-to-mosque campaign delivery, there is no clarity on which children have been missed and where they are located. Such an approach is effectively “flying blind”. Third, in large urban areas, there will never be enough mosques to cover the population of children needing to be vaccinated, especially if there is no permission to go house-to-house and mobilise children.

A featured article in one of the March GPEI polio bulletins seemingly promoted the value of mosque-to-mosque campaigns. It quoted a named seven-year-old girl in Kandahar thus: “My father is sick, and my mother asked me to bring my brother here at the mosque to be vaccinated. I know the way to the mosque,

and I had no problem getting here”. The IMB has previously emphasised the importance of the Polio Programme’s communication aligning tightly with its goals. This is vitally important when it comes to mission-critical actions where there should be no room for communication errors like this.

The inability to perform house-to-house vaccination campaigns everywhere in Afghanistan is the single biggest obstacle to success in the country. Any amount of discussion will not change the centrality of this to polio eradication. Polio experts familiar with the population and the terrain say that once there is house-to-house access, the job will be done within six months. There is virtually no place that cannot be accessed, and where the programme could not achieve 99% coverage. Past experience strongly suggests that refusals will be converted easily through influencers. Any other challenges will only be clear once access is gained and then they can be addressed systematically.



NIGERIA: THE HUNTER BECOMES THE HUNTED

A Polio Programme that was hailed for ridding Nigeria and Africa of wild poliovirus in difficult circumstances, including overcoming inaccessibility and insecurity, has plunged into crisis. It has been unable to eliminate vaccine-derived poliovirus outbreaks, causing infection to spread to many other countries. The impact of vaccine-derived poliovirus infection on a child is virtually indistinguishable from the wild poliovirus form. Yet, it is not being addressed with anything like the same sense of urgency.

A GPEI analysis found that, if all risks of vaccine-derived poliovirus had been completely eliminated in 2015 in northern Nigeria, outbreaks in 19 other countries would probably not have occurred. The IMB had repeatedly urged the Nigeria Polio Programme to avoid complacency and, particularly, to develop strong resilience.

This advice was not heeded.

How did this happen? The Nigeria Government team admitted to the IMB that, with the euphoria of the wild poliovirus eradication certification, complacency set in across the partnership. They said that before wild poliovirus eradication certification, people were concerned about performance and took their roles and responsibilities very seriously, because they were “under the global microscope.”

It is fair to say also that the COVID-19 pandemic dealt a serious blow to the country’s Polio Programme. The pandemic hit Nigeria at a time when it was just being certified as wild poliovirus-free. Around the same time, there was a precipitous reduction in the number of polio workers, especially those from WHO, UNICEF and some other polio partners. This was a move to advance polio transition.

The Nigeria Government team was critical of this, pointing out that the achievement of wild poliovirus eradication in Nigeria and Africa was a story of solidarity, between government, development partners and donors. It feels that the partnership was weakened before they were able to meaningfully transfer its capabilities to government.

The GPEI ramp down gave employment termination notices to hundreds of WHO staff who then left the country’s Polio Programme. Key staff such as the state coordinators, cluster consultants and field volunteers were no longer there. The WHO teams that had been in Nigeria for a long time had developed good working relationships and methods. Although the ramp down policy was reversed, and moves were made to re-hire staff, this did not progress to pre-certification levels.

The ramp down also affected UNICEF. The size of the social mobilisation network and the amount of support provided for overcoming vaccine refusal or similar issues was reduced. UNICEF received COVID-19 funding and has carried out general messaging on the safety of vaccines overall as well as developing more integrated approaches. However, IMB sources report that, in Kano state, a polio hotspot, mobilisation efforts to persuade people to vaccinate are much more limited than at the height of the action to eliminate wild poliovirus, when there was messaging featuring multiple languages, on all radio stations.

Although, the GPEI ramp down was part of planned polio transition in Nigeria, plans did not really consider adjustments in the pace of reduction in human resources in the face of expanding outbreaks across the country and beyond. This planning decision was a very significant element in the deterioration of the situation in Nigeria.

The Nigeria Government team told the IMB that the staff hired back have “not hit the ground running.” It also said that: “When you go to the field, the staff are not as active as you expect them to be, reaching the levels that we saw before the polio eradication certification. Perhaps they should now be brought up to speed with the current realities.” So, some of the very experienced people who were in Nigeria are no longer there, and fewer of the people being hired have the equivalent degree of experience.

This has affected the quality of campaigns. It has also affected the quality of surveillance. Laboratories are working flat out and are stretched to achieve what is necessary. The IMB got the strong impression that surveillance teams do not yet have sufficient resources, nor the leadership, nor the skills



at the local level, to close surveillance gaps.

The GPEI told the IMB that the overall resources that were allocated to Nigeria in 2021, through the infrastructure and the outbreak budgets, were significantly underspent. So, the problems seem to be due less to resource constraints than the overall organisation of the response to the worsening circulating vaccine-derived poliovirus context.

The IMB has learned that, for up to six months, payments owed to health workers and frontline vaccinators were not processed. There were two aspects to this. First, the non-payment of government staff involved in campaigns, in some southern states of Nigeria. This has now been resolved. Second, many ad hoc frontline vaccinators, hired by WHO, were not paid during campaigns, mainly those during July to September 2021. All the payments have since been made. This was detrimental to staff morale and hence to the quality of some of the vaccination rounds at that time because frontline workers needed to make up their income from other sources.

Clearly, management and team leadership in Nigeria needs to be strengthened. Polio staff need to be properly re-engaged, reorientated and re-energised. Action on this is very urgent. Linked to this, is the need for a much more rigorous form of accountability. There is no longer a Presidential Taskforce. There is a re-established steering committee, but it is not working directly with the Governors' Forum. Many polio insiders will recall how important the Governors' Forum was for holding everybody accountable at all levels in the drive to eradicate wild poliovirus from Nigeria. The

government has just reconstituted the country's Expert Review Group (its equivalent of the Technical Advisory Groups for Pakistan and Afghanistan).

Additionally, there is almost no domestic government counterpart funding available for any immunisation programmes, including for polio. Given the fiscal realities in Nigeria, the IMB is worried that counterpart funding may not be released anytime soon and the quality of campaigns will continue to be affected.

The Government of Nigeria took the decision to only use novel oral polio vaccine type 2 in dealing with its large outbreak, despite supply being thin due to inadequate supply forecasting. This policy presents two major problems. The first is that statistical modelling has shown that the longer before a response is started the worse the problem gets. So, it is best to ensure that children are vaccinated with an available outbreak oral polio vaccine immediately. The second problem arises when the response is not synchronised between states. Shrinking the scale of vaccination rounds to accommodate the size of the very limited vaccine stockpile for the novel oral polio vaccine is poor decision-making in a public health emergency. There is only one supplier for novel oral polio vaccine type 2. There are large stocks of the established alternative vaccines freely available.

Another concern raised by the Nigeria Government team was to do with the nature of the "breakthrough" cases of vaccine-derived poliovirus. In all the countries with outbreaks of type 2 vaccine-derived poliovirus that have been

able to use novel oral polio vaccine type 2 for their response, most stopped the outbreak. Nigeria is the glaring exception where there have been many “breakthrough” cases. The IMB pressed the GPEI leadership very hard on whether there was a valid concern about the new vaccine. The IMB was told that studies to date have identified no serious attenuated poliovirus mutations, even though over 100 million doses of novel oral polio vaccine type 2 have been given. The GPEI Strategy Committee has also overseen immunogenicity studies in places that novel oral polio vaccine type 2 has been deployed, bearing in mind that the original set of such studies, done in standard controlled trials, showed no significant difference between the immunogenicity of the novel oral polio vaccine and the pre-existing vaccines and in standard populations. The expert view is that the recent “breakthrough” cases in Nigeria are due to suboptimal campaign quality or scale and not a problem with the new vaccine.

The Nigeria Government team expressed a strong conviction that its use of inactivated polio vaccine had been essential to the success of its wild poliovirus elimination strategy. It now wants large supplies of it to help combat the vaccine-derived poliovirus outbreaks. It is not clear how such an approach would affect the country’s current ability to do appropriately sized, high quality oral poliovirus vaccine rounds of the required frequency.

Nigeria has approximately 3.2 million under-immunised children. The trajectory is upwards, despite immunisation rates having improved. Almost 20,000 babies are born every day in Nigeria and services are unable to keep up. This is particularly worrisome in the northern part of the country.

In the IMB meeting, the Nigeria Government team shared its thinking on how to use

immunisation resources in a more integrated way, by combining the delivery of the pandemic vaccines, routine antigens and polio vaccines simultaneously, either door-to-door or as close to the community as possible. To do that requires state-level engagement, which has proven to be patchy. The ability to pull off such an ambitious strategy will be a real challenge. There may not be enough vaccinators for all the injectable vaccines that need to be given.

There is no doubt that the complexity of the insecurity situation in Nigeria has increased. A few years ago, it was limited to the north-east, principally Yobe and Borno States. Now, insecurity has spread from the north-east, to a large part of the north-west as well. There are also areas in the south-east that are affected. Occurrences of kidnapping have been reported from across the country. So-called “sit-at-home” orders issued by separatist groups are affecting programme planning and delivery. If such an order is in place in a particular area, this means that a polio outbreak response that was planned cannot take place. The Nigeria Polio Programme continues to use its experience from pre-2020 in engaging the military, and the police, to provide access to communities. It is important to re-evaluate the security needs of the Polio Programme and to scale-up and coordinate protection now that the insecurity has moved to places which were previously unproblematic.

In Nigeria, 2022 is a pre-election year. Over the last 15 years, changes in government have been a major





and important risk to the country's performance on polio.

In the forthcoming election, more than two thirds of the state governors' posts will be affected. There will also be change at the Federal level in the 2023 elections due to term limits. This requires high-level advocacy action from the GPEI leadership and Nigeria senior public health officials to maintain high political attention and engagement. The importance and urgency of addressing vaccine-derived poliovirus has obviously slipped off the political radar. It is vital to reverse this situation and also make clear the importance of boosting levels of essential immunisation, particularly at the subnational level.

Nigeria's essential immunisation performance is well below what would be expected for a country that had eradicated wild poliovirus and was building resilience on the journey to a polio-free world.

The polio leadership team in Nigeria clearly knows, at a technical level, where the problems are and what needs to be done. It has very good analysis about what is happening at the national level. However, many of the lower-level activities that used to happen – the evening meetings, the problem solving, the accountability frameworks, engaging governors and religious leaders, the acclaimed mobilisation of communities, and the Abuja commitments – have not remained intact.

The Nigeria Polio Programme was at peak performance in 2016 when wild poliovirus transmission was interrupted. It had strong political will, cross-party commitment, high levels of professional and technical expertise, an extensive network of supportive traditional and community leaders, effective means to overcome insecurity so that inaccessibility did not harm delivery, an emerging primary care strategy that held a promise of rapidly strengthened essential immunisation system and, above all, hands-on solidarity and funding streams from the GPEI.

The Nigeria Polio Programme became steadily degraded as a fog of complacency enveloped it. Everyone was too quick to walk away and leave a job half-done because of a headline-grabbing success. Even within Nigeria, key individuals were allowed to believe that polio was gone. As a result, paralytic polio swept across Africa. This should not have happened, need not have happened and has brought misery to hundreds of families. Precious polio dollars have been consumed. The Nigeria Polio Programme must be restored to its former level as a matter of urgency.

The IMB's impression is that the Nigeria programme's leaders have not fully thought through how substantive the task ahead of them actually is and how it will involve a scaling up of scope and effort for a very extended period of time. They are only too aware that they are not where they want to be. They seem a little embarrassed that they have let the situation go on as long as it has and become as big as it has. It will not be enough to think of only one or two vaccination rounds. A longer-term plan will be essential. It will need to address key strategic questions such as the threat of wild poliovirus returning (especially in the light of the Malawi case), stopping completely vaccine-derived poliovirus circulation, and vaccine deployment policy. The GPEI is putting a large amount of money and human resources into Nigeria to bring the country's Polio Programme to a place where they can respond appropriately. How long can the GPEI sustain this in the face of future looming resource mobilisation concerns?



MORE THAN 'MOPPING UP': AN EMERGENCY CULTURE FOR OUTBREAK RESPONSE

In some countries, and parts of countries, outbreak response campaign quality has just not been adequate to stop transmission. This includes countries like the Democratic Republic of the Congo that has not been able to interrupt transmission since the outbreak was declared in 2017. On the other hand, the Polio Programme has been successful in stopping transmission in a number of places. However, the spread continues, and this is a critical issue. The quality of campaigns is not the only problem. There have been too many delays in initiating them.

In its last report, the IMB emphasised the need for outbreak responses to be earlier, faster, larger and better and reiterated its advice (also SAGE's) for countries to use existing vaccines rather than holding on for the novel oral polio vaccine to arrive. This is, of course, also the view of the GPEI leadership but it does not seem to have enough leverage with some of the countries to ensure a consistent and robust outbreak response.

The GPEI is certainly trying to deal with poor vaccination campaign quality. It is providing technical support and advice to countries' governments on planning (including microplanning), reviewing preparedness indicators, independent monitoring, and ensuring that they are ready to launch on the date scheduled. It is pushing strongly away from using novel oral polio vaccine only, to using any available vaccine. The message going out to affected countries is to use whatever oral polio vaccine type 2 is available for

the response and not to wait around.

Seemingly, the availability of novel oral polio vaccine type 2 has been problematic, with only one supplier and limited forecasting by countries. Production is being expanded but there has been a period in which the amount of vaccine available has not been enough to supply the requests coming in from countries. The Polio Programme has now organised shipment of enough of the novel vaccine to cover all planned vaccination rounds. Thereafter, supply will be very limited until at least the middle of 2022, especially for any newly identified outbreaks.

There has also been a big emphasis on enhancing the use of International Health Regulations mechanisms.

The sense of urgency for getting the job done on polio seems to have vanished among competing priorities, especially to get rates of COVID-19 vaccination up. Communities do not always see the polio vaccine as a priority. That is because they were told wild poliovirus has been eradicated from Africa. However, there is still demand for other kinds of vaccines especially due to outbreaks occurring at local levels.

Finally, the GPEI leadership told the IMB that it is trying to take a longer-term advocacy approach with countries to prevent outbreaks as well as respond to them. This will include engagement with external stakeholders. A GPEI advocacy group is working on a more comprehensive plan to ensure that it is engaged with the key influencers for specific countries. This is being seen as an ongoing process, but something that is critical in order to get governments to actually prioritise action.

CONCLUSION

Since the previous IMB meeting, and subsequent 20th report in June of 2021, a growing sense of optimism has pervaded the Polio Programme as the positive poliovirus epidemiology in the endemic countries was sustained for more than a year and hopes grew that the approval for use of novel oral polio vaccine type 2 would wipe out vaccine-derived poliovirus emergences and outbreaks.

Almost a year on, this optimism must be tempered by some cold realities. The arrival into a certified polio-free Africa of a case of wild poliovirus in Malawi, reported in February 2022, raised a red flag for those other countries in that continent with inadequate levels of population immunity and no recent experience of intensive surveillance activity and of delivering high quality vaccination campaigns. In the weeks after the IMB meeting, the detection of two new wild poliovirus came in Khyber Pakhtunkhwa province, Pakistan, the first in 2022 thus exceeding the total number of wild poliovirus cases in 2021, with only a quarter of 2022 gone. It confirms the consistently expressed concerns about the risks of transmission in that province. Campaign quality in all provinces in Pakistan is not as good as it needs to be while the number of persistently missed children is not coming down fast enough.

In Afghanistan, the new authorities have not yet adopted an eradication-standard Polio Programme that uses house-to-house campaigns in every part of the country, a commitment that would almost certainly see polio gone within six months.

Nigeria no longer has the quality of programme that eradicated wild poliovirus from the country. It has generated unacceptably high numbers of vaccine-derived polio cases affecting many of its states and numerous other countries. There are many factors that have weakened Nigeria's capacity and capability to prevent and respond to polio. It is also clear that, for Nigeria, complacency has had serious consequences. Too often a question was left hanging in the air unchallenged: if polio is gone, why are we still responding to polio?

Nigeria's polio and essential immunisation programmes must be strengthened as a matter of urgency. It will be no easy task and the full support of partners will be vital.

In some countries with vaccine-derived poliovirus outbreaks, or vulnerable to them, there are political tensions, competing priorities, and ineffective governance, all of which are making it difficult to implement polio operations. There are also places within countries where there are insecurity problems limiting access for surveillance and vaccination activities. Then there have been simple supply challenges, like getting vaccines into countries with limited flights. In other countries, the occurrence of a small number of polio cases may not engender much government interest, especially in the ongoing struggle with COVID-19 and the pandemic vaccine roll out. Polio is no longer always treated as a public health emergency as it would have been in the past.

When it comes to vaccine-derived polio outbreaks, the GPEI does not have command and control leverage over countries as it would have had when wild poliovirus was circulating more widely. It is disappointing to see the Polio Programme having to resort to advocacy to influence countries, rather than pointing them to the GPEI's guidance, SAGE's guidance, the IMB's recommendations, and expecting them to comply with the required programmatic policies and standards.

A key learning point in the last two years is that the global Polio Programme cannot allow the quality of its operation to slide in countries that have the potential to become a major source of spread of polioviruses, either wild or vaccine-derived. These key places have been referred to as "consequential geographies." In the current polio epidemiological context, this applies mainly to Nigeria but is relevant also to Democratic Republic of the Congo and some other places. In future, it will be Pakistan and Afghanistan that will have to build strong resilience to keep polio out once wild poliovirus circulation has finally been stopped. They must not make the mistakes that Nigeria did.

DATA INSIGHTS

Wild poliovirus epidemiology trends in the four Pakistan provinces

PROVINCE	DETECTION TYPE	2019	2020	2021	2022	LAST DETECTION
Punjab	Positive environmental samples	39%	53%	6%	0%	19 May 2021
	Number of cases	12	14	0	0	21 October 2020
Sindh	Positive environmental samples	73%	70%	7%	0%	6 July 2021
	Number of cases	30	22	0	0	14 July 2020
KP	Positive environmental samples	25%	14%	7%	1%	5 April 2022
	Number of cases	93	22	0	2	14 April 2022
Balochistan	Positive environmental samples	51%	69%	12%	0%	12 April 2021
	Number of cases	12	26	1	0	27 January 2021

Source: Pakistan Polio Programme
Data as of 14 April 2022

Variable and inadequate performance shown in campaign quality scores (LQAS) in the four Pakistan provinces

National campaign	Punjab	Balochistan	KP	Sindh
September 2021	88%	85%	85%	82%
December 2021	91%	82%	86%	79%
March 2022	84%	67%	78%	75%

Source: Pakistan Polio Programme
LQAS: Lot Quality Assurance Sampling

Serious performance failures shown in campaign quality scores (LQAS) in districts of the southern Khyber Pakhtunkhwa province of Pakistan

District	Subnational campaign	National campaign	National campaign	Subnational campaign
	August 2021	September 2021	December 2021	January 2022
Bannu	60%	88%	60%	69%
DI Khan	88%	70%	100%	81%
Khyber	100%	100%	100%	92%
Karak	75%	100%	50%	0%
Lakki Marwat	100%	100%	100%	91%
Tank	100%	100%	25%	50%
North Waziristan	67%	100%	-	50%
South Waziristan	100%	75%	83%	50%

Source: GPEI
LQAS: Lot Quality Assurance Sampling

Serious performance failures shown in campaign quality scores (LQAS) in districts of Karachi in the Sindh province of Pakistan

District	Subnational campaign	National campaign	National campaign	Subnational campaign
	August 2021	September 2021	December 2021	January 2022
Central	64%	42%	50%	70%
East	70%	80%	70%	38%
South	70%	50%	75%	71%
West	60%	90%	83%	75%
Karachi Keamari	50%	60%	100%	25%
Karachi Orangi	90%	80%	50%	50%
Karachi Malir	63%	70%	67%	50%
Hyderabad	50%	90%	75%	100%

Source: GPEI

LQAS: Lot Quality Assurance Sampling

Serious recent performance failures shown in campaign quality scores (LQAS) in districts of Quetta in the Balochistan province of Pakistan

District	Subnational campaign	National campaign	National campaign	Subnational campaign
	August 2021	September 2021	December 2021	January 2022
Chaman	-	-	100%	33%
Gilla Abdullah	94%	100%	0%	75%
Pishin	100%	100%	94%	60%
Quetta	95%	100%	90%	75%
Mastung	100%	0%	50%	67%

Source: GPEI

LQAS: Lot Quality Assurance Sampling

Poor routine immunisation coverage in southern Khyber Pakhtunkhwa (KP)

Zero dose for routine oral polio vaccine in non-polio acute flaccid paralysis cases			
Location	2019	2020	2021
Southern KP	60%	51%	41%
Bannu	50%	38%	22%
DI Khan	72%	20%	32%
Lakki Marwat	50%	50%	49%
Tank	32%	45%	34%
North Waziristan	84%	75%	62%
South Waziristan	80%	93%	57%

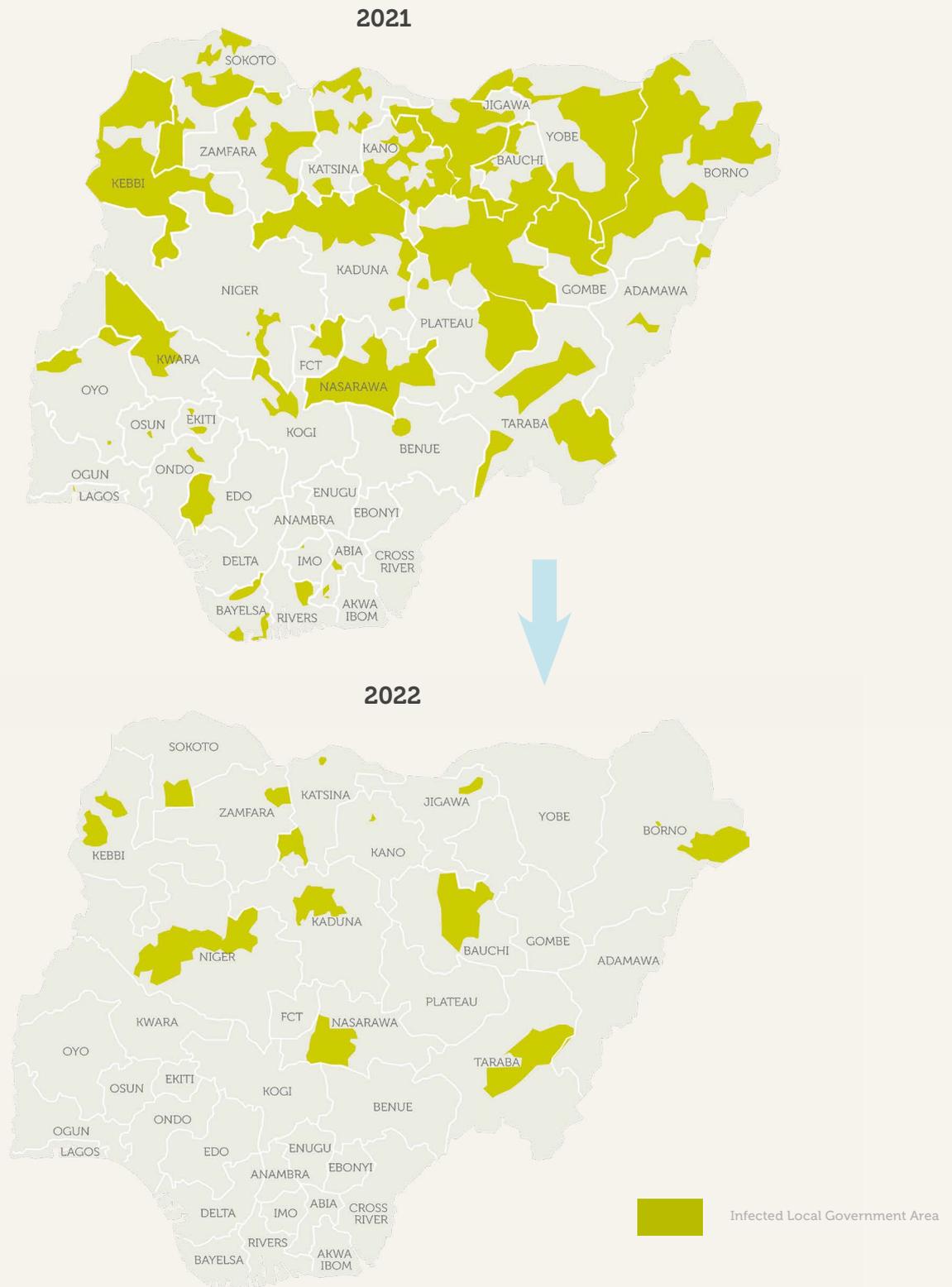
Source: GPEI

Wild poliovirus detections (cases and environment) in Pakistan provinces in 2021

Location	Balochistan	KP	Sindh	Punjab
Detections indigenous to province	16	6	14	11
Detections imported from other provinces	2	7	2	6
Total	18	13	16	17

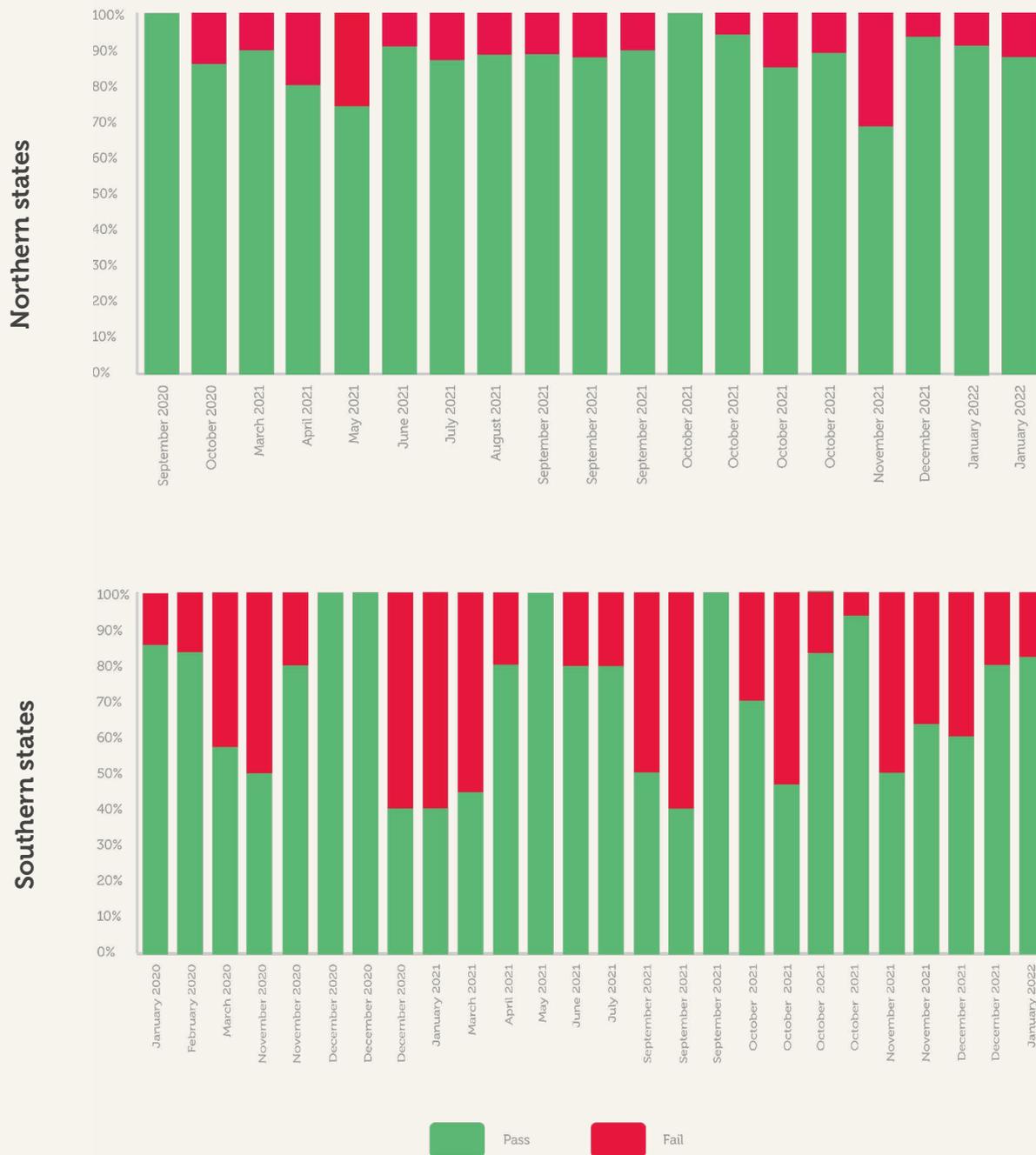
Source: Pakistan Polio Programme

Wide distribution of vaccine-derived poliovirus cases in Nigeria



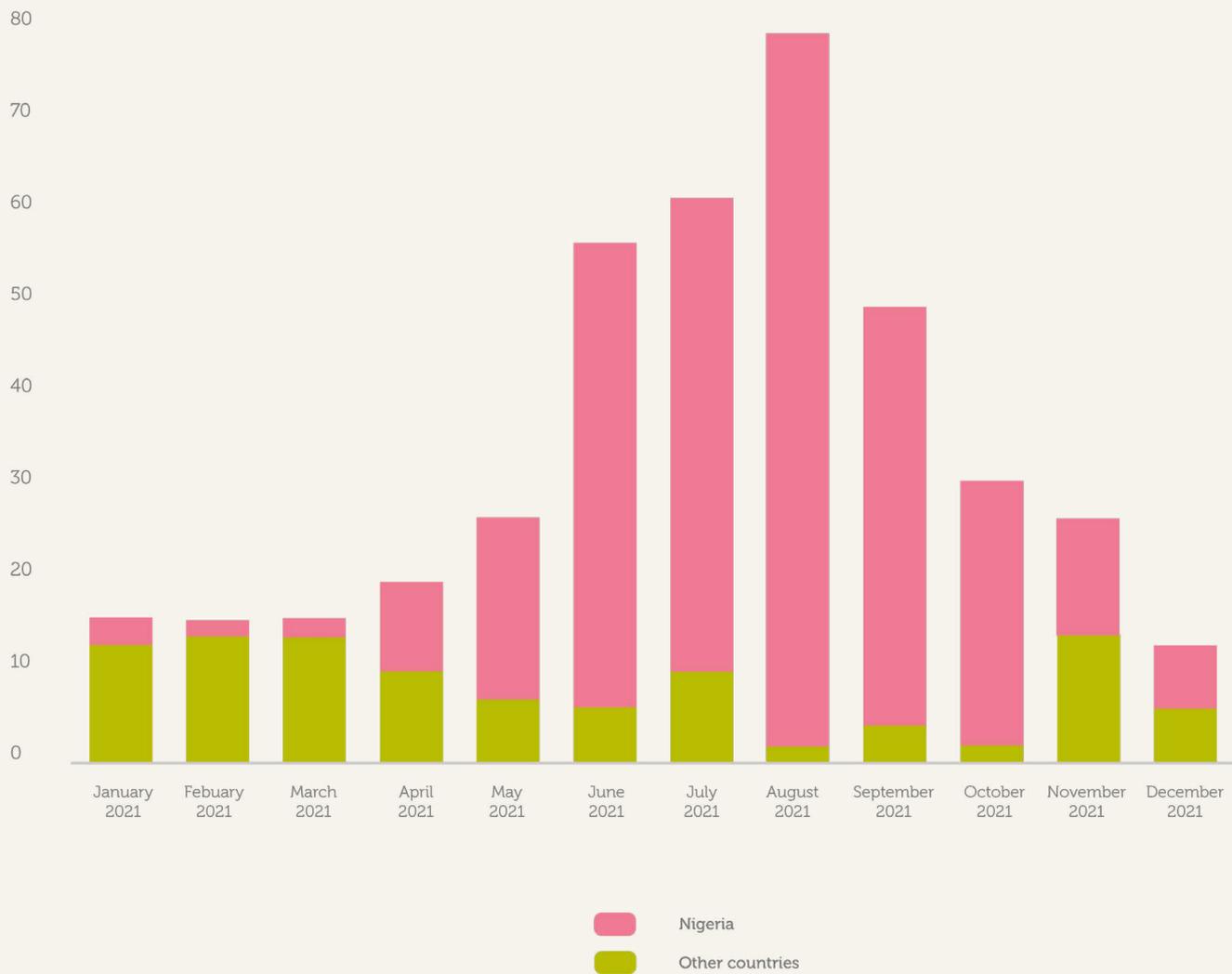
Source: GPEI
Data as of 18 April 2022

Poor performance in the southern states of Nigeria on post-campaign quality score (LQAS)



Source: Government of Nigeria
LQAS: Lots Quality Assurance Sampling

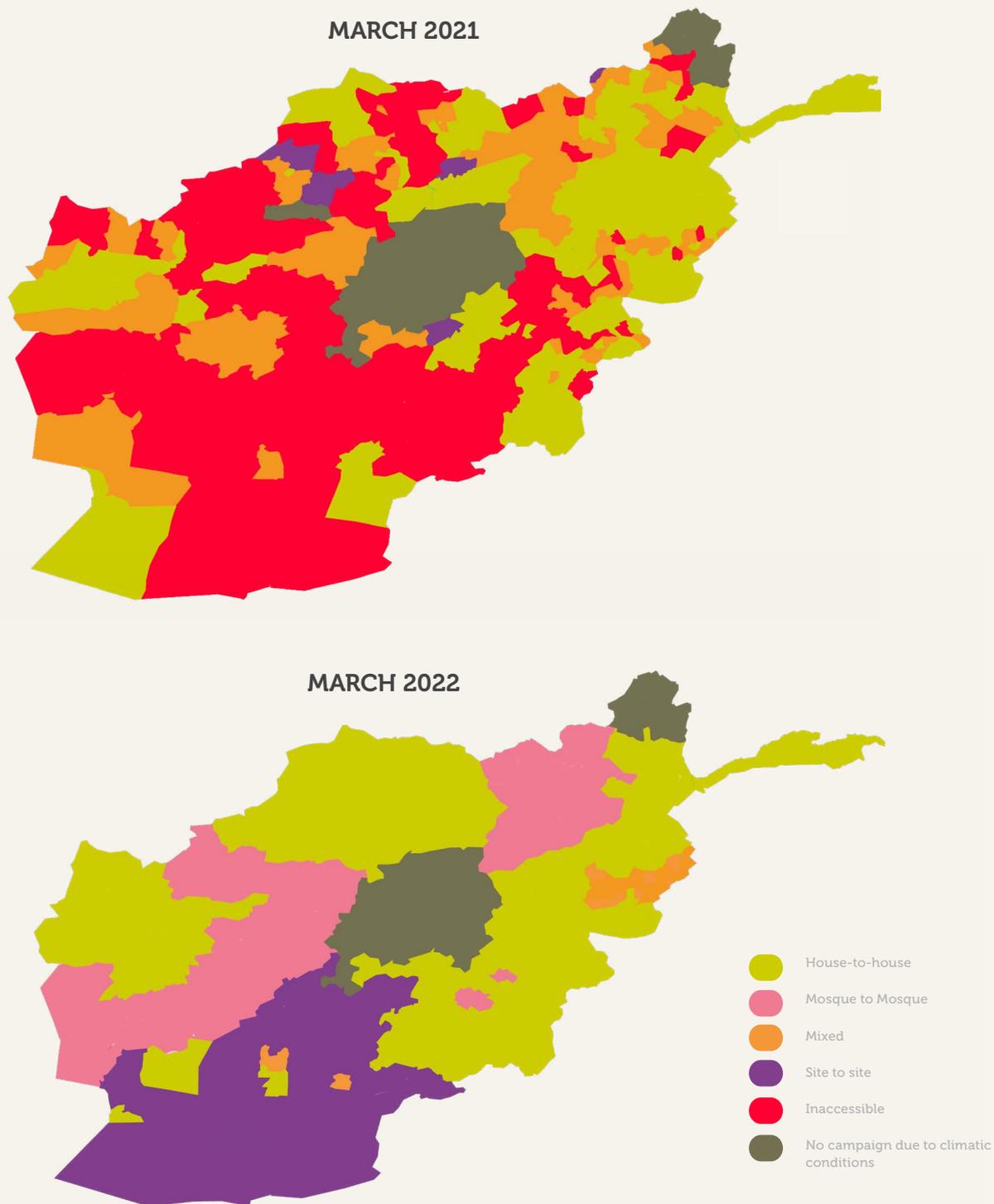
Vaccine-derived poliovirus cases: the 2021 surge



Source: GPEI

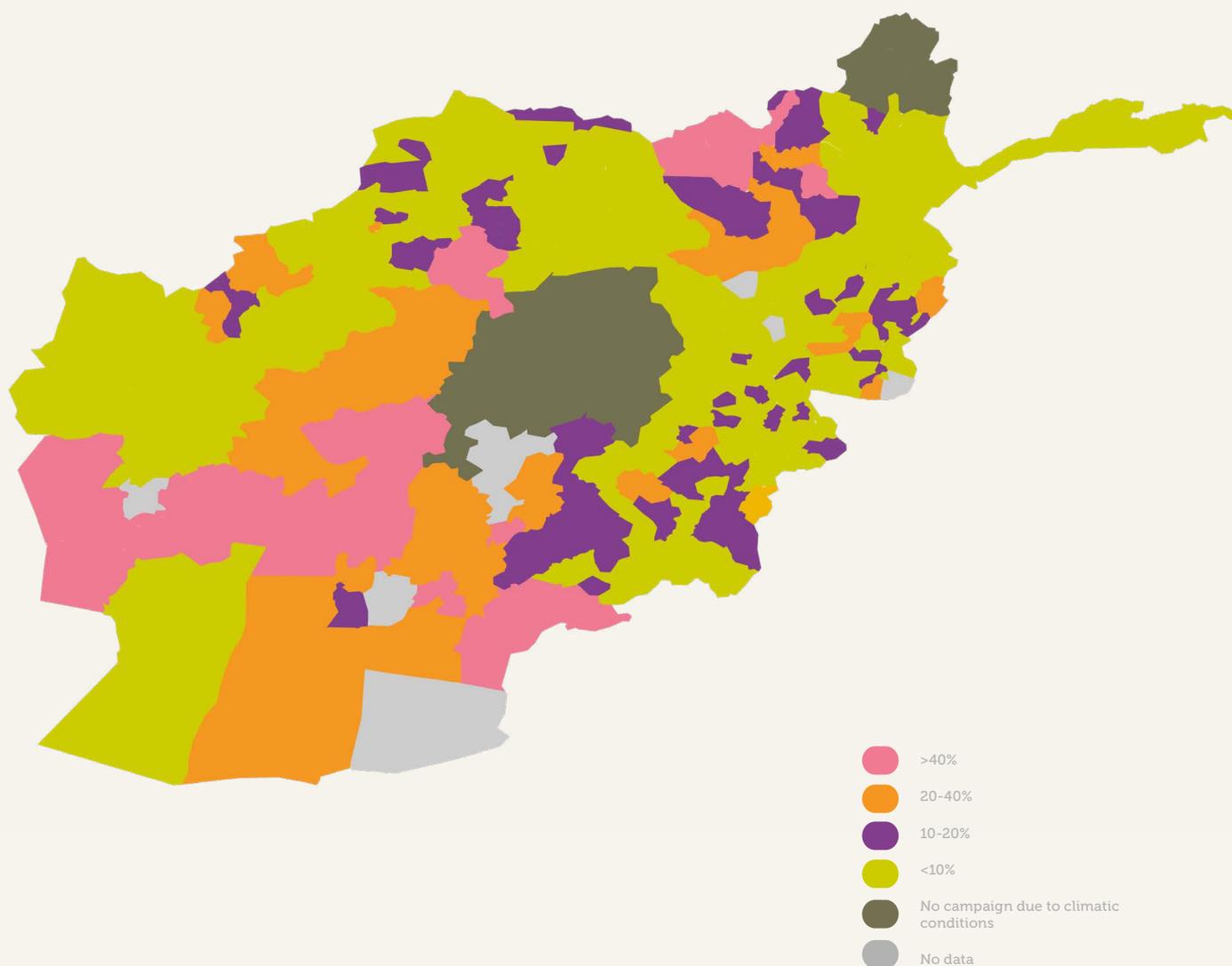
Polio vaccination before and after change of administration in Afghanistan

Less effective mosque-to-mosque modality in disease hotspots



Source: GPEI

Campaign quality monitoring in Afghanistan: percentage of missed children (finger marking survey), March 2022



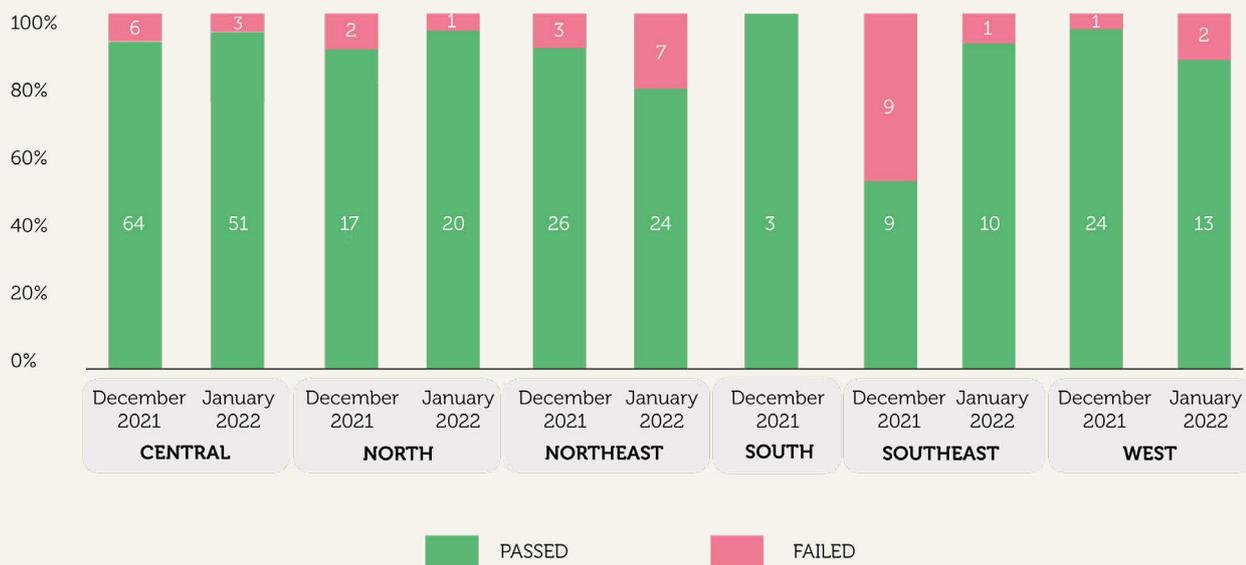
Source: GPEI

Mosque-to-mosque campaign modality does not create an eradication-standard polio programme in Afghanistan

CAMPAIGN QUALITY (LQAS): MOSQUE-TO-MOSQUE



CAMPAIGN QUALITY (LQAS): HOUSE-TO-HOUSE



■ PASSED
 ■ FAILED

Source: GPEI
LQAS: Lot Quality Assurance Sampling

RECOMMENDED ACTION

IN PAKISTAN

01

The recent change of national government in Pakistan risks loss of continuity in the cross-party support for polio eradication in the country and disruption to the political and technical alignment and solidarity between the federal and the four provincial polio programmes. The run-up to the national election in 2023 is an added dimension to this risk. **The IMB recommends that the new Prime Minister of Pakistan gives his strong and public commitment to, and directly involves himself in, finishing polio eradication in this endemic country and that he works to maintain and sustain a political consensus to this end. It is also recommended that continuity of polio leadership is maintained, together with the collegiate style of working that has enabled federal and provincial programmes to share information, learn from each other's experience and plan and prioritise action together. This need to maintain continuity should extend to trying to reduce the turnover of provincial secretaries, district commissioners and provincial emergency operations centre coordinators.**

02

The southern part of the Khyber Pakhtunkhwa province of Pakistan is the biggest source of concern of the Polio Programme and was the site of two new wild poliovirus cases in April 2022 after the country had not reported such a case for 14 months. Despite apparently reassuring reviews of the quality of surveillance, it is likely that there are "blind spots" in the detection of poliovirus and cases in areas of this province that are security-compromised or where there is anti-government sentiment. **The IMB recommends that the national and provincial polio teams work together to set up a confidential incident reporting network in Khyber Pakhtunkhwa to supplement and triangulate traditional surveillance reporting. Any systemic element of fake finger marking in vaccination delivery, detected through this process, should be recognised and dealt with as a priority. Such an additional channel of reporting was used in Nigeria to identify pockets of polio in remote and insecurity-affected areas in the north of that country, and was one of a number of innovations that proved decisive in the eradication effort there.**



03

Despite a great deal of good, committed work, none of the four Pakistan provincial polio programmes is yet achieving an eradication-standard of performance and there are four weaknesses in particular: suboptimal and variable campaign quality, high numbers of persistently missed children, failure to adequately reach high-risk and other highly mobile populations, and low essential immunisation rates together with too many zero-dose children. Improvements have tended to be incremental and it is difficult to see how “more of the same” will produce the great leaps forward that are so necessary. **The IMB is conscious that other global health programmes, experts and researchers will have had experience in dealing with very similar barriers to progress and thus recommends that the GPEI leadership convenes a facilitated high-level meeting, with diverse non-Polio Programme attendance, soon to explore ideas and opportunities for transformational improvements in these key areas.**

04

A forceful and inspiring commitment by the Polio Oversight Board at its 2018 meeting, following representations by the IMB, led to a plan for sanitary reform to improve water and waste disposal to strike at the heart of the poliovirus’s faecal–oral mode of transmission in the super-high-risk union councils in Pakistan. Progress has been small-scale and fragmented, falling well short of the transformational potential of the original idea to take action on this. **The IMB recommends that the Polio Oversight Board uses the full weight of its oversight and accountability governance powers to correct the limp trajectory that its plan has fallen into.**

IN AFGHANISTAN

05

Poliovirus circulation could almost certainly be eliminated quickly in Afghanistan if house-to-house vaccination campaigns were authorised and carried out in all parts of the country immediately. A mosque-to-mosque based approach, even in part, does not create an eradication-standard Polio Programme for the country and persisting with it risks more cases when the high season starts. **The IMB recommends that the new Afghanistan administration and the GPEI move out of negotiation mode in discussing these matters and resolve to work jointly and supportively to launch a new and comprehensive programme to bring the polio vaccine to every house in the country before polio takes hold again and starts paralysing the country's children.**

IN NIGERIA

06

In the aftermath of eradicating wild poliovirus in its country, the Nigeria Government and its public health programmes have failed to deal with, and recognise the emergency they are in, with vaccine-derived poliovirus producing large numbers of cases affecting its population and triggering international spread. The Polio Programme has become degraded in a number of very important respects. The importance and urgency of addressing vaccine-derived poliovirus has slipped off the political radar. Given the deterioration of the situation in Nigeria, and noting the case of wild poliovirus in Malawi, the country is now also at risk from a re-imported wild poliovirus. **The IMB recommends that the Government of Nigeria and senior GPEI leadership should work together strategically and urgently to rebuild the capacity and capability of the Polio Programme in**

the country to include all the previous innovations that were key success factors in interrupting wild poliovirus circulation in 2016. It is vital also, as part of this rebuilding, to re-energise the process of boosting levels of essential immunisation, particularly at the subnational level, that was such a strong government commitment five years ago.

07

In Nigeria, 2022 is a pre-election year. More than two thirds of the state governors' posts are affected. The governors were key players for polio eradication and remain so for stopping vaccine-derived poliovirus and boosting essential immunisation coverage. There will also be change at the Federal level in the 2023 elections due to term limits. Past changes in government have brought a serious break in continuity of the country's performance on polio. **The IMB recommends high-level advocacy action from the GPEI leadership and Nigeria senior public health officials to maintain full political attention and engagement, specifically in the context of forthcoming elections. *This recommendation is synergistic with recommendation 6.***

08

The outbreak vaccination strategy in Nigeria has not been well thought through and has been poorly executed in respect of timing of response, planning, choice of vaccine, campaign quality and geographical scale and coordination. **The IMB recommends that the GPEI global leadership at senior level works with the Nigeria Government to plan and manage its vaccination strategy (in respect of both oral and inactivated polio vaccine) for the next two years, crucially taking account of projected vaccine supplies and matching them to the required scale of response.**



IN COUNTRIES WITH POLIO OUTBREAKS OR VULNERABLE TO OUTBREAKS

09

Beyond the situation in Nigeria, it is likely that the remainder of 2022 will see continuing negative impacts to the Polio Programme's ability to respond quickly and effectively to outbreaks of vaccine-derived poliovirus as country capacities and programme capabilities continue to be challenged and difficult prioritisation decisions need to be made. In the last two years, this, together with national government preferences on vaccine policy, has led to delayed, small-scale, fragmented responses to outbreaks and, thus, to some substantial avoidable spread of infection. **The IMB recommends that the GPEI leadership should focus heavily on: trying to instil a collective emergency culture; formal re-adoption of common protocols for outbreak prevention and response; and commitment on the part of country governments to accept expert advice on vaccine choice and deployment.** The continuity of GPEI funding streams, vaccine supplies, external technical support and the International Health Regulations should be part of discussions to engender greater global solidarity on this.

10

The pandemic-related cancellation or delays in vaccination rounds, as well as the negative impact on the delivery of essential immunisation services because of the pandemic, has led to an accumulation of un-vaccinated and under-vaccinated children. This is on top of already lower than required essential immunisation coverage rates in countries with outbreaks, those vulnerable to outbreaks, and the endemic (or recently endemic) populations of Nigeria, Pakistan and Afghanistan. Important strategic shifts in polio transition planning and implementation are driving the necessity of programmatic integration to address the need to rapidly strengthen essential immunisation programmes, particularly in countries that will transition completely out of Gavi and GPEI support at the end of 2022. **The IMB recommends that reactive and outbreak response activities, as well as preventive vaccination activities, are implemented in a multiantigen format where possible, signalling the importance to communities that polio immunisation is a mainstream children's health necessity and not some sort of West-driven special project.**

