

INDEPENDENT  
MONITORING  
BOARD OF THE

# GLOBAL POLIO ERADICATION INITIATIVE

A woman wearing a leopard-print headscarf is shown in profile, writing on a wall with a piece of chalk. The wall has some faint markings, including the number '12'. The scene is lit with a warm, orange glow.

**NOW IS  
THE TIME  
FOR PEAK  
PERFORMANCE**

# 12

TWELFTH REPORT: OCTOBER 2015

INDEPENDENT  
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# GLOBAL POLIO ERADICATION INITIATIVE

The Independent Monitoring Board provides an independent assessment of the progress being made by the Global Polio Eradication Initiative in the detection and interruption of polio transmission globally. This report follows the IMB's meeting held in London from 5 to 7 October 2015.

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## OVERVIEW

1. The number of cases of polio that have occurred so far in 2015 is at its lowest point in history.
2. Since the last report of the Independent Monitoring Board (IMB), Nigeria has been removed from the list of polio endemic countries. Only two now remain: Pakistan and Afghanistan. No Wild Polio Virus (WPV) Type 3 has been reported anywhere in the world since November 2012, no WPV2 has arisen since 1999, and no WPV1 has been found in Africa since August 2014 in Somalia. These are major achievements.
3. The Global Polio Eradication Initiative (GPEI) has implemented changes to its structure and functioning following the management and governance review that reported in 2014. Decision-making, partnership working, overall leadership, financial transparency, and the cohesiveness of the programme have steadily improved since then but the level of coordination across partners necessary to assure high within-country performance remains problematic.
4. The Polio Oversight Board (POB), at its meeting at the end of September 2015, after reviewing four end-of-transmission scenarios, concluded that the most likely outcome of the eradication programme is that polio transmission will be interrupted in 2016, and eradication officially certified by 2019. This was given the status of a formal voting decision by the Board. This scenario has been costed by the Board's Finance and Accountability Committee and requires \$1.5 billion of funding on top of the budget already earmarked for eradication.
5. Should polio transmission not be interrupted by 2016, a further at least \$800 million per year would be needed to deal with the consequences. This figure could easily be \$1 billion per year.

## KEY STEPS

6. The Polio Oversight Board's decision to pick 2016 as the year in which transmission will be stopped is not merely a planning assumption. In effect, it sets a new deadline to follow the sequence of earlier missed deadlines that were set in the polio programme's periodic strategic plans.
7. To create a realistic chance for this new timescale to be achieved, the following five measures are the minimum required:
  - High quality campaigns during the low season (the last before the deadline) in both Pakistan and Afghanistan;
  - Greatly strengthened resilience in areas of inaccessibility, and poor coverage, in Nigeria;
  - Massive cuts in the number of missed, and persistently missed, children in both endemic countries, Nigeria, and all other areas that are vulnerable because of low immunity levels;
  - Rigorous application, and careful targeting, of combined IPV/OPV in a more consistent way than hitherto in Pakistan and Afghanistan;
  - Major and rapid expansion of environmental surveillance throughout Pakistan and Afghanistan coupled with rigorous outbreak response action when positive samples are found.
8. The programme must be in no doubt that if it comes out of the forthcoming low season in Afghanistan and Pakistan with polio cases still occurring or with many positive environmental samples, then there will surely be further outbreaks of the polio virus.

## AFGHANISTAN

9. Afghanistan has more cases of polio caused by wild polio virus in 2015 than at the same point in 2014. The Afghanistan programme is performing the worst of the two endemic countries that started the year expecting to improve. It is not yet therefore on a path to interrupt polio transmission.
10. In the southern part of the country, the root cause of the failure is weak social mobilization and vaccination team performance. Overall, 62% of missed children are absent, and in an additional 17% of situations, parents refuse. These metrics, derived from social data, are a clear indicator of poor programme performance. If the country is to have any chance of interrupting transmission during the low season, this must be turned round with the greatest urgency.
11. In the eastern part of the country, the reasons for missed children are different. Here, refusals are in the minority, with 64% of missed children not reached because they were inaccessible due to insecurity. The security situation is worsening in this region and some of the factions are overtly anti-polio vaccine. In addition, increasing fragmentation of anti-government elements have made it harder to negotiate access.
12. There are eight districts in Kandahar and Helmand provinces where polio cases have occurred and where there have been chronic inaccessibility issues caused by intermittent local access bans.
13. Working relationships between the country offices of WHO and UNICEF, between the two agencies and their headquarters, and with the Afghanistan government are not well aligned and are frankly ineffective. Polio transmission will not be interrupted unless these dysfunctional relationships are sorted out.
14. The last IMB report asked for the establishment of an Emergency Operations Centre (EOC). Successful experience in Nigeria (and increasingly in Pakistan) is a guide to how to design this transformational organizational structure. The spearheading partner agencies also have expertise to support the process. The IMB judges that there has been little progress since its last report. The IMB reiterates that the establishment of an Afghanistan Emergency Operations Centre is a matter of the greatest urgency.



## PAKISTAN

15. The management and governance processes within the programme in Pakistan have improved since the last IMB report. A functioning Emergency Operations Centre is now in place. Shortcomings in data are being addressed. Health Camps are operational in different parts of the country; they provide a range of public health services, engage more communities, and, thus, inter alia increase polio vaccine uptake, and improve relations with communities. There is more training of front-line workers. A fresh communications strategy is being rolled out.
16. Access has improved substantially – with the number of children in inaccessible areas falling from over half a million in 2013 to 35,000 this year. There have been fewer wild polio virus cases in the first half of this year compared to last – this is particularly noticeable in the Federally Administered Tribal Areas (FATA) where cases are down by over 90%.
17. One innovation that is proving effective is the Continuous Community Protected Volunteers. This involves using locally recruited staff – often female – working with a low profile but on a continuous basis within their own communities and promoting health practices beyond polio vaccination. This should be rapidly scaled up.
18. The IMB is encouraged by recent progress in Pakistan but the programme in this country is still not closing the serious immunity gaps quickly enough. Pakistan still has widespread virus. It is not in as strong a position as Nigeria was in less than a year before that country interrupted transmission; in Nigeria, the virus really was down to the final reservoirs only. The following critical steps in performance and accountability are now needed in Pakistan:
  - improvements in supplementary immunization activity. In the highest risk districts, 48% of missed children are not seen simply because a team did not visit them;
  - improved monitoring of performance;
  - major reductions in the number of persistently missed children particularly in the Peshawar and FATA regions. There are still one million under-immunized children in the country.
19. The IMB is concerned that populations are being missed because they are not known about. Micro-planning is well-established good practice and essential to track down each child in an area. However, this must be combined with micro-censuses to document and enumerate previously unrecognized or newly located populations.
20. Stopping polio transmission in Peshawar and surrounding large areas is vital. Peshawar is the fifth largest city in Pakistan. From it, a densely populated area spreads out through the Peshawar Valley. Big and regular population movements connect it to the Federally Administered Tribal Areas of the country and to Afghanistan. This vast interconnected area has been described as the “conveyor belt” of polio transmission. This is not to ignore or neglect polio transmission in other parts of Pakistan but simply to recognize that this area is the key to unlocking a solution for the country and indeed the whole world. One of the IMB’s recommendations is that the geographical arrangements for management and coordination of the polio programme match the epidemiological geography of the regions.



## NIGERIA AND THE REST OF AFRICA

21. Nigeria has recently been removed from the list of polio endemic countries having been free of cases for over a year. This should be a source of pride for the Nigerian and global programmes but not a cause for celebration. There are still areas of inadequate immunity in parts of Nigeria and also in other countries in Africa. The risk of re-introduction of infection remains substantial.
22. The management focus of the Nigeria programme must move to building resilience. This is more than a state of vigilance, watching for new cases of polio. Instead, it means a relentless quest to identify every possible weakness and vulnerability in the country's defenses against polio. It means using a wide range of surveillance and monitoring data to probe gaps in immunity and levels of missed children in the most vulnerable parts of the country. It means resolving problems of inaccessibility as robustly as during the successful drive to get the polio cases down to zero.
23. Shifting the focus of the Nigeria programme to resilience requires the same strong level of political and professional commitment as before. It requires the same high level of technical and managerial performance as before. It requires an obsessive interest in having enough of the right data and acting on the insights that this creates. In short, it requires the leaders and frontline workers in Nigeria as well as the partners in the GPEI to wake up every morning and ask themselves and each other the question: "Where are the chinks in our armour?" And to see the work of the day, and a pride of achievement, in closing them.
24. The IMB is strongly emphasizing these points about Nigeria for three reasons. Firstly, monitoring data for Borno show that 60% of communities are not being reached by supplementary immunization activities this year. Secondly, IMB sources are reporting that day-to-day involvement of key local officials is waning and that there are doubts about the level of government funding going into the programme. Thirdly, that the concept

of resilience is novel to the programme and needs to be well communicated if the essential change to the mindset of leaders, policy-makers, managers and the public is to be achieved.

25. There have been no polio cases in other African countries for over a year. This is good news but the dream of a polio-free Africa has not yet been realized because the safety net of high childhood immunity to polio in Africa is still patchy and unsatisfactory. The African Regional Office of WHO and its UNICEF partners need to do more.

## UKRAINE

26. In its previous reports, the IMB has warned about the poor state of children's preventive health services in Ukraine. This prompted high level representations and warnings to the government of Ukraine from the GPEI management team, the WHO headquarters, the WHO regional office for Europe and the European Communicable Disease Centre but to no avail. Now, the inevitable has happened: two cases of paralysis caused by a vaccine derived polio strain.
27. The response in Ukraine has been nothing short of shameful. In response to previous concerns, levels of coverage of all vaccine programmes remained very low. No budget was allocated for vaccines and no vaccines were procured. There has been no public communication or social mobilization campaign of any note and as a result false and damaging rumours about vaccine safety have been able to take root. With this background, it might have been expected that a robust response to the polio situation would have been mounted. Instead, the response was to make no response (within the timescale that international standards require) and to depart from best practice in the choice of vaccine strategy.

## SYRIA AND OTHER COUNTRIES IN MIDDLE EAST

28. Prior to the conflicts in the Middle East many of the countries now affected had maintained good levels of polio vaccine coverage. Today, in some places, public health services are barely functioning, leaving populations vulnerable.
29. Since the large outbreak of polio in 2013 that produced 38 polio cases across Syria and Iraq, the GPEI led by an outbreak response team based in the Eastern Mediterranean region of WHO, has focused on closing immunity gaps where possible. In particular, the focus (outside Pakistan and Afghanistan) has been on: Syria, Iraq, Somalia, Yemen, and Libya. The team is strengthening surveillance and commissioning additional vaccine rounds as well as carrying out regular regional risk assessments.
30. Despite the good work being carried out by the program in the region, the situation remains fragile. The insecurity situation is fluctuating. Elections in Iraq and Egypt could cause disruption to the programme. Political leadership and commitment to polio is not strong in some countries. The major risks are of a new importation of polio or the emergence of a vaccine derived strain of the virus.
31. Attention has rightly focused on refugees coming out of North East Syria and Iraq but it is important to ensure that services within the countries themselves continue to be sustained to serve people remaining in the countries and do not collapse.
32. The large population movements across the region and out into Europe create a heightened risk of resurgence of polio. The position of Syrian refugees is causing greatest concern. An estimated three to four million people have been displaced to Turkey, Lebanon, Jordan and are at the centre of a mass migration across Europe. The priorities are to vaccinate at crossing points and in refugee camps. This is good. However, there are various

reasons why refugees at different points in their journey may not want to be officially recognized or registered. For example, IMB sources report that a sizeable population of Syrian refugees, having reached Jordan, chose to avoid registration and residence in the refugee camp in that country. Vaccination levels within the camp are good but those who have disappeared and are living and working in the community may not have access to public health services. If this hidden population harbours large numbers of "zero-dose" families (as seems likely), then this poses a serious risk.

33. Detailed auditing of the programme's key processes in this turbulent region is essential. IMB sources give anecdotal accounts that the complex emergency in Yemen has interfered with refrigeration facilities. These may be isolated occurrences but the programme needs to be alert to systemic problems that are being hidden by broken routes of communication and oversight.



## PERSISTENTLY MISSED CHILDREN

34. Since its earlier reports, the IMB has championed the need for the programme to view the number of missed children as a key metric of performance and as the major driver of improvement. The programme adopted this approach but progress has been slow in getting the numbers down. The number of children who are missed persistently in vaccination rounds is of the greatest concern.
35. An analysis presented to the IMB at its October 2015 meeting estimated that there are 6.6 million children in the African, Southeast Asian and Eastern Mediterranean regions of WHO who have never received oral polio vaccine. This number is a blot on the polio eradication landscape. It is difficult to see how transmission of the infection can be stopped in 2016 with this millstone hanging round the programme's neck.
36. The reasons for children being missed fall into four main groups: a) The vaccination team did not turn up on the day and time that they were supposed to; b) The child was not available when the team visited their home; c) The parent(s) refused permission to vaccinate; d) The population needing vaccination was not accessible to the vaccination team.
37. These broad categories often conceal deeper explanations for why children are missed. For example, refusals may reflect a lack of trust in vaccinators; in two regions of Pakistan where polio is still transmitting researchers found that caregivers' trust in vaccinators was at 26% and 34% against a Pakistan average of 61%; in the Borno state of Nigeria it was 48% against a Nigeria average of 70%; in Afghanistan, the national average was 41%, far from where it should be in a country that has been successful in the past. These data are not something to be mused over whilst drinking a nice cup of coffee. They should trigger alarm bells at every level of the programme. The absence of trust in any human endeavour is a recipe for failure.

38. A laser-like focus on the reasons why children are missed, asking the question Why? Why? Why? again and again until it yields the true root causes of missed children in a particular locality is the first step to getting over the finishing line of polio eradication. Using qualitative research in this context will be particularly useful. The second step is to align action to remove the barrier to a child being missed and successfully vaccinated. It is vital to recognize that uncovering the reasons for a child being missed and choosing the solution is often a very local, context-specific matter. The programmatic point is that a philosophy of understanding why every child has been missed and implementing a sustainable solution must permeate the GPEI and its country delivery system from top to bottom and from bottom to top. There should be no surrender to an attitude that missed children are "the cost of doing business."

## VACCINE DERIVED STRAINS: A MENACING DISTRACTION

39. The presence of vaccine-derived strains of polio virus was always seen a relatively minor loose end to be tidied up when the problem of eliminating transmission of wild polio virus had been dealt with. In addition to Ukraine, there have been vaccine-derived strains of the virus found in Madagascar and Lao PDR (Type 1 strains) as well as South Sudan and Guinea (Type 2 strains). The programme needs to deploy top performing teams to deal with these situations urgently. The Type 2 occurrences in particular threaten the global oral polio vaccine switch.
40. The International Health Regulations (IHR) mechanism has been very helpful in the latter stages of controlling wild polio virus transmission. It would now be crucial for cVDPV. The scope of the IHR review committee is currently limited to wild polio virus only. This does not make sense and the scope should expand to cover cVDPV as well.



## SECURITY

41. In each of the endemic countries, those recently endemic and those where outbreaks have occurred, there is a common theme: areas of insecurity, and the disruption to infrastructure, access and government attention that this brings. In several areas, due to continued geopolitical and local events, the situation on the ground may get worse in the months ahead. The IMB does not underestimate the difficulty of vaccinating in security-compromised areas and deeply respects the commitment and bravery of those who operate within them. The programme has developed great experience and expertise in addressing such situations. There is one aspect where the IMB believes that the programme could make its approach even more effective. This would be to make it a "Golden Rule" that, in every security-compromised area where vaccination is to take place, the vaccination plan should be fully integrated with a matching security plan agreed with the relevant district and local powers.

## THE CHALLENGE OF MAINTAINING FOCUS WITH INCREASING PROGRAMME COMPLEXITY

42. The IMB was set up primarily to monitor the first objective of the GPEI: to interrupt polio transmission everywhere and move on to certification of global polio eradication. In its earlier reports, the IMB pointed out that the legacy of the GPEI required formal consideration and also that the vaccine policy and supply aspects of the final stages of interrupting transmission and sustaining it for three years until eradication needed a clear strategy. Good work subsequently has taken place to address these matters. The same staff that are accountable for interrupting transmission are also expected to manage: the logistics of a forthcoming planned major switch in the type of oral polio vaccine used by the programme, a worldwide roll-out of inactivated polio vaccine (including to polio affected countries) and the evaluation and preservation of polio infrastructure and good practice that can provide future benefit to other public health programmes, particularly routine immunization. While this is vitally important, it must not become a distraction from the number one goal of the programme: clearing polio out of every corner of the world.



## CONCLUSIONS

43. The Polio Oversight Board's new deadline that polio transmission will be interrupted during 2016 has set the GPEI and countries a formidable challenge requiring a major improvement in programme performance in the year ahead.
44. The challenge for Nigeria, having stopped polio transmission for over a year, is to switch from an approach of driving cases down to zero to a programme philosophy of strengthening resilience. This will require not only a different mind set but an equally powerful level of commitment, a continuing strong funding stream, and a relentless focus on data that point to weaknesses in communities' defences against polio infection. Nigeria is currently a polio-free country but not yet a polio-resilient country.
45. The challenge for Pakistan's programme, that is much better coordinated and led than it was a year ago, is to stop the "conveyor belt" of transmission in Peshawar and surrounding large geographical areas. Polio virus is still widespread in Pakistan so Peshawar cannot be the sole focus of attention. This is the last low season before the new 2016 deadline and, if polio transmission is not interrupted during it, there will be a large outbreak in Pakistan during the ensuing high season.
46. The challenge for Afghanistan's programme is to clear the fog of doubt and dysfunction that is swirling around it, as it too moves into the last low season. The establishment of a fully functioning Emergency Operations Centre is an essential first step and should happen immediately. Resolving ineffective inter-agency and government-partner working relationships is also a high priority. Polio will not disappear from the country without close and regular strategic planning and implementation with neighbours Pakistan.
47. Vulnerabilities to further polio transmission emerging outside the endemic countries have not gone away. The devastating outbreaks of 18 months ago in the Horn of Africa and the Middle East are still a raw memory and the blows to the pride, credibility and finances of the programme were heavy ones. There are more than 400,000 child refugees in the Horn of Africa alone. Much good work has gone on to reduce the risks of a recurrence but the fluctuating security situation, variable political commitment and some suboptimal frontline performance mean that resilience is too fragile. The large-scale population movement, particularly out of Syria has added a new challenge. This is not just the obvious one of organizing large-scale vaccination at border crossings but the growing risk posed by refugees avoiding official registration and containment within camps. The mass movement of invisible, low immunity populations across large distances is a new and chilling component of the risk equation.
48. For some time, Ukraine has been a catastrophe waiting to happen. The situation there is now catastrophic and a danger to surrounding countries. Vaccine derived polio viruses in four other countries are also causing the IMB concern.
49. If every level of the programme, from global, to national, to regional, to local, to team, to individual vaccinator were relentless and unswerving and at their most creative in finding missed children, understanding why they were being missed and putting in place a solution matched to local circumstances, polio would be gone from the world.
50. The human costs of failing to eradicate polio have always been clear. As a result of the work of the main board of the GPEI, the financial implications are now clear. From this moment forward, any serious lack of leadership commitment, any tolerance of sub-standard vaccination team performance, any failure to find and successfully vaccinate a cluster of persistently missed children could cost \$1 billion per year on top of the existing programme budget. There is no hiding place at any level of accountability from the price tag for every year that programme failures big and small shield the polio virus from species extinction.

## INTRODUCTION

This is the 12th report of the Independent Monitoring Board (IMB) of the Global Polio Eradication Initiative (GPEI). It is being published as the number of paralytic polio cases has reached its lowest point in history. It is able to report that Nigeria has been removed from the list of polio endemic countries. It assesses that Pakistan has strengthened its programme since the last report. There remains much to do in Afghanistan.

In September 2015, the Polio Oversight Board considered a number of scenarios for the interruption of transmission across the remaining endemic countries. After careful consideration, the board concluded that this is most likely to occur in 2016 – leading to eventual eradication in 2019. As a result of this decision, a new financial commitment – an additional \$1.5 billion – is now required. While not only setting a definite fundraising goal, this decision also sets a new, demanding timetable for the completion of the task. While this is to be commended, the costs of not reaching this target are substantial – estimated at \$800 million for each extra year. The message from this is stark: at this late stage, the smallest weakness in performance on the ground might end up having multi-million – or even a billion – dollar consequences.

The 11th report of the IMB was entitled The Rocky Road to Zero. The truth is that there is no smooth path to polio eradication and there never has been. To have the state of mind that all that is now necessary to claim the glittering prize of global polio eradication is simply to mop up the few remaining cases in the last two endemic countries, is to be quite deluded. The risks of transmission continuing beyond the new deadline of 2016 remain high. The polio eradication programme that began its work in the 1980s has been a marathon not a sprint. To overcome the final barriers, and eliminate the remaining risks, the programme will have to be like an athlete who is at peak fitness, and ready to perform at a level better they have ever achieved before. This is an essential state to be in because the race is against an opponent – the polio virus – that has had thousands of years to prepare for its final battle for survival and has won all its previous races. The programme is not yet that supreme athlete but it still can be.

## FINANCES: BOLD DECISIONS, SUBSTANTIAL CONSEQUENCES

Scenario	1	2	3	4
Nigeria interrupts	2014	2014	2014	2015
Pakistan\Afghanistan interrupts	2015	2016	2017	2017
Global certification	2018	2019	2020	2020
<b>Total cost</b>	<b>\$6.5b</b>	<b>\$7.8b</b>	<b>\$8.6b</b>	<b>\$10b</b>

Total cost includes costs to certification and post-certification costs. Budget to certification in scenario 2 is \$7.0b

The late, and still greatly missed, Dr. Ciro de Quadros, public health leader and IMB member, who won the race against the polio virus in the Americas, said:

**“WHEREVER, THERE ARE WEAKNESSES IN IMMUNITY LEVELS, IN SURVEILLANCE, OR IN MONITORING; WHEREVER AN UNVACCINATED CHILD LIES SLEEPING; WHEREVER, AN IMMUNISATION CAMPAIGN LACKS PASSION, THE POLIO VIRUS WILL FIND THEM.”** Ciro de Quadros

The polio eradication programme has all the experience, all the know-how, and all the skill to interrupt the transmission of polio now. On behalf of Humankind, it must use this power to drive the polio virus into extinction.

This IMB report aims to provide the GPEI with the insights and the recommended action to help it to finish the job.



## AFGHANISTAN

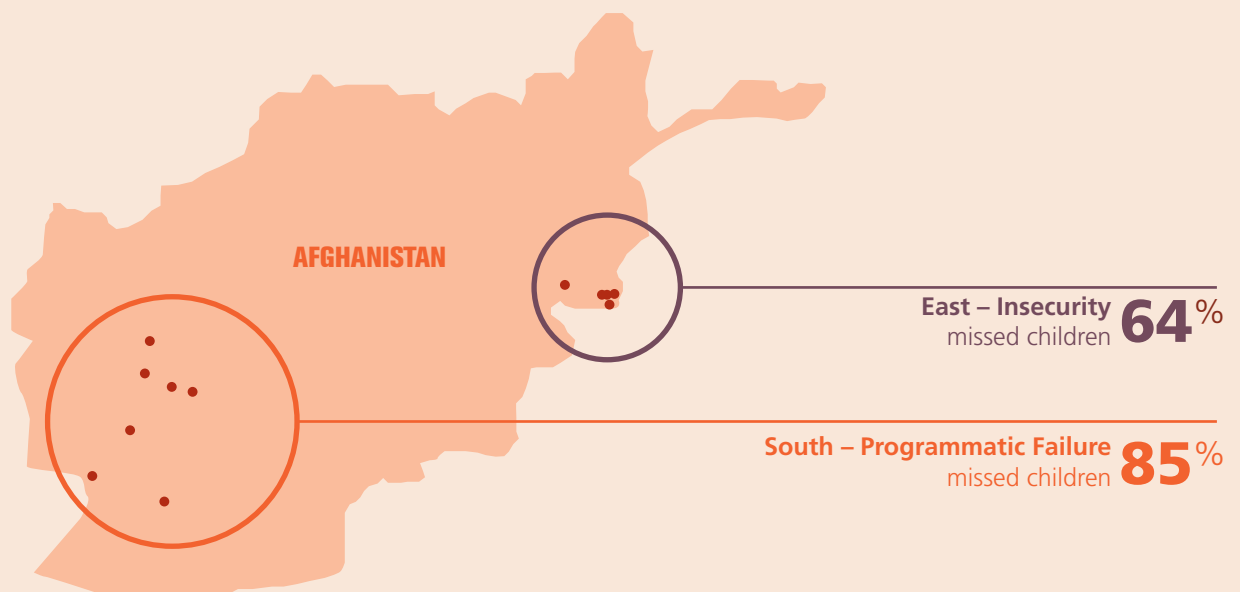
The programme in Afghanistan is not yet on a path to interrupt transmission of polio. There is a lack of clarity, serious dysfunction, and slow decision-making at all levels. This is reflected in performance on the ground, with more cases so far this year than last. With one low season to go before it needs to interrupt transmission, this is the wrong trajectory. Corrective action is needed.

At the broadest strategic level, the security and accessibility situation has darkened and become more fragmented. It is less clear who is leading the anti-government groups; they are splintering, making the routes to negotiating access less obvious. Three years ago, there was a stronger climate of neutrality, a humanitarian emphasis, for the polio programme. This did not mean that there were never any access problems but it did generally allow vaccination campaigns to be planned and implemented on schedule. Today, IMB sources tell us that the polio vaccine is again becoming a political chess piece and that factions within the country are prepared to restrict or ban access when there is something to be gained in their wider agenda. The series

of bans in southern provinces – creating a disruptive and unpredictable access to the children in many districts – have led to reduced immunity and foreshadow the potentially more complicated future environment for the programme. This reinforces the importance of using every single window of opportunity for access when it is opened. The IMB's recommendation for a new GPEI policy to integrate security and operational plans is relevant to this.

At a technical level, the data reveal different problems at the point of delivery that are leading to missed children. In the east of the country the problem is access – 64% of children are missed because they cannot be reached. In the south, it is poor programmatic performance and social mobilization – 62% of missed children are said to be “absent” or unavailable when the vaccinator calls, for another 17% the parents refuse, and for 5% the team did not show up at all. This is a reminder that the security situation cannot be used as an excuse for poor performance – where access is available, it is too often being let down by poor supplementary immunization activity quality.

### AFGHANISTAN – REASONS FOR MISSED CHILDREN



While the new National Emergency Action Plan is a step forward, the fact that it was a “just in time” product that was handed out at the IMB October meeting, ink barely dry, rather than sent in advance, suggests a reactive style of leadership. The arrangements at the top level in the Afghanistan government for leading the polio programme on paper seem clear but are far from it in reality. Overall accountability appears to be operating on a “dispersed” model. As a result, those partners external to the government are drawn into “people watching” rather than being able to progress matters with someone who has the power to agree policy and take decisions on behalf of the government. The first step in ensuring an effective programme is to achieve strong and cohesive coordination. At present this is not happening. Progress in establishing a working Emergency Operations Centre (EOC) in Afghanistan has moved at a snail’s pace. The urgency of this vital necessity cannot be overemphasized. The implementation process should be measured in days not weeks.

A person of real leadership substance and field experience should be put in charge of the Emergency Operations Centre. If the wrong person is appointed for political or

other reasons then it could cost the global polio programme hundreds of millions of dollars, because the polio virus will continue to thrive in Afghanistan. For this reason, the most senior people in the GPEI should take a direct and personal interest in working with the government to ensure the right the quality of individual is appointed to this role.

In addition to the complexity within the internal governmental structures, the international partners across the programme have not always proved to be at their most effective in joint working in Afghanistan. Multiple IMB sources are reporting that there are conflicts at country level about who is in charge of the technical direction setting. The conditions for delivering the work are no doubt hard, given the uncertain security environment. However, these features make it even more important to share data and resources – and too often this is not happening.

Given the important role of Non-Governmental Organisations (NGOs) in delivering services, they must play a full role in the new Emergency Operations Centre. This is particularly so given that they operate in the parts of the country that the government does not control.



## PAKISTAN

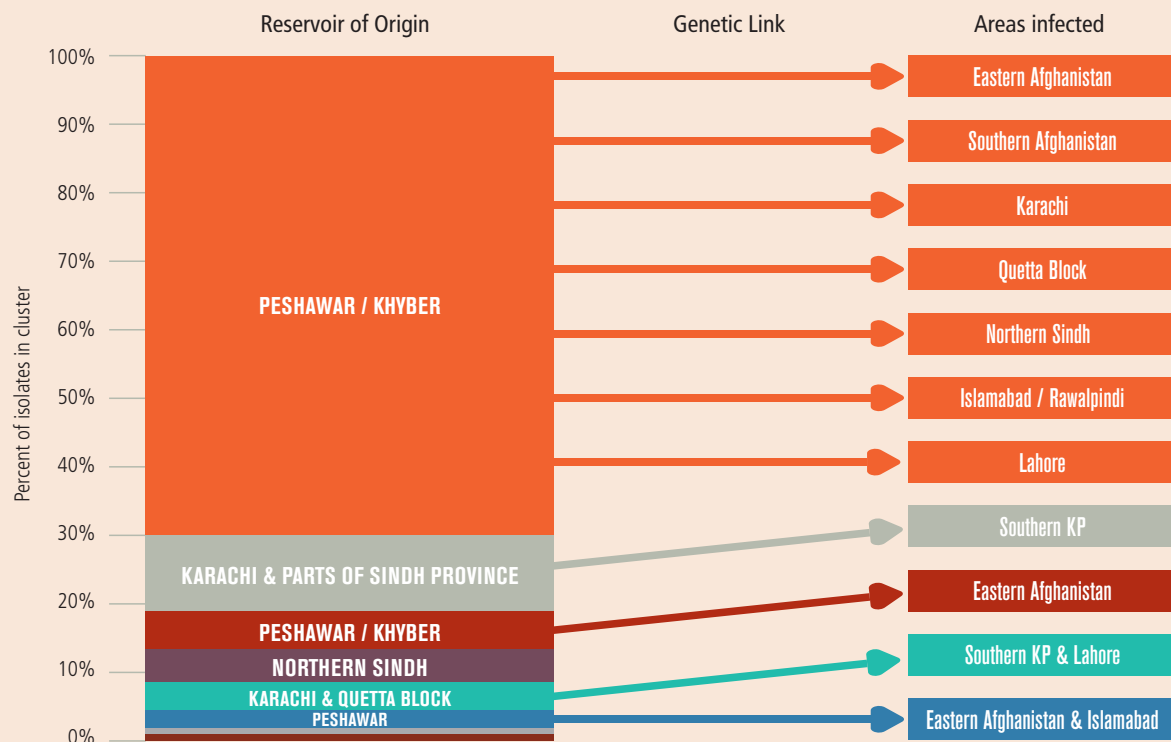
Since the last IMB report there has been considerable improvement in the polio programme in Pakistan. At the most recent meeting of the IMB, the Pakistan delegation showed that they are tightening their grip on the management and planning of the programme in their country. The provincial secretaries, who also attended the meeting, demonstrated their deep knowledge and commitment and are now clearly part of the global polio eradication family. This good progress does not obscure continuing areas of concern – both geographic and programmatic – that must be addressed. There is still more to do.

To its credit, the programme in Pakistan has been successful in achieving government and political engagement at the

national and regional levels. Emergency Operations Centres – national and provincial – are up and running and are making a difference. The increased involvement of regional government in many areas has been impressive, and their local knowledge, relationships and diplomacy will continue to be crucial to the effective management of the programme.

In some places, innovations have been tried and found effective. The Continuous Community Protected Vaccination (CCPV) approach – placing local, female community health worker at the heart of their own community and going beyond simple polio vaccination promotion – seems a sensible and pragmatic way to do business. These should be scaled up.

### ACTIVE WPV1 GENETIC CLUSTERS IN PAKISTAN: THE IMPACT OF THE PESHAWAR CONVEYOR BELT



Source: WHO  
Technical footnotes omitted for clarity, available on request

In addition, the new positive and trust-based communications campaign represents progress, particularly the presentation of frontline workers as champions of their community. The strengthening of training of operational level staff is also good – notably the high proportion (96%) of supervisors who have been through enhanced training in the higher risk districts. Health Camps, offering a range of popular public health services have become an established way of building trust and reaching more children with the polio vaccine. They are expensive but indispensable

These innovations all point towards a progressive, incremental improvement and are reflected in the substantial reductions in the number of cases compared to last year. The reduction in cases in FATA by 94% compared to 2014 is particularly impressive.

At the same time, the immunity gap is not being closed fast enough. One million children are under-immunized. The number of inaccessible children has improved, reflecting an improved security situation – falling from over half a million in 2013, to less than 35,000 in September 2015.

Whilst security is a barrier to reaching children in some areas, outright poor programme performance should never be excused. In some areas, supplementary immunization activity remains sub-standard – notably in Quetta and Karachi. This year has also seen cases of wild polio virus in Sindh – away from areas of previous concern. These non-conflict affected provinces should be performing better. This is a reminder that no part of the country can fall out of view, even when the main focus is on a few specific reservoir sites.

Whilst there needs to be vigilance and polio eradication activity across all areas of Pakistan, it is Peshawar and surrounding regions of the country that must receive the greatest attention in this low season if polio transmission is to be interrupted.

Throughout history the road that links Peshawar to Jalalabad – through the mountains along the Khyber Pass – has been of great strategic importance. It was a significant trade route along the Silk Road, a critical military corridor in many

conflicts down the ages. The cities, towns and villages along this road and in the surrounding Peshawar Valley – and the transient flows of people that move through them to the border and FATA parts of the country – are at the heart of a great reservoir of the wild polio virus. Once again, in the polio story, it has become a focus of attention around the world – the polio virus' heartland, and a "conveyor belt" of onward transmission.

Although this is one epidemiological block, it spans two sovereign countries. The continued presences of cases in the Peshawar Valley, and on both sides of the Afghanistan-Pakistan border between these two key cities, show a need for intense focus and eradication effort. The fact this disease reservoir sits on two sides of a national border and across different Pakistani administrative regions adds complexity. Large numbers of people cross each day along a porous border with many crossing points. Removing this reservoir requires simultaneous action on both sides of the border. It is not an issue to be solved unilaterally. At the moment the administration and the epidemiology do not match up – they should. A joined up approach will be needed.

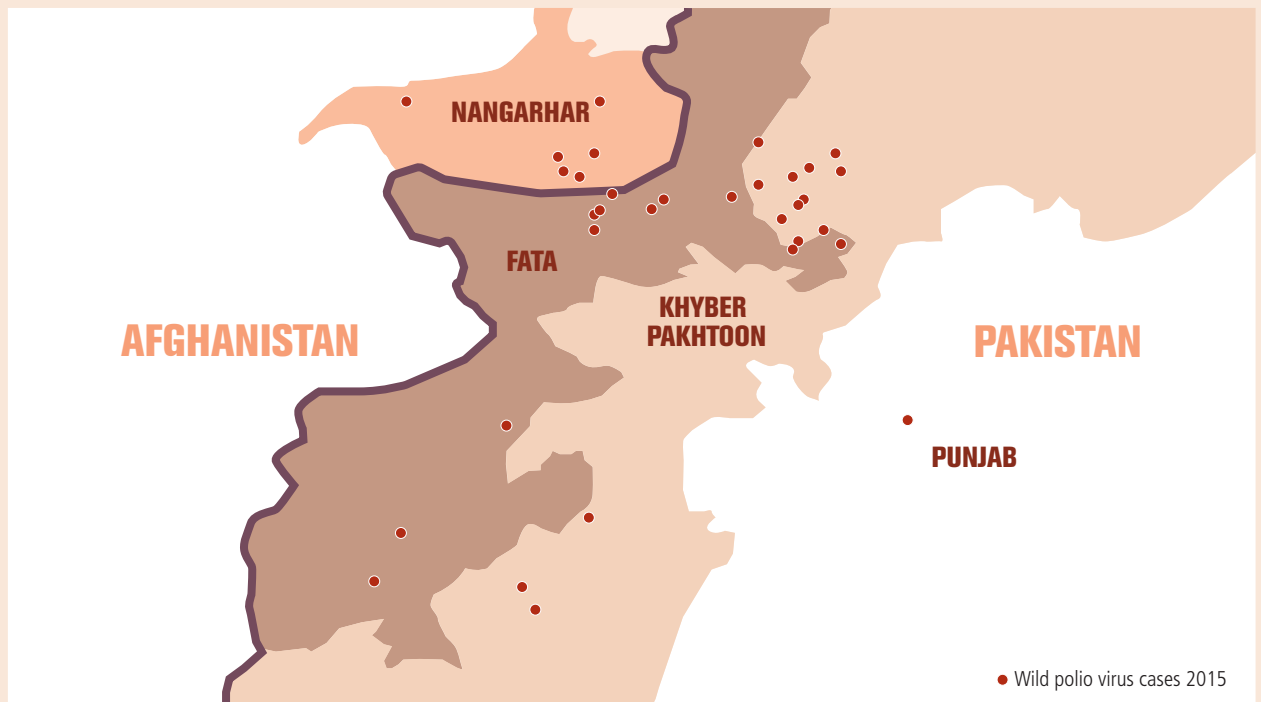
The GPEI needs to urgently work with the Pakistan government to match the epidemiological geography of this part of the country and the planning and coordination arrangements. At present they fall between different jurisdictions. The programme needs to work harder to track down unvaccinated populations in such a mountainous and varied country. It also needs to understand when its processes are imperfect. Understanding, for example, that when "No Team" is given as a reason for missing children, then this is a programmatic failure that must be escalated to the Provincial Secretary level and corrective action taken.

The programme in Pakistan needs to get better at using data. This means focused improvement at each stage of the information cycle: a) more monitoring b) an increased capacity for rapid, sophisticated assessment of data to understand performance, and c) the ability to change rapidly between rounds, and at the local level, on the basis of the new information produced.



## THE IMPORTANCE OF COORDINATION

### ONE EPIDEMIC BLOCK SPREAD OVER 3 ADMINISTRATIVE AREAS



Taken together, the programme in Pakistan has made a series of incremental changes for the better but there are still areas of substantial improvement required. Delivering this improvement is a matter of great urgency. There is only one more low season to get it right before the new 2016 deadline and before the \$1 billion a year consequences of failure are upon the programme. To succeed, there can be no more excuses, no more postponements, and no more distractions. An unremitting focus must be placed on Peshawar and its surrounding territories. It is the key to success and to failure in Pakistan. If polio can be eliminated in this part of Pakistan during the low season then there is an excellent chance that the country will have interrupted transmission during 2016. If the programme comes out of the low season in Peshawar with cases still occurring, then the polio “conveyor belt” will spring into life and there will almost certainly be a substantial outbreak in the high season.

Other areas of Pakistan must also receive robust attention. There is an unnerving comparison with Nigeria. A year before Nigeria interrupted transmission there were fewer reservoirs than in Pakistan. On this basis, Pakistan is not yet on the right trajectory for 2016.

## NIGERIA AND THE REST OF AFRICA

Since the last report of the IMB, Nigeria has been removed from the list of endemic countries. This is a tremendous achievement, both by the Nigerian government that has driven this, and by the international partners who have provided valuable support. However, the situation in Nigeria, with continued gaps in surveillance and immunity, means that the risk of re-introduction is ever present. The level of immunity in India necessary to prevent re-introduction of transmission was well over 90%. This is what Nigeria now has to achieve.

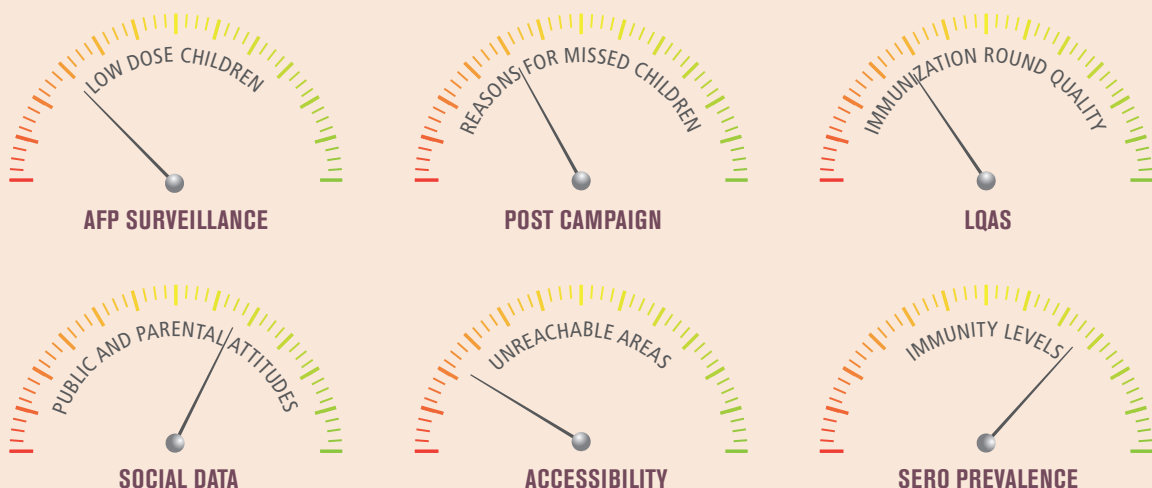
After the celebrations of recent weeks, it is now a time for reorientation of approach and redoubling of efforts. The nature of the task has now changed. Simply stopping transmission is not enough to achieve virus free certification in 2017. Rather than the previous intense focus on eradication, the programme must now move to a mindset of resilience.

Resilience defines a way of thinking and a set of activities that minimize the risk of a resumption of transmission. The skills and resources that are needed to eradicate are not the same as those needed to prevent re-introduction. The programme needs to think about the characteristics of

a resilient organization and transition to this new model. At its heart is a requirement to be constantly vigilant for weaknesses and vulnerabilities, and an ability to spot tell-tale signs that something is wrong. A high resilience organization makes a strong response to a weak signal of failure. Every day, the programme's staff need to get out of bed and keep asking the questions: Where are the holes in our defenses? Where are the chinks in our armour? Where are the places that the polio virus is most likely to return?

At present, the country has the infrastructure built for eradication – and it is well designed and equipped to do that. It now needs to be reshaped to deliver resilience. And to do like India did, and still does, do not give the polio virus even the smallest opportunity to get back into the country. In many cases, this will mean building on the positives already achieved – such as the development of a highly skilled and effective team within the Nigeria Emergency Operations Centre. In some areas, notably surveillance and monitoring, it requires the development of new capabilities, and new approaches to synthesizing the data to look for early indicators of risk. The stated aim of starting sero-surveillance in Borno is an example of a good next step.

### REPRESENTATION OF A POLIO RESILIENCE DASHBOARD



Note: Illustrative, not actual assessment

The Nigeria programme, facilitated by its GPEI partners, should conduct a strategic review to examine the range and quality of data necessary to constantly probe for weaknesses. Certain data not collected or a minor feature of the programme so far may need to be greatly expanded: for example, environmental surveillance and sero-prevalence data. After reviewing data needs, the Nigeria programme should create a Polio Resilience Dashboard. This should be the main driver through which resilience is built.

This transformation into resilient population protection against polio will require continued engagement, political will, and national resolve to switch to a stance of readiness and response. The concept is novel, and may be hard to embed in a system that has been built for a subtly different task.

Political leadership and engagement has been crucial to getting the programme to the point where it is now. As the switch to a resilient mode takes place, it is vital that this high level of engagement is maintained. It is vital that all levels of government, including state and regional remain engaged and do not succumb to “polio fatigue”. The falling level of engagement recorded against agreed measure of local involvement for high-risk states is a cause for concern. Local government becoming detached is a major programme risk. Failure to ensure the flow of funds to do resilience properly would be a disaster.

Access in the north east of the country remains difficult, and 60% of communities were not reached in Borno this year during immunization activities. This leaves a quarter of a million children missed, and low immunity to both type 1 and 2 polio virus. In addition, while the state level surveillance indicators reveal a reassuring sweep of green across the whole country, this is not the case for some sub-state areas – both for acute flaccid paralysis and environmental sampling. Poor performance must not be hidden by aggregation with better performing surrounding areas. The recent positive environmental samples in Kaduna – showing that the virus is still in the country – are an amber warning light.

Communicating the message to the public will also be hard – it is a difficult and nuanced story to tell. It needs to capture that progress has been made but reinforce that Nigeria is not yet a polio resilient country. The programme will need to walk a fine line to strike the right tone. Although it will be tempting, it must not succumb to the urge to be too optimistic. The UNICEF expertise in these areas will be vital to the government.

Across these areas of concern, there are lessons to be learned from elsewhere – not least in India about a) public communication of risk, b) state level response plans (with named individuals responsible), c) annual targeted sero-surveys to provide objective evidence of where immunity may be falling, and d) attention to border regions. These lessons have been learned elsewhere before. Everything possible must be done to allow this learning to be shared.

## CHINKS IN THE ARMOUR OF NIGERIAN RESILIENCE:

- 250,000 missed children in Borno
- Falling political commitment
- AFP surveillance gaps
- Health worker strikes



The question of legacy is particularly pertinent in Nigeria, where many people and structures that have been part of the polio programme could bring future benefits to other areas of public health. It is important that these gains are achieved, but legacy planning must not become a distraction from the main task of remaining polio free until certification.

Achieving this balance of resilience and legacy may require someone to be specifically accountable for the legacy role, rather than requiring teams on the ground to be thinking about this while they continue to do their day job. Legacy, while crucial, could also be a distraction. The overriding message must be of resilience, alertness and responsiveness – legacy must be considered in that context. The IMB makes a recommendation in this regard.

Beyond Nigeria, the vaccine derived polio virus outbreaks in Madagascar and cases in Mali, Sudan and DR Congo are reminders that across Africa in too many areas surveillance is still weak, too many children are being missed, and vaccination levels are inadequate. A polio free Africa is still at risk from the patchy immunity currently observed. Each country needs to ensure they have clear plans in place for a response, and that high quality people think it is their personal responsibility to deliver them. The new leadership in the African regional office of WHO has a vital role in protecting the populations of African countries that remain vulnerable to polio.

## UKRAINE

The situation in the Ukraine is alarming. Two children were paralyzed – one in June 2015 and another in July 2015 – by a vaccine derived polio virus Type 1. This was not confirmed until August 28 2015. More than a month after this, no outbreak response had started.

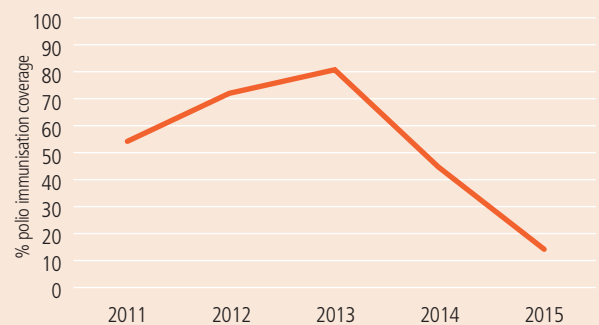
The outbreak of a vaccine-derived virus shows the risk to all nations – including those that are comparatively wealthy and with developed health system – of allowing their vaccine programmes to slide into weakness and disrepair.

In previous reports, the IMB has highlighted Ukraine as a country with poor immunization performance. Many others have warned too – including WHO headquarters, WHO regional office for Europe, and the international academic community. This year in Ukraine, only 14% of under one year olds have had three doses of the polio vaccine. Now the consequence, though by no means inevitable, has come to pass.

We recognize that historical events have led to substantial adverse sentiment towards immunization in general in Ukraine. However, the response by the government has been slow, inefficient and lacking in resources for their childhood vaccination programmes in general, and in this outbreak in particular. There is no excuse for the situation they find themselves in. Fixing the situation requires a different level of engagement by the government and urgent action.

The availability of numerous communication channels, including social media, means that the programme could mount a creative and engaging communication and advocacy campaign to tackle the vaccine hesitancy, which seems to have only been dealt with half-heartedly.

### UKRAINE: A CATASTROPHE IN THE MAKING



The IMB understands that security and access problems have an impact on polio campaigns, and the complexity of the current security situation in the Ukraine. However, these cases are not in conflict-affected areas. Instead, they are as far from the conflict as they can be within the country, and close to the border with Romania. In fact, in Zakarpattia Oblast where the cases were found, immunization levels are higher than the national average (at a meager 18%). Several parts of the country affected by conflict are a “black box” when it comes to reporting. We can only hope that the same situation is not being repeated there.

To further complicate the delayed response, the proposed action does not adhere to well established international scientific standards and is not using the schedule recommend by WHO. As such, not only does Ukraine present a risk to itself and its children, but it also presents a clear risk to their neighbours, to the European Union countries, and threatens its international credibility.

## SYRIA AND OTHER COUNTRIES IN THE MIDDLE EAST

Not long ago, most of the Middle East had strong and effective polio vaccination systems. Coverage was high and risk was low. However, in light of recent conflicts, the situation on the ground has changed for many. In several countries, much infrastructure has been destroyed, many expert staff are gone, and public health systems have been badly degraded.

The outbreak of wild polio cases across Syria and Iraq in 2013 and 2014 was a sad but predictable consequence. The work of the GPEI led outbreak response team based at the WHO Eastern Mediterranean Regional Office was effective, taking the necessary steps to bring this under control, with improved surveillance and immunization activity across those countries where security has been compromised – in particular Syria, Iraq, Somalia, Yemen and Libya. Their efforts here are commendable.

The consequent flow of displaced people – as a direct result of this regional insecurity – from these countries into their more stable neighbours presents a different problem

that requires its own focus. These great movements of people, while a terrible tragedy in their own right, present a profound risk to the polio programme.

Targeted immunization activities are actively taking place at many border crossings, and at the camps created for displaced people. While these camps represent a clear target population for such activity, the IMB is aware that many refugees across the Middle East are not staying within the official structures designed to accommodate them, but are living unofficially in communities, trying to create new lives for themselves. Often afraid of their legal status, and averse to interacting with the official structures of the state, these people are at risk of not receiving the immunizations they need. IMB sources suggest that this is a problem that is not currently being managed effectively. And it seems possible, or even likely, that many “zero-dose” families are amongst these hidden populations.

The risks here are hard to quantify given the lack of information about the number of people in different settings



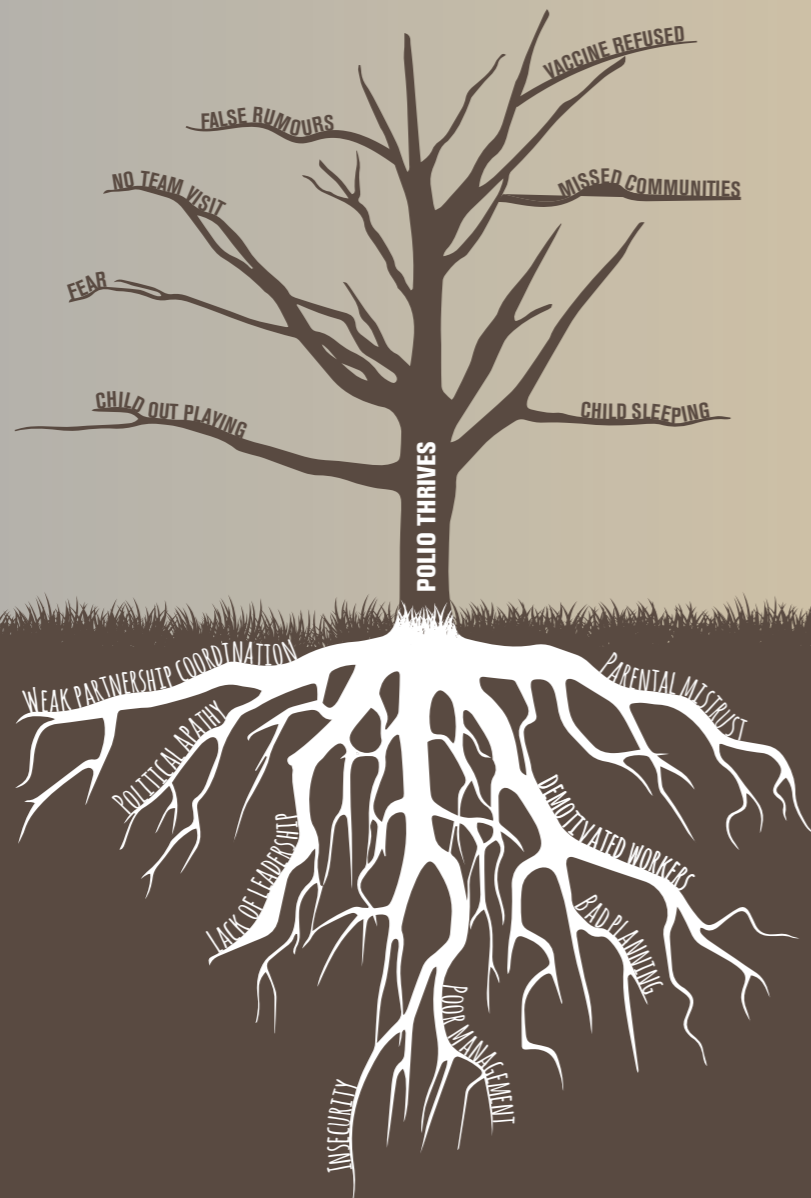
and their immunity levels – but they are a risk and more should be done to estimate its size. Given the high numbers of refugees – perhaps three million across Turkey, Lebanon and Jordan – there is a need for risk assessment and action. Efforts must be taken to publicize the need for immunization – and to make it an activity that is free from bureaucratic consequence. If a child is presented for immunization – there should be no need to investigate their identity.

In addition, new migration routes are opening and constantly changing as large numbers of refugees seek a safe haven in Europe. Many of these routes are passing through states in the Balkans and Eastern Europe where immunity levels are not always where they should be. The current outbreak and mismanagement in the Ukraine – which is potentially on migratory routes due to its borders with European Union nations – demonstrates the potentially explosive risk of imported cases and ill-prepared nations. At a time when the GPEI was closing in on the remaining polio endemic countries, the risks outside these countries have magnified greatly. These risks come from degraded health systems in conflict areas, from mass movements of vulnerable people across large distances with inadequate sanitation and poor nutrition, and from a fear on the part of hundreds of thousands of migrants that seeking health services could lead to the official registration that they are desperate to avoid.

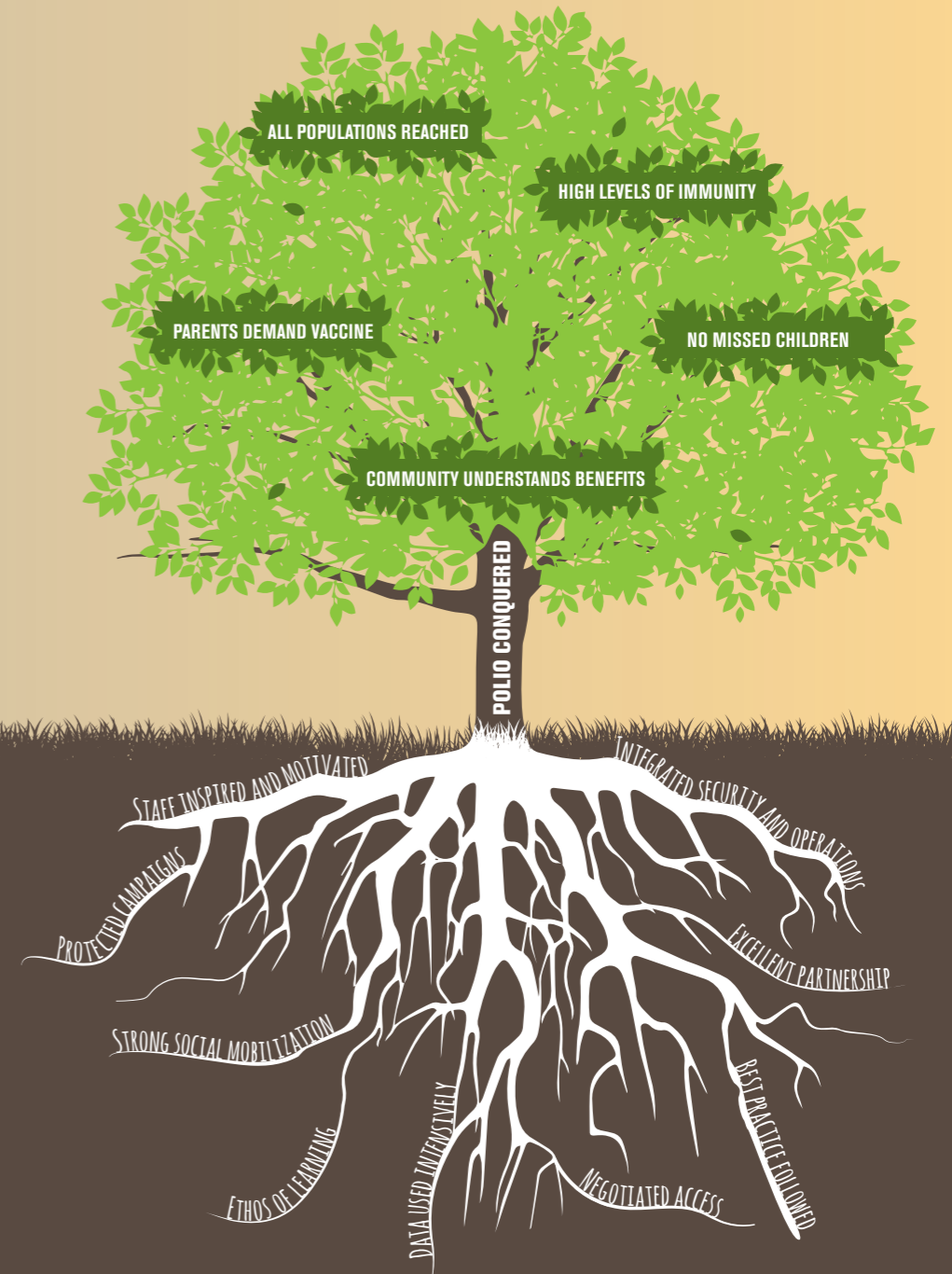
Finally, while the security situation in Syria and Iraq continues to obtain the most coverage around the world, the situation in other countries remains high risk. In particular, IMB sources report the failure of the cold chain system in Yemen due to continued fighting, and the near complete collapse of immunization systems across Libya. These areas will require substantial support to return to basic minimum standards.

# PERSISTENTLY MISSED CHILDREN

## TREE OF DESPAIR



## TREE OF HOPE





The IMB has championed the use of the number and causes of missed children to drive programme performance. This metric is now widely used to ensure accountability in the programme at all levels. However, the continuing high numbers of children who have been persistently missed damage the credibility of the programme and its leaders at global and country level. There is no getting away from the embarrassment to an eradication programme that tolerates 6.6 million persistently missed children.

Despite these still worrying numbers, the clarity of thinking about missed children as part of the programme has improved. The taxonomy that is now commonly used is simple, but also revealing. There are only four key reasons why a child might not be covered: 1) the child could not be reached because they were in an inaccessible area, 2) the child was accessible, but the vaccination team for some reason did not get to them, 3) the vaccination team arrived, but the parents refused access, and 4) that the vaccination team arrived and the child was not there.

Within these four separate categories, there is a huge amount of depth, complexity and anthropological understanding to be had, to understand the root cause. For example, those missed children where the team never even showed up – often reduced to the derogatory shorthand of “No Team” – implies a failure somewhere within the matrix of microplanning, management, supervision, recruitment and motivation. For refusals, there may be an understandable reason such as an ill child, but in some cases it is that the parent does not understand the benefits of the vaccine either the programme’s messaging failed or a false rumour was somehow more compelling and seemed credible because there was no obvious rebuttal.

Trust in vaccinators is a crucial issue. Vaccination campaigns will only be successful if the message to vaccinate is well received, and if the vaccinators themselves can be trusted. The most recent polling data shows that this varies substantially even within country – in Pakistan, the level of trust in vaccinators in FATA (26%) and in North Waziristan (34%), is substantially below the national level of 61%. Similarly, the figure of 48% in Borno is worrying when seen

alongside the national average in Nigeria (70%). The fact that only 40% of people surveyed in Afghanistan trust their vaccinators a great deal should be a source of great concern.

In addition, there is a need to develop effective approaches to the necessary convergence between routine immunization, supplementary immunization activity and IPV introduction in order to stop and then prevent transmission. This will require study of the best ways to deploy these mixed approaches to reach those missed children in particular pockets of low coverage, and will be a vital part of first resilience and then legacy.

In order to properly answer the question of why children are missed requires looking deeply into the context. The techniques to sequentially ask why?, why? and why? again will have to be a mix of the different expert disciplines. The quantitative effort of epidemiology will need to be linked to the qualitative skills of the social scientists, taking information from as many sources as possible until potential solutions can be identified and acted on. The availability of these data, with strong methodologies and through independent institutions, is an asset to the programme. As the wild virus is progressively pinned down into limited geographical areas, the need for good quality, local qualitative understanding of programme performance and public attitudes is stronger than ever. Data like these are like gold but they are not just an interesting talking point. They must be used to target activity to reach and successfully immunize more and more children.

The best examples of the use of social data are often the simplest. In Pakistan, changing the gender of vaccinators and altering work schedule to become full-time – and consequently improving their job security – enabled a jump up in levels of performance. A seemingly small modification but one which demonstrated the value of exploring what (in a different context), the British epidemiologist, Geoffrey Rose called: “The causes of the causes”, or, put more simply, to keep asking why?

## VACCINE DERIVED STRAINS

Compared to their wild cousins, vaccine derived virus can seem less of a threat, an unpleasant afterthought, but one that is eminently controllable. This is far from the case. In these later stages of the eradication effort, the occurrence of any polio virus is a threat. The recent steady stream of outbreaks and cases – so far in this year alone in Nigeria, Ukraine, Madagascar, Lao PDR and Guinea – demonstrates a persistent, unpredictable and often poorly managed threat.

Whenever these cases occur, highly competent teams should be deployed to manage and contain the outbreak. As local institutional memory and experience in management may be lacking, this should include top performing staff from partner programmes, as well locally accountable officials.

The International Health Regulations (IHR) have been a helpful addition to the various measures used to combat wild polio virus in the last two years. The rules do not allow the IHR to be applied to vaccine-derived polio virus. This is anachronistic as the appearance of these viruses is equally a public health emergency. This is particularly so in Ukraine, and the threat that it poses to neighbours. Also, of great relevance is the imminent switch of oral polio vaccines (which SAGE has recently confirmed will go ahead in April 2016); in these months leading up to the switch and after it, any outbreak of cVDPV2 needs a rapid, decisive response and is truly an event of international relevance, because the very vaccine that stops transmission will be withdrawn in April 2016.

## THE CHALLENGE OF MAINTAINING FOCUS WITH INCREASING PROGRAMME COMPLEXITY

The IMB was created to support the first objective of the GPEI – interruption of transmission of the virus leading to eradication. Over time, the IMB has also chosen to comment on a number of other issues – including planning for the legacy of the skills, momentum and infrastructure of the programme, preparation for oral vaccine switches in a coordinated way around the world and the introduction of IPV in many countries. While delivering each these tasks is of vital importance in its own right – getting the correct balance between emphases on these various objectives is vital. For those countries that are still in an eradication mode, or for those switching to a resilience approach, these additional tasks run the risk of creating distraction and diverting skills and resources from where they are most needed. For both endemic countries, and for Nigeria, sufficient space must be given to the delivery teams to allow focus. This may require the creation of specific legacy posts and structures, in addition to and not instead of those roles focusing directly on eradication.

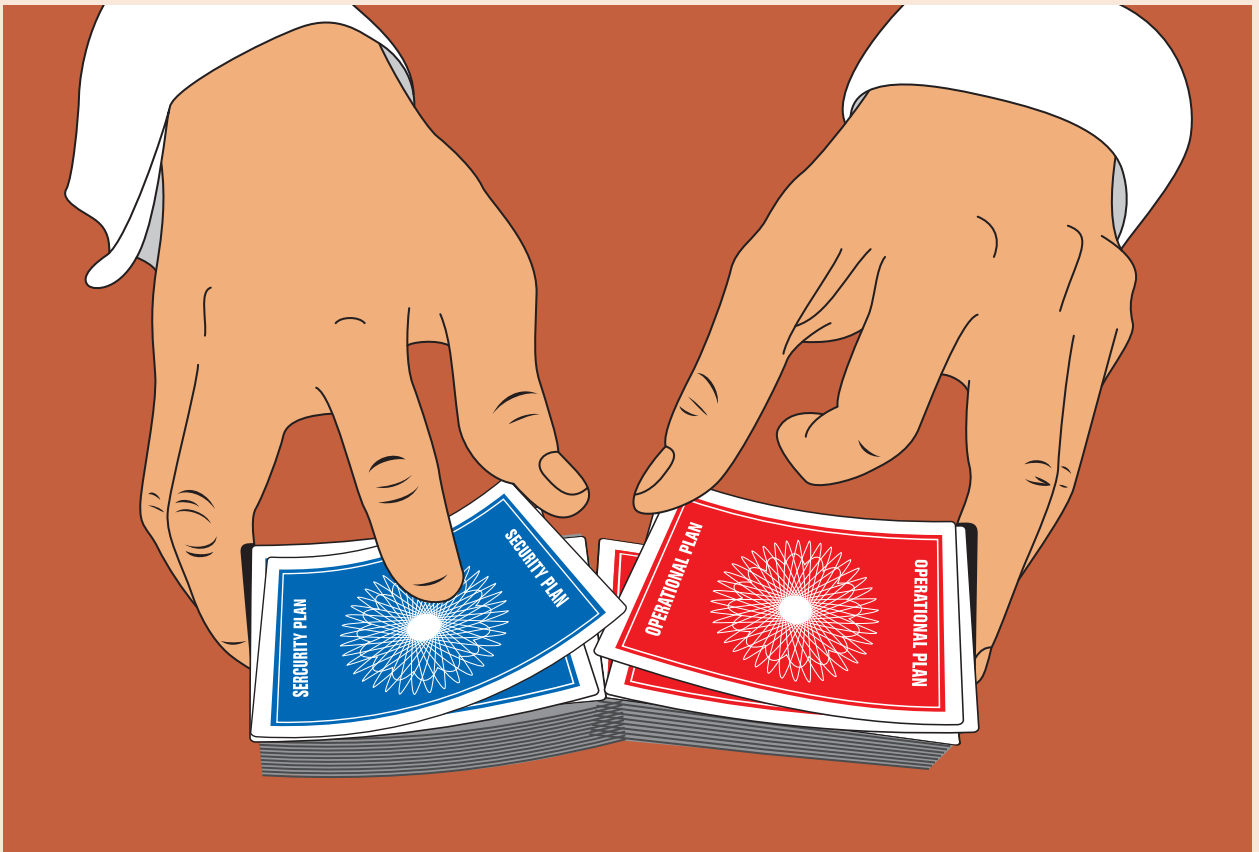
What must be core business for stopping transmission and strengthening resilience in some areas will also appear as elements of the “legacy” work after eradication. The difference is planning for now and planning for the future – not what is core business or not. For the part of GPEI that works on legacy, that is indeed its core business, but it should not operate in a vacuum from those working on objective one of the strategic plan.

## SECURITY

A common theme running through each of the remaining areas of high concern for the programme is security – and gaining access to children who might potentially be missed in insecure regions. In Afghanistan, in particular, where temporary access bans in the southern provinces have been a cause of significant disruption, the situation may only get worse with the fragmentation of opposition groups.

The IMB has only the highest respect for the workers operating in these difficult conditions, and recognizes the expertise, bravery and commitment of those who work to secure access. Managing security is also an area where the programme has made substantial advances, notably in the substantial reduction in inaccessible children in Pakistan. However, there is still more that can be done to make the most of each available window of opportunity.

Cooperation with security services must be seen as a priority, and further work to improve the levels of joint working with these services must be made routine. Every time access to an insecure area is possible, it must be used to its maximum potential with a developed integrated plan incorporating both the vaccination team and the relevant local and district security apparatus.



## CONCLUSIONS

The decision of the Polio Oversight Board to plan for interruption of transmission in 2016 presents a renewed sense of urgency for the programme. This bold target is possible, but requires an improvement from current performance. Nigeria must adapt and keep focus, Pakistan must continue and improve further, and Afghanistan must make a step change from where it is now.

Nigeria should be congratulated. However the move from an eradication mindset to one of resilience requires a subtle but substantial cultural shift. The existing infrastructure and apparatus of eradication will have to be retuned for the task of vigilance and response. The current gaps in surveillance and immunity need to be closed, and existing data streams need to be integrated to create a sophisticated awareness of activity and potential weakness. Local government must remain engaged, communications with the public must strike the right tone, and lessons should be learned from India. Nigeria is currently a polio-free country but not yet a polio-resilient country.

The Pakistan programme is now performing better than before, and the reduced numbers of cases compared to last year tell their own story. However, polio is still quite widespread in Pakistan. The tenacious reservoir of virus around Peshawar presents a huge risk, threatening to continue to act as a conveyor belt for the epidemic, shifting it out to other parts of the country. Improvements in supplementary immunization activity quality are needed in many places, as are the skills in data analysis and use to allow the programme to become more nimble and responsive. The next few months prior to the final low season will be crucial. If momentum cannot be maintained and further improvements made, the risk of a new outbreak in the high season remains real.

Afghanistan's programme is not working well enough. It risks being the weak link in the drive for interruption of transmission in 2016. The government needs to clarify roles, responsibilities and accountabilities within the complex structure that has developed. The international partners



also need to improve their collaborative working. The rapid development of a working Emergency Operations Centre, so long delayed, must be an absolute requirement. As the security situation remains uncertain, every possible opportunity to reach inaccessible children must be taken.

In both Afghanistan and Pakistan, the geography of administration fails to match up with the geography of the virus. Collaborative working, across regional and national borders, will be required – and the new structures and relationships needed to allow this must be developed quickly.

Beyond the endemic countries, the programme must retain a sense of urgency with vaccine-derived outbreaks. The recent events in Ukraine and Madagascar, so soon after last year's outbreak in the horn of Africa, are concerning – and in particular for their lacklustre response by governments. The migrant crisis in the Middle East, now reaching into Europe, presents new and currently uncertain risks that will need to be both measured and mitigated. The outbreak in the Ukraine – a wealthy country – is a reminder of the potential of letting a nation's vaccination programme fall into a state of disrepair. The inevitability of the situation that occurred is made more frustrating by the repeated warnings beforehand.

The thematic problems across the programme remain frustratingly consistent. Missed children must still be at the top of the agenda. An irrepressible curiosity is needed to get right down to the roots of the problems of why they are not reached. This curiosity to understand, and then a flexible approach to change and improve from this learning, must be part of the job of everyone at every level of the programme.

Discussions of legacy, while important and time-critical, have the risk of distraction in those areas that are focused on eradication. A balance must be found, and space must be created to allow eradicators to eradicate, free from broader concerns.



As the finishing line draws tantalizingly nearer, the potential cost of any mistake is magnified. The programme must mobilise every ounce of skill, capacity, imagination and energy to meet the challenging goal that has been set. Any misalignment or inefficient use of resources, any acceptance of substandard performance, any lapse of leadership attention or organizational concentration could set the programme back a year. Aside from the terrible cost of this in human terms, the price tag attached to it would be \$1 billion.

## RECOMMENDATIONS

### PAKISTAN AND AFGHANISTAN

- 1** All partners in the GPEI, and the Afghanistan government, should work with the greatest possible urgency to establish an Emergency Operations Centre in Afghanistan that has a level of functionality equivalent to the comparable Centre that has been transformational in Nigeria.
- 2** Non-Governmental Organisations that contribute to polio eradication in Afghanistan should be full members of the new Emergency Operations Centre.
- 3** The GPEI partners and the government of Afghanistan should rapidly review and redesign leadership, accountability and coordination arrangements for the polio programme in the country to establish a new sense of direction.
- 4** The GPEI partners should help the governments of Pakistan and Afghanistan to establish a joint executive and planning body to instigate cross-border polio prevention and control; this should not only address the border crossings but take account of the need to cover communities at some distance from the border itself. One option would be to set up a joint governmental Emergency Operations Centre but leaders of the programme must ensure that the organizational model is much superior to the ineffectual arrangements of the past.
- 5** The GPEI and the government of Pakistan should give top priority to stopping polio transmission in Peshawar and surrounding regions. This should include urgently addressing the mismatch between the “epidemiological” geography of polio and the “planning and coordination” geography in this part of the country. Serious consideration should be given to reconfiguring the regional Emergency Operations Centre arrangements to address this. Support to these regions should include expert technical assistance in managing and using data at the local level; the GPEI senior leadership should help to design the essential data flow.
- 6** The CDC should conduct an urgent special review of the pattern and genetic features of the positive environmental samples in different geographical areas of Pakistan. The primary aim of the review should be to identify possible pockets of population that may have been missed in previous micro-planning. It is essential that this work is completed in time to be able to inform the current low season vaccination rounds.
- 7** The most senior members of the GPEI should work with the leaders of the polio programmes in Pakistan and Afghanistan to plan a precisely targeted series of campaigns of IPV alongside OPV. The IMB has repeatedly stressed the immunity benefits of this but it is essential, given limited vaccine supply, that it is used to prioritise, through microplanning and microcensuses, hard-to-reach and persistently missed children.

## NIGERIA

- 8 The GPEI leadership should work with the Emergency Operations Centre in Nigeria to strategically review the range and adequacy of data streams to monitor the country's resilience to polio transmission becoming reintroduced. From this, a Polio Resilience Dashboard should be constructed that would become the main vehicle for directing vaccination strategy.
- 9 A new Director of Polio Legacy should be appointed to lead legacy planning in Nigeria and to ensure that programme staff and leaders are not distracted from the task of building resilience to keep the country and the rest of Africa free of polio until official certification.
- 10 The GPEI should conduct a new social mobilization and communication campaign to raise awareness amongst parents and health professionals that polio vaccination is still necessary to protect children from the disease.

## UKRAINE

- 11 The government of Ukraine should ask the GPEI to assist it by establishing an independent international panel to advise on dealing with its polio situation and also to assist with investigating cases of alleged adverse reactions to polio vaccine, an issue that has damaged past public confidence in vaccination. The panel would also be a credible source of public information untainted by vested interests.
- 12 The International Health Regulations Review Committee should be asked to declare the situation in Ukraine a public health emergency. It is strongly recommended that the rules be changed to allow vaccine-derived polio viruses, to fall within the scope of the regulations.

## REFUGEE AND MIGRANT COMMUNITIES

- 13 The GPEI, working through the WHO EMRO and EURO offices, should conduct a more detailed risk assessment around polio immunity in migrant and refugee communities from conflict in the Middle East – including those not housed within formal structures. Further supplementary immunization activities should be considered in Jordan, Lebanon, and Turkey and on migratory routes into Europe, depending on their findings.
- 14 Middle Eastern countries with refugees from Syria should advertise free vaccination for children without the need for official registration or identity checks.

## PROGRAMME-WIDE POLICY AND ACTION

- 15 The GPEI should introduce, as a matter of policy, a "Golden Rule" that in all security compromised areas a single integrated plan (incorporating both programmatic and security elements) should be produced before every vaccine round or other polio-related activity in an area. This would have the purpose of tightly coordinating security arrangements with planned polio technical activity. It would be agreed by all parties and communicated to all teams.
- 16 The GPEI should deploy its most skilled leadership to organize the response to outbreaks of vaccine derived polio virus in countries other than the Ukraine (where a special initiative is recommended). Currently, these countries are: Madagascar, Lao PDR, Guinea, and South Sudan.

