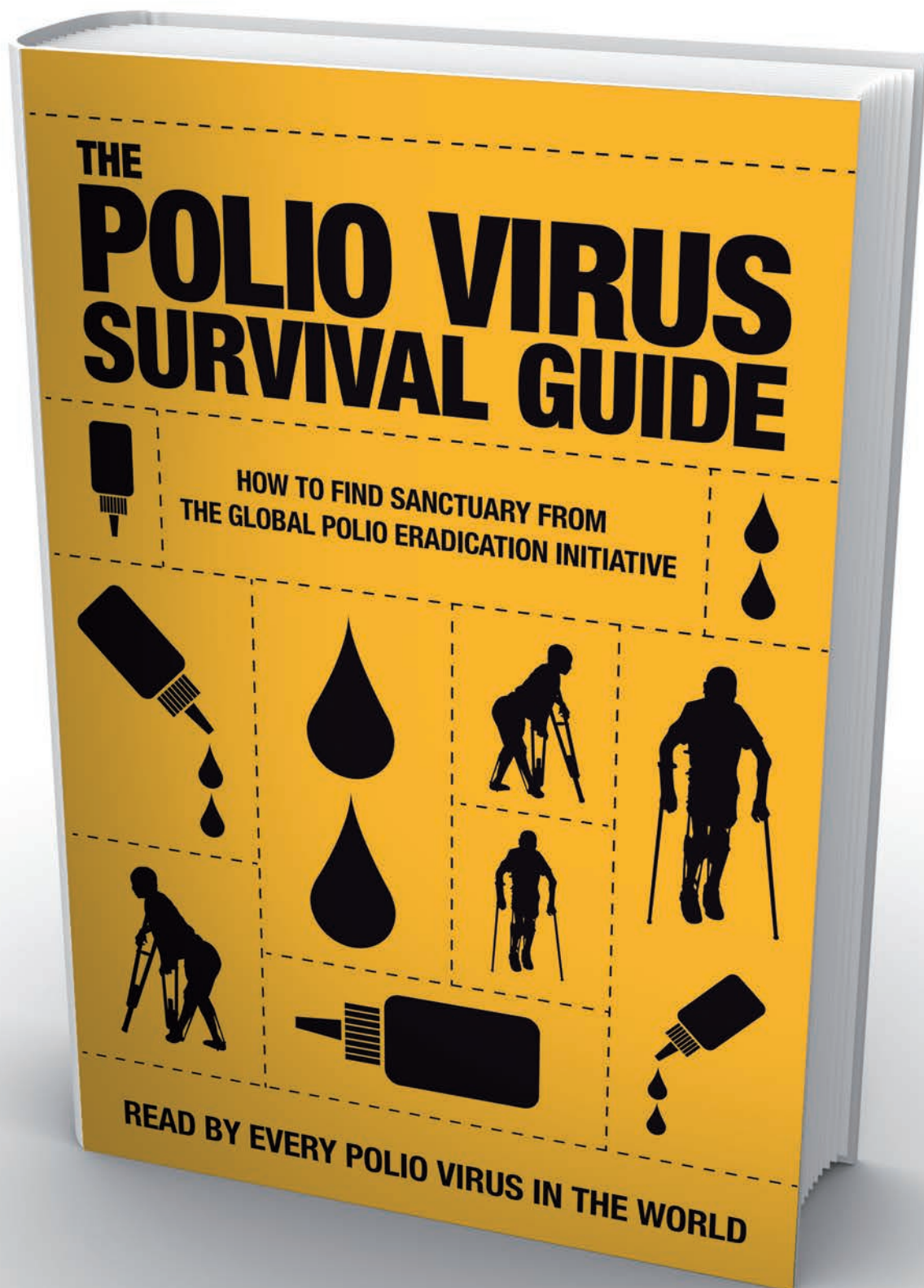


Polio's **Last** Stand?

Report of the **Independent
Monitoring Board** of the
Global Polio Eradication Initiative

November 2012



ALL A VIRUS NEEDS TO SURVIVE IN 2013

INCLUDING SUCH ESSENTIALS AS
POLITICAL MISALIGNMENT • LOW PARENTAL DEMAND • WEAK LOCAL LEADERSHIP
DISENGAGED TRADITIONAL AND RELIGIOUS LEADERS • FLAWED MICRO-PLANS • HIGH REFUSALS
UNDERSERVED NOMADS AND MIGRANTS • CORRUPTION • BIASED MONITORING
INADEQUATE SOCIAL MOBILISATION • WEAK AFP SURVEILLANCE • UNDER-FINANCED PROGRAMMES

INDEPENDENT MONITORING BOARD OF THE GLOBAL POLIO ERADICATION INITIATIVE

November 2012

The Independent Monitoring Board (IMB) was convened at the request of the World Health Assembly to monitor and guide the progress of the Global Polio Eradication Initiative's 2010-12 Strategic Plan. This plan aimed to interrupt polio transmission globally by the end of this year.

This sixth report follows our seventh meeting, held in London from 29 to 31 October 2012.

Our absolute independence remains critical. We have benefited from many engaged discussions with representatives of the Programme and other interested parties. As ever, we are grateful to them. The views presented in this report are entirely our own.

Sir Liam Donaldson (Chair)

Former Chief Medical Officer, England

Professor Michael Toole

Head, Centre for International Health, Burnet Institute, Melbourne

Dr Nasr El Sayed

Assistant Minister of Health, Egypt

Dr Ciro de Quadros

Executive Vice President, Sabin Vaccine Institute

Dr Jeffrey Koplan

Vice President for Global Health, Director, Emory Global Health Institute

Dr Sigrun Mogedal

Special Advisor, Norwegian Knowledge Centre for the Health Services

Professor Ruth Nduati

Chairperson, Department of Paediatrics and Child Health, University of Nairobi

Dr Arvind Singhal*

Marston Endowed Professor of Communication, University of Texas at El Paso

Secretariat: Dr Paul Rutter, Mr Niall Fry

*Dr Singhal was unable to participate in the meeting, but endorses this report

The IMB's reports are entirely independent. No drafts are shared with the Programme prior to finalization. Although many of the data are derived from the GPEI, the IMB develops its own analyses and presentations (in this report we are grateful to Dr Robert Merrifield for help with some analyses). The work on the design of the report is carried out by the IMB Secretariat and Chairman, supported by 22 Design, an agency based in London, United Kingdom.

CONTENTS

Executive summary	5
Polio's last stand?	10
Cases & milestones	14
Countries & sanctuaries	19
Global view	36
Conclusions & recommendations	47

EXECUTIVE SUMMARY

1. When the Independent Monitoring Board (IMB) issued its first report early in April 2011:
 - 99% of polio had been eradicated a decade previously but 1% had remained since then.
 - Four countries had 'endemic' disease: India, Pakistan, Nigeria and Afghanistan.
 - Three countries that had previously been free of disease had 're-established transmission' for more than six months: Angola, Chad and the Democratic Republic of Congo.
 - There had been 14 outbreaks in other countries since the start of 2010.
2. In its series of meetings and reports, the IMB has challenged affected countries and those leading the Global Polio Eradication Initiative (we use the term 'the Programme' for the sum total of these people and activities) to look critically at performance and improve it. The IMB has pushed the Programme to broaden its thinking and approach to embrace more strongly the 'people factors' that are critical to this endeavour. Traditionally, the Programme's strengths have lain with technical and epidemiological disease control interventions and activities. The IMB has raised questions, directed attention and recommended action in areas such as:
 - Are the right people in the right jobs?
 - Is there political commitment and alignment from national to regional to local level?
 - Are governmental leaders working effectively with traditional and religious leaders?
 - Is the management of local vaccination days achieving a consistent standard of best practice?
 - Are front-line vaccinators properly trained and valued?
 - Is the Programme receiving the level of priority attention needed for success?
 - Is everybody focusing on why vaccination days repeatedly miss the same children, and on what can be done about it?
 - What can be done to eliminate refusals and increase community demand?
 - Does the Programme think and act too much in isolation, missing opportunities for strong and effective alliances?
3. The IMB has been pleased that the Programme has responded positively to our guidance. We have seen its leadership reflect, learn, change its emphasis, and increase its urgency.

4. As we issue this, our sixth report:

- All but 0.1% of polio has been eradicated globally: there were 350,000 cases in 1988; there have been just 175 so far in 2012.
- Polio is more tightly confined than ever before – affecting just 94 districts in four countries so far this year.
- The Programme is enjoying an unprecedented level of priority and commitment, much of it stemming from the World Health Assembly's declaration of polio eradication as an emergency for global public health.

5. The IMB was established to monitor the Programme's 2010-12 Strategic Plan. This aimed to stop global polio transmission by the end of 2012. The Programme will now clearly not achieve this goal.

6. Despite it missing yet another deadline, the IMB judges the Programme's prospects to be more positive than ever. If this level of progress had been achieved at the start, not the end, of the 2010-12 period, transmission could have been stopped by now.

7. History shows how cruel polio can be – that it resurges more easily than it is contained. There is a significant risk of having more polio cases in 2013 than in 2012, and in more countries. The Programme must receive a level of priority to not just mitigate this risk, but to achieve another year of major progress towards stopping transmission.

8. The challenge ahead is huge for each of the four countries where polio transmission persists:

- Nigeria is the only country to have had more polio transmission this year than last. There is finally some evidence that more children are being vaccinated. With its personnel surge and well-constructed plan, the Nigerian Programme may be on the brink of a breakthrough. Over the next six months, the world will be watching. If case numbers are not reduced, spread to other countries is all but inevitable. The fate of polio in Nigeria – and therefore Africa – now lies in the hands of the Nigerian Programme – from President to vaccinator. The Local Government Area Chairmen and Traditional Leaders of the north are crucial in leading this mission. The Programme needs to do everything possible to encourage and support them.
- Pakistan's chances of stopping polio have been transformed over the last year. Its Programme reorientated and case numbers plummeted in 2012 as a result. But an election looms, which could distract government at every level and allow the virus to resurge. This, and a complex security situation, are the major risks in Pakistan in 2013.
- Afghanistan has surely, but too slowly, made progress over the last two years. Its slow pace of improvement is worrying, particularly because the country's security landscape faces uncertainty as international troops withdraw.
- Chad has rebuilt its Polio Programme over the last year, suffering just five cases so far in 2012. It now needs to build on its turnaround, to create a programme that can see every last bit of polio virus gone from the country.

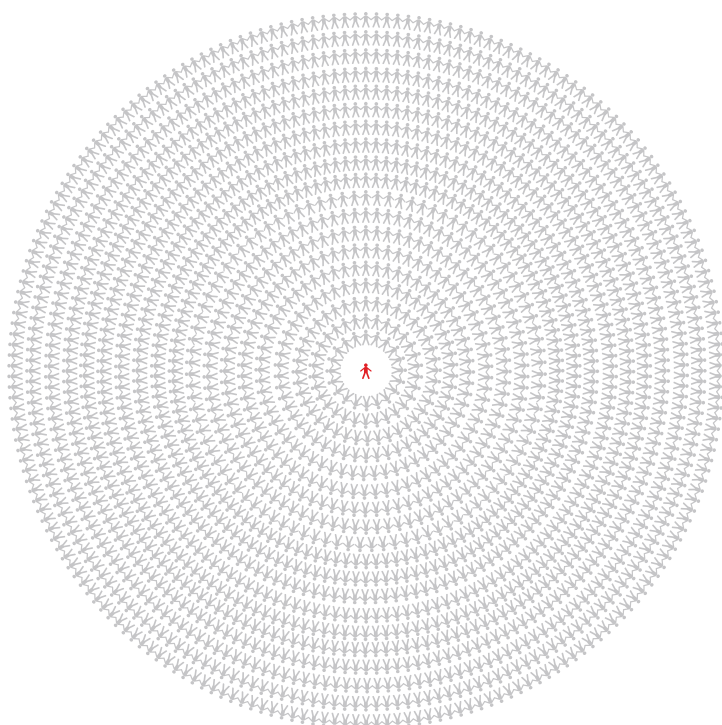
9. Each country will stop polio transmission if its leaders, at every level, take to heart the mission to protect their country's children from being blighted by polio. The word 'ownership' encapsulates what is required. The Indian Government and the Indian people truly 'own' the task of protecting children and families from the scourge of polio. India did not want its image as a modern, vibrant, successful nation to be tarnished by harboring a virus that has been vanquished in most countries of the world. India seized 'ownership' of the polio eradication effort and as a direct consequence has interrupted transmission for the first time in its history.

10. We make ten recommendations to the Global Programme:

- Every time a child or adult travels abroad from Afghanistan, Nigeria or Pakistan, they risk carrying the polio virus with them. We recommend that the International Health Regulations Expert Review Committee urgently issue a standing recommendation by May 2013 that will introduce pre-travel vaccination or vaccination checks in each of these countries until national transmission is stopped. No country should allow a citizen from any endemic polio state to cross their border without a valid vaccination certificate.
- The low season over the next six months is a crucial time. Each of the four affected countries has many actions planned, amongst which the priorities could get lost. Countries that have successfully stopped transmission offer vital lessons about what these priorities should be. We recommend that each affected country rapidly considers its plan, and best practice elsewhere, to set out a list of no more than five priority goals that they absolutely commit to achieve by the end of April 2013, and maintains the focus and pace necessary to do so.
- When the same children are missed by one vaccination campaign after another, frequent campaigns may not be the best way to stop polio transmission. We recommend that an analysis be urgently commissioned to examine the relationship between the frequency and quality of vaccination campaigns, to guide programmatic decisions about the optimum interval between campaigns.
- Mothers and fathers are critical to the Programme's success, but do not have a voice within it. We recommend that every endemic country district-level task force (or equivalent) should be constituted to include a parent, representing parents of the district.
- Too many communities see polio vaccination as an imposition with no benefit. We recommend that every opportunity be taken to 'pair' other health and neighbourhood benefits with the polio vaccine.
- The Programme cannot afford for vaccine supply issues to dictate when campaigns can and cannot be held. The IMB requests a report on vaccine supply at each of its future meetings.

- Capturing the learning, both positive and negative, from polio eradication for future public health programmes is essential. It is an important and distinct part of the legacy of the Polio Programme. This learning needs to be rigorous and comprehensive, needs to involve other partners in immunisation, and it needs to start now. We recommend that the Programme accelerate planning to set out how the learning from polio eradication can be captured and disseminated as part of the strategic legacy plan, overseen and funded with minimal distraction to current work.
 - It would be dangerous to assume that polio will remain confined to four countries. Population movement and poor immunity leave a great number of other nations and areas at risk of importation, particularly Yemen, Libya, the Horn of Africa, Somalia, Ukraine, Uganda and Kenya. We recommend that an intensive 'Polio Watch' be established in the countries at highest risk of a polio outbreak. We further recommend that the responsible WHO Regional Offices should issue within the next month an action plan for strengthening vaccination coverage and surveillance in these areas.
 - In India, maintaining the hard-earned polio-free status is crucial. We recommend that India plans for a simulation exercise to test the readiness of its emergency response plans. We recommend that the exercise should begin, on an unannounced date in mid-2013, by selecting a sample of districts at random and carrying out real-time simulation-based scrutiny of their emergency response capability.
 - An Emergency Operations Centre is being established in Nigeria. We recommend that a continual live audiovisual feed should be broadcast online from here, with a facility for the world's polio experts and the IMB to observe and provide input at any time.
11. The Programme ends 2012 in a complex position: deadline missed, but strong progress made. What happens next? The Programme is developing a strategic plan. Aspirations are no longer good enough – this needs to be a rigorous manifesto for success. Asking for a US\$5.5 billion investment, it needs to robustly address the question: why can this Programme now achieve what it has so far failed to deliver? The body of this report sets out the strategic areas that need thorough development. These include ensuring clarity and realism about how the Programme relates to routine immunisation, and making sure that the mission of eradication is truly led by the countries where polio persists.
 12. As 2012 draws to a close, the IMB congratulates those who have made the year a success for the Polio Programme. We also pay great tribute to the memory of those who have tragically lost their lives in the pursuit of polio eradication.
 13. The Programme has never been in a stronger position, but how history looks back on 2012 will depend what happens next. The remaining polio virus now sits on just 0.2% of the Earth's land mass. Are we seeing its last stand? Only a fool would say this for certain. The virus has fought back and outwitted the Programme many times. Its survival guide is well-established – weak leadership, poor parental engagement, flawed microplans, under-financing. The time is momentous for public health history. A final concerted effort could indeed mean writing the story of polio's last stand.

Figure 1. Polio's last stand?



♀ = 350,000 cases in 1988 ♂ = 175 cases in 2012 (year to date)



Polio's last stand?

Figure 2. Measuring success: pressure drives polio virus families towards extinction

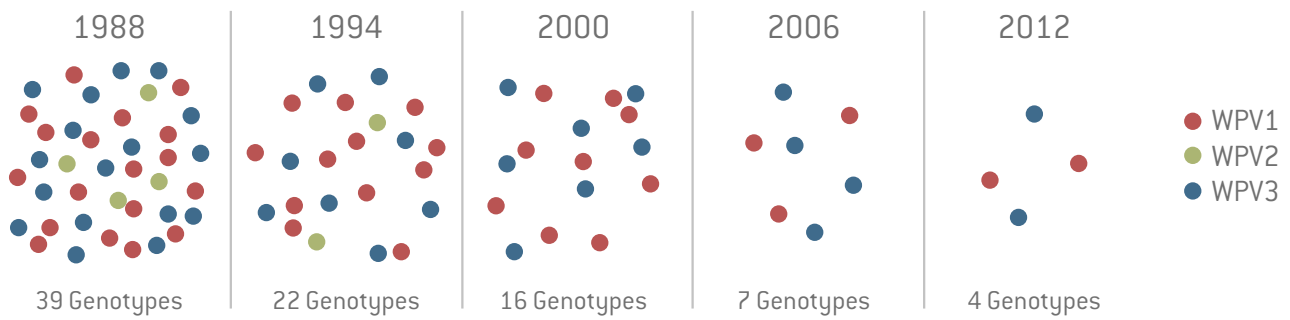
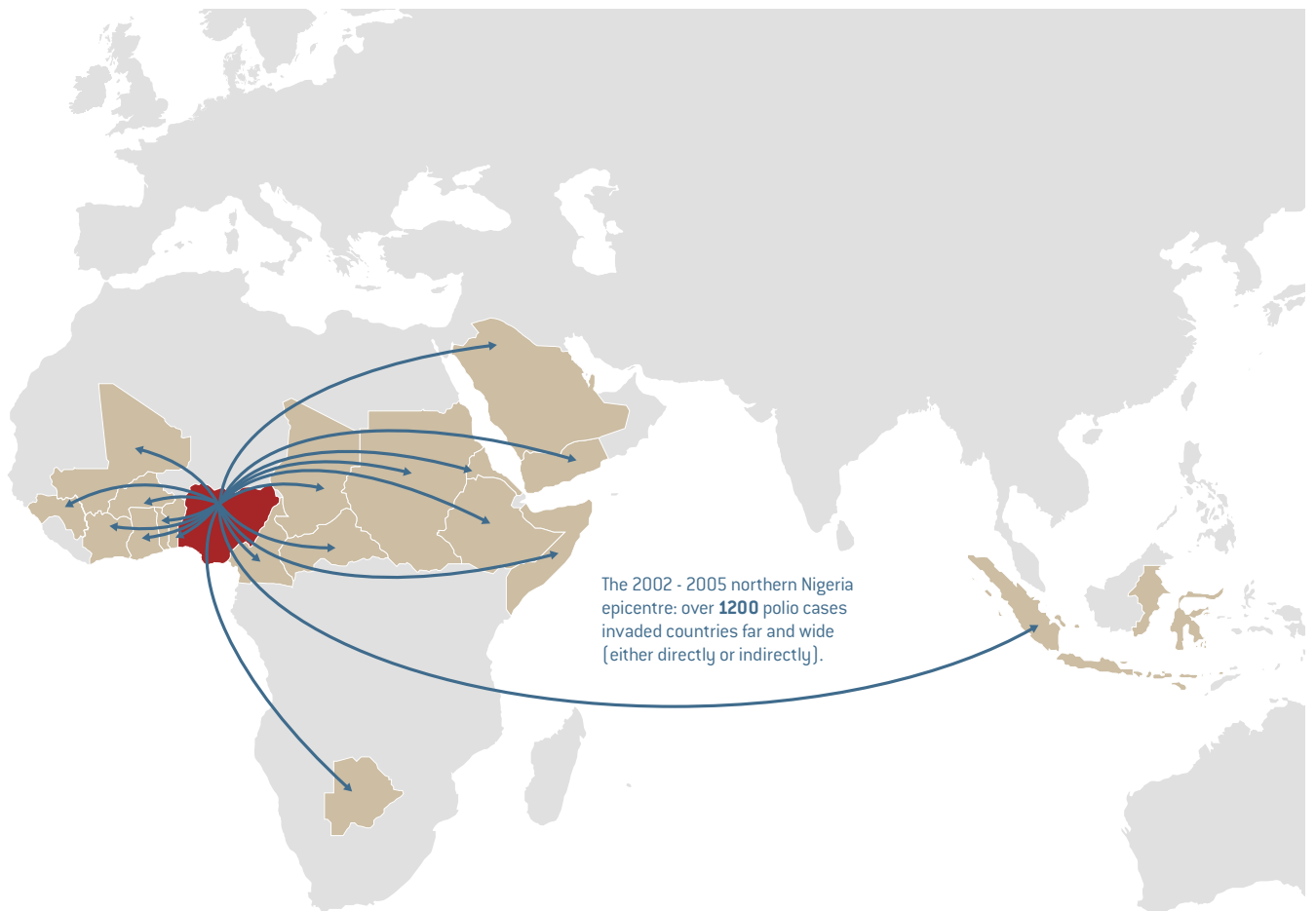


Figure 3. A warning from history: how the polio virus escaped the GPEI



POLIO'S LAST STAND?

Founded in 1988, the Global Polio Eradication Initiative made superb progress over its first twelve years. By 2001 it had got, as is often said, 99% of the way towards eradicating polio. The subsequent decade was very different indeed. Progress flat-lined. Between 2002 and 2010:

- The number of endemic countries remained resolutely at four.
- There were never fewer than nine countries infected with polio in any given year.
- There were never fewer than 750 children paralysed by polio in a year.

History may look back upon 2012 as the beginning of the end for the polio virus:

- Down from 16 in 2011, there are now just four countries in the world infected with polio (to date, at least).
- The number of endemic countries has finally been reduced, to three.
- The number of cases so far is 175.

It is very likely that there will be fewer than 325 cases of polio this year. This is half the number of 2011, and less than 0.1% of the 350,000 cases of 1988. This might no longer be the 'last 1%' of polio, but the last 0.1%.

So far this year, polio has been concentrated in just 94 districts of the four affected countries. These represent just 0.2% of the world's land surface area. In 1988, there were 39 genetic families of wild polio virus, of three different types. In 2012, the vast majority of these are extinct. There are now just four families, of two different types (see figure 2).

As 2012 draws to a close, there is a great deal for the Programme to be optimistic about. This could indeed be polio's last stand.

Cries of 'nearly there' have been heard before, though. History cruelly shows that hard-won progress is easily lost. In 2001, the number of polio cases reached an all-time low. In the years that followed, progress went awry and the virus spread once more. Figure 3 shows how virus spread from northern Nigeria in the past.

This report examines each of the affected countries, and the Global Programme. We find a good deal to be optimistic about, but also intense challenge ahead.

As 2013 begins, the Programme has a golden opportunity. But it would be a terrible mistake to imagine that victory is yet assured. For victory to be realised, the still variable performance of the Programme at the district level and below must hit excellent performance not just sometimes but every time, everywhere.

AT A GLANCE

1988 to 2001: 99% reduction in cases

2002 to 2010: flat line

2012: the beginning of the end for the polio virus?

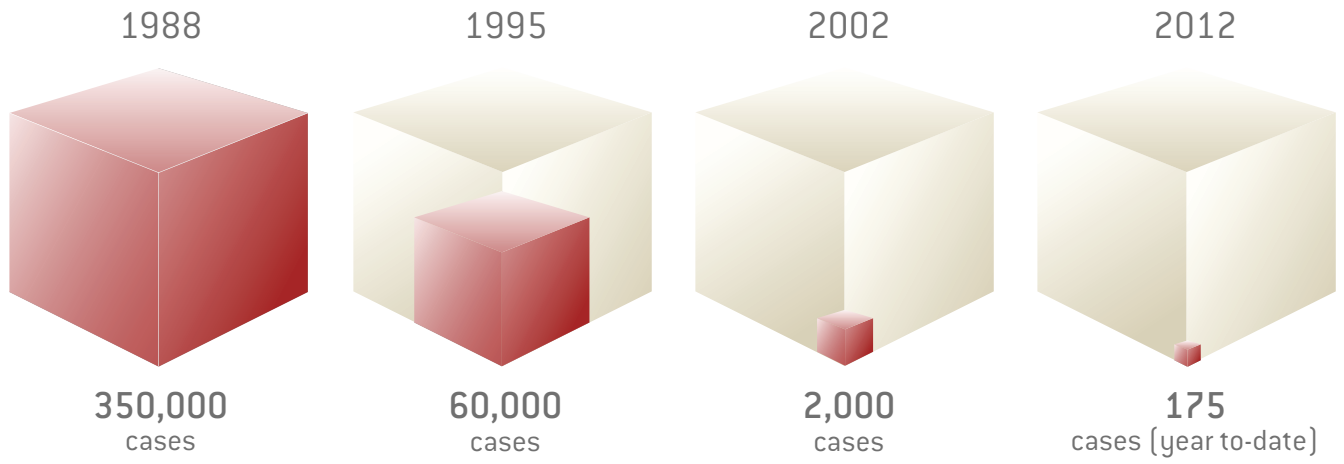
The last 0.1%?

Tiny proportion of the world affected – the virus is under pressure

But history shows hard-won gains being too easily lost

A golden opportunity now – but victory not yet assured

Figure 4. Polio is cornered: 24 years on, a historic opportunity must be seized





Cases & milestones



Figure 5. The hard core challenge: re-established transmission and outbreaks are almost at zero but endemic country cases have barely changed

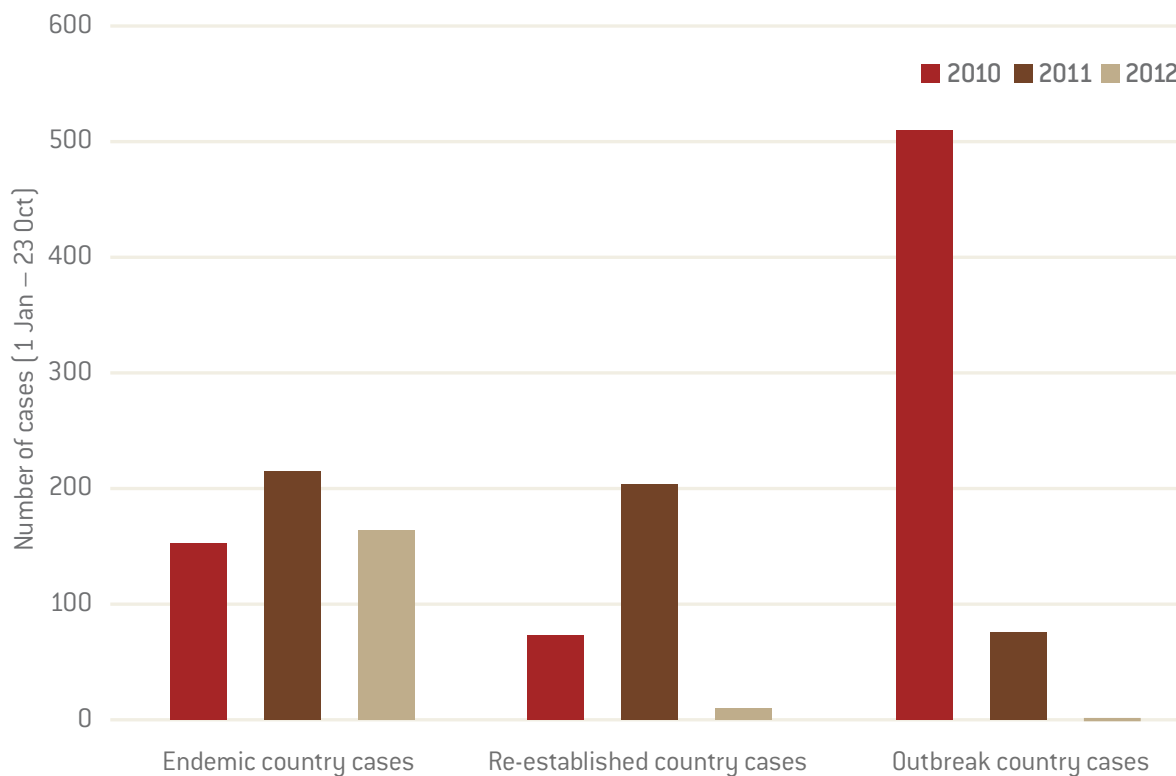
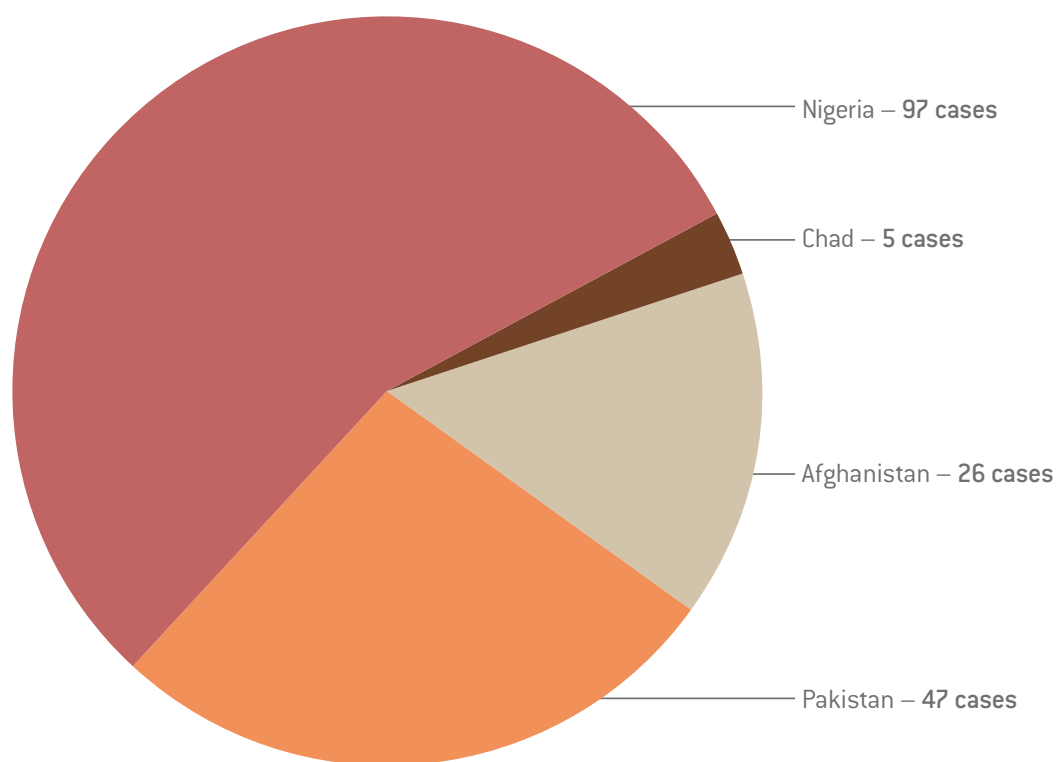


Figure 6. The hard truth: all except Nigeria heading in the right direction



175 wild polio cases so far in 2012: in four countries

CASES

So far in 2012, 175 children in four countries of the world have been paralysed by polio. While any case of a readily preventable disease in a child remains a tragedy, these numbers represent remarkable progress for the Global Programme. By this time in 2011, there had been almost three times as many children paralysed, in four times as many countries.

However, the story is not one of uniform progress across the world. Excellent performance in some areas contrasts with difficult progress elsewhere.

Angola, Chad and DR Congo are the countries classified as having 're-established' polio transmission. Each has rid itself of polio in the past, only for it to return. In each of these countries, very strong progress is being made towards stopping it again. Angola has not had a case of polio since July 2011; DR Congo none since December 2011. In Chad, 114 children were paralysed by this time last year. It has had just five cases in 2012, the most recent of them in June.

In 2012 there has not been a single outbreak of polio outside of the countries with ongoing polio-transmission. Such outbreaks affected 11 countries in 2010 and eight in 2011. They have been demoralizing to the Global Initiative, so their absence so far this year is very good news.

In January 2012 India achieved a major landmark – a year without polio, and erasure from the 'endemic' list. We cannot overstate how important this is. It should demonstrate to every country where polio still exists, and to the world, that there is no such thing as impossible.

This leaves three countries with endemic transmission. Afghanistan, Nigeria and Pakistan are where the polio virus is making its last stand against the global effort to eradicate it:

- In Nigeria, the number of polio cases grew significantly from 2010 to 2011, and has done so again this year.
- Afghanistan and Pakistan both saw case numbers increase from 2010 to 2011, but have seen reductions this year.

Each of these countries faces substantial challenges, set out in this report.

Case numbers are one metric of many. As we examine the Programme, we also pay close attention to geographic spread and to how rapidly each country is finding missed children. But the current case numbers tell an accurate story – a year in which grounds for optimism are well-founded, tempered by the evidence that the deeply ingrained challenges in the endemic countries remain great.

AT A GLANCE

2012: the lowest number of polio cases in history

No transmission in Angola and DR Congo in 2012, much reduced in Chad

No new outbreaks in unaffected countries

India off the endemic list

The virus' last stronghold: fewer cases in Pakistan and Afghanistan; increases in Nigeria

Figure 7. Polio can ebb and flow: decisive action can break the cycle

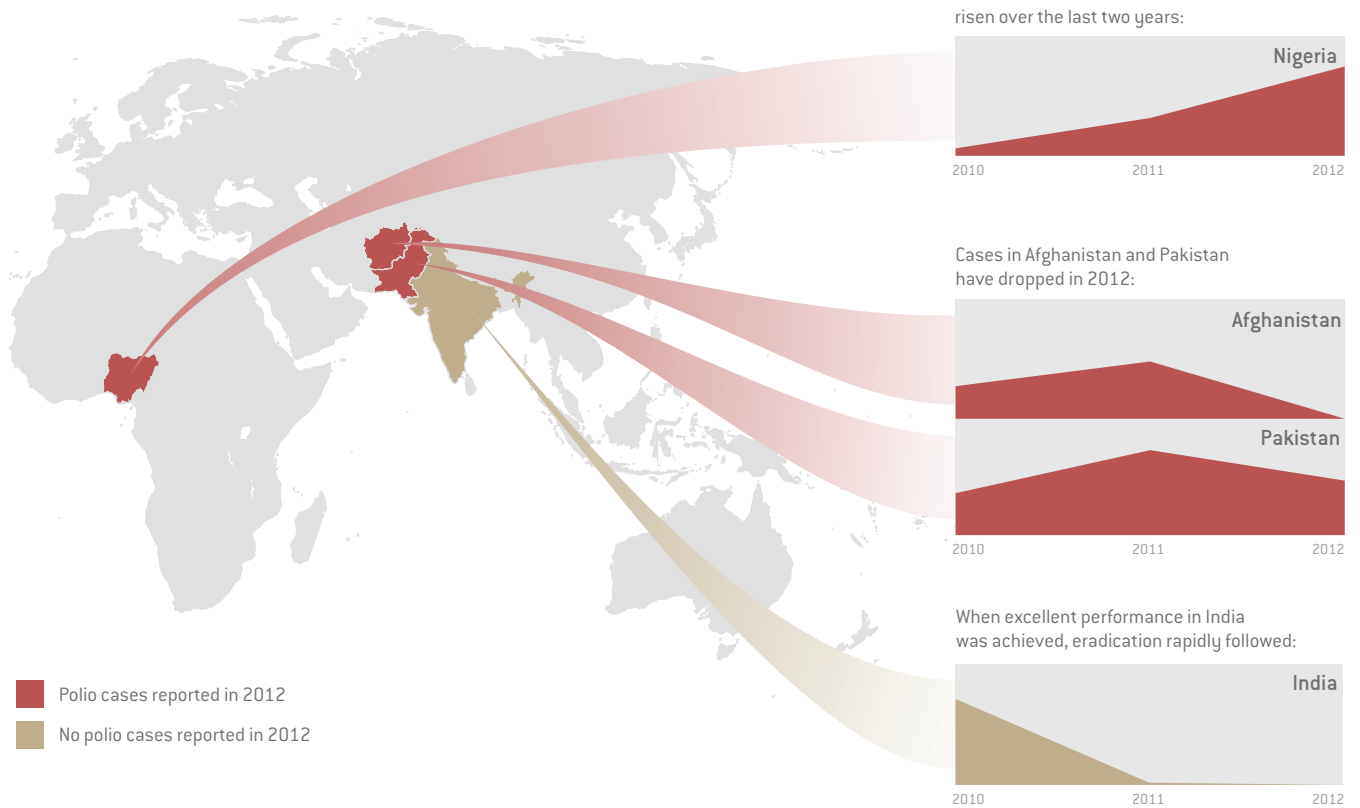
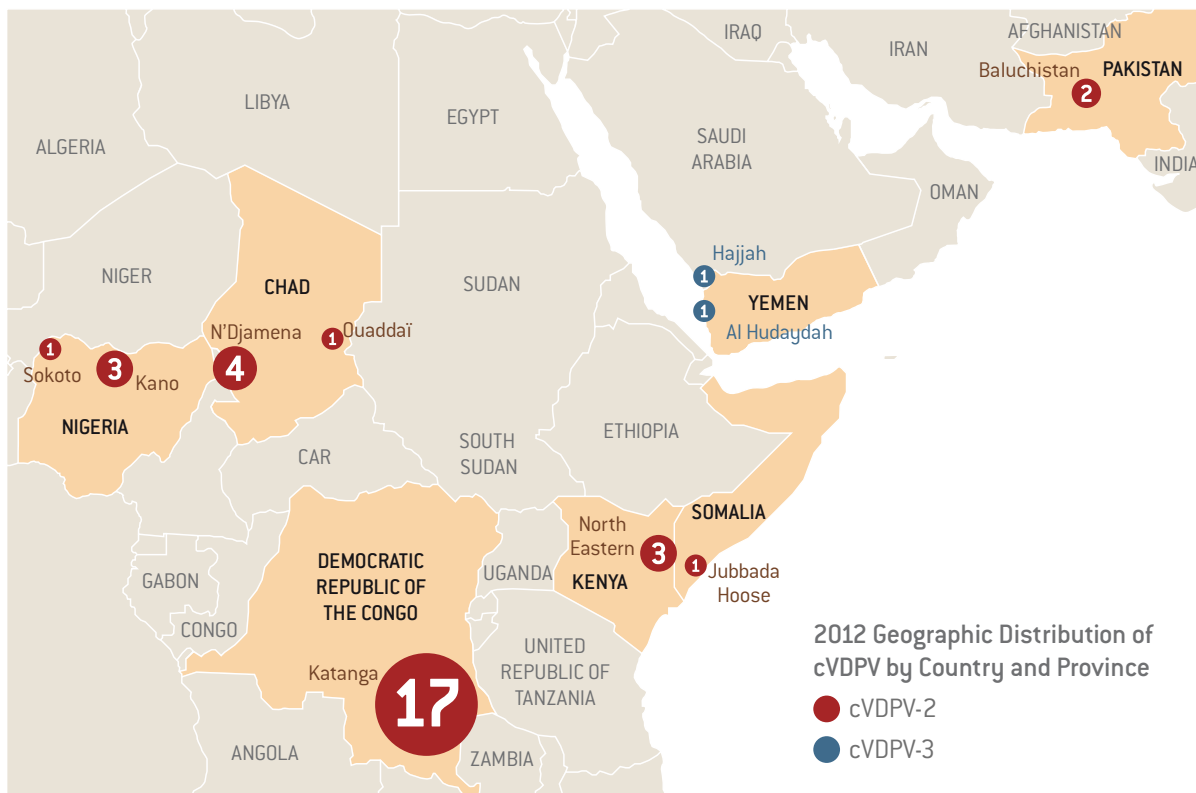


Figure 8. Below the radar: cases of circulating vaccine-derived polio virus (cVDPV) signal low immunity levels



MILESTONES

The Programme's 2010-12 Strategic Plan requires the Independent Monitoring Board to monitor the milestones en route to global interruption of polio by the end of 2012. It is now absolutely clear that this goal will not be achieved.

Re-established transmission

End-2010: Cessation of all 're-established' polio transmission: Missed

At the start of 2010, four countries had 're-established' transmission. Sudan successfully stopped transmission by the end-2010 deadline, but Angola, Chad and DR Congo did not. As the end of 2012 draws close, so does the achievement of this milestone. Each of these countries has more work to do. They particularly need to strengthen surveillance, to be confident that polio has really gone. Although the end-2010 milestone was missed, each of these countries should be commended for its progress since this date.

Endemic transmission

End-2011: Cessation of all poliovirus transmission in at least 2 of 4 endemic countries: Missed

India was the only endemic country to stop transmission before the end of 2011. This report pays close attention to Afghanistan, Nigeria and Pakistan, where ongoing transmission is now the major barrier to global eradication.

Outbreaks

Ongoing: Cessation of new outbreaks within 6 months of confirmation of index case: Missed

This milestone was missed, but barely. The Programme has dealt with 19 outbreaks since the start of 2010. The Programme stopped 18 of these within six months. This has been an area of strong performance.

Mid-2010: Cessation of all polio outbreaks with onset in 2009: Achieved

This milestone was achieved, with no evidence to suggest that any 2009 outbreak was or is ongoing.

Circulating vaccine-derived polio virus

Circulating vaccine-derived polio virus (cVDPV) receives less focus than wild polio virus. There are no milestones related to it. The IMB notes that there have been 34 cases of cVDPV so far this year. This needs to be remembered. Each case of cVDPV is another child paralysed, and the ongoing existence of cVDPV points to suboptimal vaccination coverage in the countries concerned (see figure 8).

AT A GLANCE

Milestone missed: in 're-established' countries but impressive progress

Milestone missed: still too many endemic countries

Milestone missed: but Programme has responded to outbreaks well

Milestone achieved: all outbreaks with onset in 2009 stopped

Vaccine-derived polio virus should be taken more seriously



Countries & sanctuaries



Afghanistan

AT A GLANCE

Polio heroes work despite insecurity concerns

Insecurity does not have to equal inaccessibility

Poor Programme performance is the major problem

Successful Permanent Polio Teams only in place in five out of 13 high risk districts

Sanctuaries

The southern provinces of Hilmand and Kandahar are well known for their insecurity. The front-line health workers there are truly amongst the bravest in the world. These two provinces account for two-thirds of polio cases in the country so far this year, as was the case in 2011.

Inaccessibility caused by insecurity can have severe consequences – as demonstrated by Maiwand District, Kandahar. Here a small geographical area, unreached by vaccinators for three years, reported six polio cases in 2012. Pleasingly though, local negotiations have allowed the vaccination of these vulnerable children in the last month. A clear demonstration that insecurity does not automatically have to equate to inaccessibility.

As challenging as the insecurity situation is in southern Afghanistan, it is now well established that this is not the main reason why the Programme is failing to stop polio here. Even where children are accessible, there are basic management problems that are still not properly addressed. There are worrying signs that the Programme is not entirely moving in the right direction. In April 2012, it was estimated that 49% of children in Hilmand Province had received at least four doses of vaccine in the last year. By September, this number had fallen to 37%.

Permanent Polio Teams in southern Afghanistan have long been credited as the programme's flagship innovation. They have provided polio drops to 146,000 children, including almost 9000 who had never previously received a dose of the vaccine. They should no longer be regarded as an innovation, but as an accepted practice. Key to their success is their low-visibility and step-wise introduction. But all the same, given their value, it is not clear why they are only active in five of the thirteen high-risk districts of southern Afghanistan.

National analysis

There have been just 26 polio cases in Afghanistan this year, down from 43 at the same time last year. Whilst this is good news, vaccination coverage data suggest little improvement in the number of children reached with vaccination. In the all-important south, there are indications that coverage levels in some districts are falling.

Afghanistan's quest to eradicate polio is inextricably linked to that of neighbouring Pakistan. Genetic analysis shows clear chains of transmission between the two countries. The IMB welcomed news of a cross-border meeting in Kabul in July 2012. This admirable willingness to work together must now translate to better collaboration on the ground. The fundamental goal should be to coordinate Pakistani and Afghani vaccination teams on either side of the border so that no child goes missing in between.

Many people believe that polio persists in Afghanistan only because of its border with Pakistan. It is often said that as soon as Pakistan is polio-free, Afghanistan will surely follow. This is a false and dangerous belief. There are three chains of polio transmission in Afghanistan. Two are indeed from Pakistan, but the third is indigenous to Afghanistan. Circulating in Kandahar and Farah provinces, it demonstrates absolutely that Afghanistan remains an endemic country in its own right, that it cannot just ride on Pakistan's coat-tails.

The IMB was told in May 2012 that an Inter-Ministerial Task Force had been formed and would direct a whole-of-government approach to polio eradication. Five months later, this Task Force had yet to meet in person. The President's launch of Afghanistan's Emergency Action Plan is welcome, but comes far later in the year than the other endemic countries. The action plan is a strong one, but the slow pace of implementation is concerning.

In July, an Independent Review Team visited Afghanistan at our request. The team's report makes it clear that there is nothing mysterious about why polio continues to circulate. Inaccessibility is part of the problem, but a small part. There is also a need to correct basic managerial deficiencies. District EPI Management Teams (DEMTs) need further strengthening, with support from the provincial and national level. NGOs implementing the Basic Package of Health Services need to be held accountable for achieving higher coverage rates of routine immunisation, including polio. Continuing efforts must be made to engage the population. One way of doing this would be to expand care and support offered to those paralysed by the polio virus – with the additional benefit of potentially increasing AFP case notification.

There is no reason why polio needs to linger on in Afghanistan. The challenges are clear, and the solutions are written down. It is vital that action accelerates. We hope that with the appointment of a Presidential Focal Person for polio this will now begin to happen. Ultimately all Afghans, now and for generations to come, will reap the rewards of a polio-free nation.

AT A GLANCE

Case numbers down compared to last year

Pakistan and Afghanistan must work together: virus moves easily between them

A polio-free Pakistan will not lead to a polio-free Afghanistan – the virus is endemic in the south

Unacceptably slow implementation of Task Force: five months

Independent Review Team concluded: must improve basic programme management

Afghanistan can be a polio-free nation



Angola

AT A GLANCE

Congratulations due: Angola is polio-free once more

But Luanda still ripe for new polio outbreaks: surveillance improvements delayed

True Government ownership = polio eradication

Angola first rid itself of polio in 2001 but, as a transport hub, was vulnerable to re-infection. This cruel blow came a full three times, each of them from India. Two importations were promptly dealt with, but the third became deeply entrenched. This re-established transmission of polio has haunted Angola since 2005. Seven years later, in July 2012, Angola celebrated a year without a polio case. The country appears to have freed itself of polio once more.

Our greatest concern in Angola has been the capital Luanda. Densely packed with children, its high-rise blocks have been a challenge for vaccinators to cover comprehensively. Luanda has been, and continues to be, the place to which polio could most easily be imported, and the place where circulation could then take hold. It is the place where high quality surveillance is most important. Whilst surveillance has been improving across much of the country, Luanda still has pockets that are not at the level required. The IMB was also told five months ago that environmental surveillance would be established. We are now told that this will happen in early 2013. It can wait no longer.

The Angolan Government deserves praise for its achievements. In recent years, it has funded the vast majority of its Polio Eradication Programme. Its people are now reaping the rewards of that investment. Angola has demonstrated that polio does not survive long in the face of true government ownership.

Angola is not just continuing its polio eradication activities, but improving them. Vaccination coverage has continued to improve through 2012, although in Luanda, there remain some municipalities where more than 10% of children are being missed.

Angola's re-achievement of polio-free status is a boost for the Global Polio Programme. But, until polio is gone from the world, Angola's Programme needs not just to be sustained, but to maintain its habit of continual improvement. We urge Angola to channel the current glow of positivity into the pursuit of a new challenge – that of making the country's defences against a new polio outbreak the strongest in the world. To do so, immunisation coverage and surveillance performance must become uniformly strong across the nation.

AT A GLANCE

Eradication efforts must continue if a new importation is to be repelled



Chad

AT A GLANCE

Big reduction in polio cases

Successful connection with nomads

Helicopters have helped

Watch the border with Nigeria

Getting to grips with polio in Chad is not easy but is heartening to see. In 2011, 114 Chadian children were paralysed by wild polio by mid-October. There have been just five in 2012, the most recent of them in June. The Government and its partners have done well. There has been little tolerance for poor performance, and a commitment to stopping polio transmission driven by the President himself.

Reaching the sizeable nomadic population has been vital – analysis of polio cases shows that nomadic children are disproportionately affected. This is an under-served segment of the population, not previously mapped in any detail. The Programme has sought the help of these communities to develop strategies to find and vaccinate their children. This innovative work, which has also involved the veterinary sector, and the contacting of nomadic leaders by mobile telephone, is paying dividends in Chad and could be replicated elsewhere in the Global Programme.

Lake Chad has also needed real focus. Using helicopters, the Programme has been able to reach populations that are entirely cut-off from other services. The lake sits at the intersection of Chad and three other countries: Niger, Cameroon, and Nigeria. The IMB welcomed news of a recent cross-border meeting in N'Djamena, attended by all four of these countries. Integrated surveillance and synchronised immunisation campaigns are being planned as a result.

The border with Nigeria is of greatest concern to Chad. Chad has been a victim of exported polio from Nigeria in the past and the same thing could easily happen again. Chad needs to proactively mitigate this risk. Continuing to build immunisation coverage and surveillance is the best possible insurance policy.

Although strong progress has been made in Chad, we retain some fundamental concerns. There are still many missed children. The occurrence of vaccine-derived poliovirus, particularly in the capital, is evidence of this. Routine immunisation coverage has been as dismal in 2012 as it was in 2011. There have also been fourteen ‘compatible cases’ of polio in Chad this year. This underlines failings in the surveillance system. If AFP cases were detected and investigated on time, and with adequate specimens, we would know definitively whether or not they were polio. The system for investigating and reviewing compatible cases needs a great deal of improvement. This should be an urgent priority.

Vaccine refusal has barely been an issue in Chad. Community engagement remains key, though. The percentage of children missed for ‘social reasons’ is still high. Caregivers’ poor awareness of vaccination campaigns is now rated as high-risk by UNICEF, not helped by the fact that many core communications personnel are not yet in place in the field.

This is a vital time for the Programme in Chad. Its high level of commitment and drive cannot be let up. In 2013, the number of polio cases in Chad could still go either way. Nobody wants to see Chad lose the gains won through a great deal of hard work over the last eighteen months.

AT A GLANCE

Still too many missed children

No time for complacency on community engagement

Without continuing commitment, gains in Chad could still be lost



DR Congo

AT A GLANCE

Almost a year without a wild polio case

Worrying gaps in surveillance

Highest burden of vaccine-derived polio cases in the world

Still unacceptable levels of refusals in Katanga – but progress being made

DR Congo must sustain improvements

Persistent polio transmission took hold in DR Congo in 2008, imported from neighbouring Angola. Promisingly, the country's last case of wild polio was in December 2011.

The IMB was disappointed not to receive a report in-person from DR Congo. Despite the very positive absence of cases in 2012, the task is not yet complete. The country has a double Achilles' heel – low routine immunisation coverage and areas of persistently poor surveillance. In 2009, a chain of transmission went undetected for a year because of surveillance gaps. The same cannot be allowed to happen again. Surveillance has been improved in many areas, but worrying gaps remain.

DR Congo has also been haunted by circulating vaccine-derived poliovirus. With 17 cases, it has the highest burden of cVDPV in the world this year. This chain of transmission appears to have now been stopped, but its occurrence shows that vaccination coverage was poor.

Katanga Province remains the focus for polio eradication activities. This was the locus of cVDPV transmission. Vaccine refusals in Katanga still account for 50% of missed children – almost four times the national average, and the highest proportion globally. Strong progress has been made here. Flooding the province with over 18,000 social mobilisers has made parents here more aware of vaccination campaigns than anywhere else in the world. Over the six months between January and June, the total percentage of children missed because of refusal was reduced from 10% to 4%.

DR Congo has made significant improvements to its Polio Programme. We urge the country to continue these improvements, and to ensure that increasing insecurity in the east of the country does not destabilise the gains made. It would be a calamity if the current trajectory of improvement is lost.



India

AT A GLANCE

**Pride of the Programme: polio-free India.
But the risk of importation remains**

**A great legacy for public health – if
managed correctly**

**India supporting the remaining endemic
countries**

**India's emergency response plans must
be top-drawer**

It is eight months since India's proud erasure from the polio-endemic list. Arrangements are underway to certify the South East Asian region as polio-free in 2014. Regional certification will be a landmark to celebrate, but will have no tangible impact on risk. India remains at great risk as long as polio transmission continues elsewhere in the world – indeed, amongst some of its closest neighbours. India's Programme needs to maintain its extremely high level of surveillance and of immunization coverage.

The Indian Programme is looking closely at the question of legacy – of what should come next. The challenge of stopping polio in India was unprecedented, requiring the construction of a sophisticated programme. This has created valuable assets – human, organizational, logistical, and reputational – whose great value must be captured for the greater health of India's people.

In keeping with our previous recommendation, polio eradication professionals from India are now lending their support to the remaining polio-endemic countries. We strongly encourage that this cross-national support continues and is expanded to the greatest degree possible.

If the polio virus is re-imported into India, the swiftest possible response would be needed to stop re-establishment of transmission. The Programme's emergency response plan aims to mount a vaccination campaign within seven days in such an event. These plans need to be kept current and ready to go. The impetus to do so cannot be allowed to slip as the months go by.

We recommend that India plans for a simulation exercise to test the readiness of its emergency response plans. We recommend that the exercise should begin, on an unannounced date in mid-2013, by selecting a sample of districts at random and carrying out real-time simulation-based scrutiny of their emergency response capability.



Nigeria

AT A GLANCE

Explosion of cases in northern states

Only a third of children receive OPV3 through routine immunisation

Over 105,000 children missed

Evening review meetings crucial

Sanctuaries

Kano, Katsina and Kaduna

These central northern states have witnessed an explosion of polio in 2012. Together they have recorded 59 cases this year – 60% of Nigeria's total case count.

Micro-planning has in the past been poor in all 44 Local Government Areas (LGAs). To address this, the Programme is conducting an intensive review of micro-plans together with on-the-ground verification exercises. Routine immunisation coverage is also very low: only 33% of children receive OPV3. As such, there is little safety net for children not reached during supplementary immunisation activities. The Programme is increasingly talking to LGA Chairmen about the importance of routine immunisation but must now significantly ramp up this activity.

Sokoto and Zamfara

The polio virus retains a tenacious grip on these two north western states. More than 105,000 children were missed during the October 2012 campaigns in Sokoto alone.

Inadequate commitment from the Sokoto State Governor was a problem in the past. We are pleased to hear that the Governor personally flagged off campaigns in June and September and donated much need equipment such as solar fridges. We hope this continues and that other State Governors follow this example. The Programme has now identified poor quality evening review meetings as a problem. These meetings are hugely important to implementing a successful vaccination campaign. Urgent improvements are necessary.

Borno

Northeast Borno must deal with a volatile security situation as well as implementing programmatic improvements. The bravery and dedication of polio programme staff who continue to serve their communities in these challenging conditions is to be highly commended.

Members of a respected Islamic women's group have been engaged to work in security-compromised areas and are proving to be a great asset. A disruptive rainy season also caused inaccessibility problems. The Programme conducted Short Interval Additional Dose campaigns in May to help mitigate the effect on vaccination coverage. The rainy season also coincided with an influx of nomads. The Programme provided some additional resources to help vaccinate these often zero-dose children. Reaching all these nomads is a key priority.

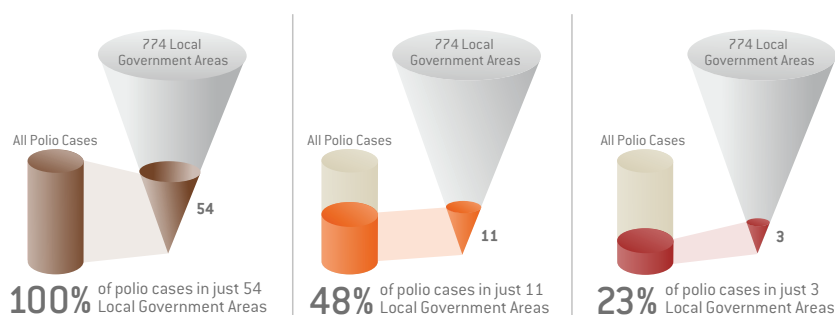
Sanctuaries within sanctuaries

At quick glance, the sanctuaries for the polio virus identified above suggest that polio cases are uniformly spread across the whole of north Nigeria. Delve deeper however and we discover that this is not the case.

In fact polio cases are highly concentrated in a relatively small number of districts (figure 9). Indeed, 23% of polio cases in 2012 have been found in just three Local Government Areas: Katsina, Batsari and Minjibar.

This is the purpose of the sanctuary model – to pinpoint precisely those areas where the virus persists, to understand the unique mix of reasons why it persists, and to formulate the appropriate package of interventions to reach missed children. The better the Nigerian Programme can pinpoint these 'sanctuaries within sanctuaries', the better it can target its efforts and the sooner transmission can be interrupted.

Figure 9. The many threatened by the few: Nigerian polio cases highly geographically concentrated



AT A GLANCE

Brave and dedicated staff

Islamic women's group doing great work

Polio cases concentrated in a very small number of districts

National Analysis

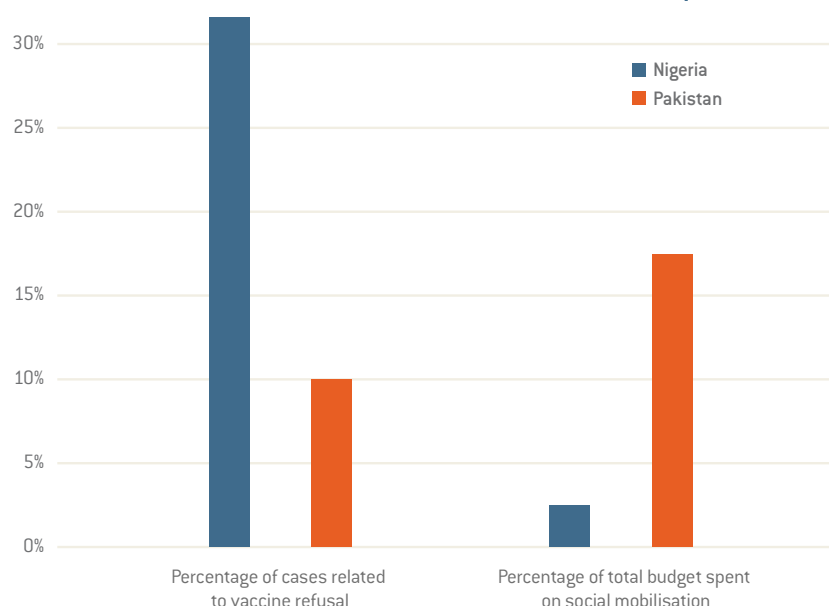
Everybody who knows the Global Polio Eradication Initiative is watching Nigeria more closely than anywhere else in the world. In 2012, the increasing amount of polio here has stood in painful contrast to the gains made in every other country. Having grown for two years in a row, everyone wants to see the number of cases fall next year – nobody more so than the leaders of the Nigerian Programme, whose commitment is strong. New measures are being put in place that have the confidence of GPEI leadership.

It is clear that there are still basic problems with the Programme in Nigeria. Whole communities are being found missing from microplans. The detection of orphan viruses highlights the existence of major surveillance gaps. One-third of the children paralysed by polio in 2012 had not received the vaccine because their parents refused it.

The IMB was concerned to learn that spending on social mobilisation is lower in Nigeria than in countries where non-compliance (refusal) is, in relative terms, less of a problem (see figure 10). Explicit refusals are only the tip of the iceberg. ‘Child not at home’ was the reason given for 66% of children being missed in Katsina in the July campaign. It can be easier for a mother to make this excuse than to outright refuse the vaccine.

Community engagement efforts need more development. Even the basics – polio posters and banners – have been conspicuous by their absence. It is no secret that polio is not often top of the Nigerian mother’s list of concerns. The Programme must open its ears fully to understand what is top - the unique needs of every community - and respond to these needs. A community furious at the amount of rubbish on their streets? Send in sanitation lorries with the polio vaccination teams. A village with no clean water? Offer chlorine as well as polio vaccine. A slum suffering an outbreak of infant diarrhoea? Polio social mobilisers provide oral rehydration solution.

Figure 10. Blindingly illogical: the funding for social mobilization in Nigeria drastically below the level that the incidence of vaccine-refusal related cases requires



AT A GLANCE

The world is watching Nigeria – recent increases in polio cases caused great concern but strong commitment and action is in place

A third of paralysed children were victims of vaccine refusal

Spread of social mobilisation disappointingly low

Give the community what they need – together with polio drops

The engaged leadership of LGA Chairmen and traditional leaders is crucial. In some places, these individuals are highly committed. In many others, they are failing even to chair meetings of their LGA Task Force – the heart of campaign preparation and implementation. In Katsina State, only 12 of the 34 LGA Chairmen attended evening review meetings during the most recent vaccination campaign.

But for all that is still wrong, it seems that Nigeria's Polio Programme is changing for the better. It has put in place a major personnel surge. It has started microplanning house by house. Improvements are being made from one round to the next by analysing vaccinator tally sheets in detail. Nomadic populations are being identified – over 1500 “new” settlements so far. Vaccinator teams have been restructured, and their workload rationalised. The Programme has readily welcomed colleagues from India, and is learning from their experience. There is a new-found energy. These are promising developments.

The power to stop polio transmission is now in the hands of everybody in the chain from President to vaccinator. The traditional leaders and LGA Chairmen of the north are particularly important. It is they who can lead the expulsion of polio from Africa. It is the job of everybody else to encourage and support them to do so. Experience elsewhere shows that data – and its quality – will be important to empower these individuals to act.

The commitment of national leaders must be driven down and reflected in the commitment of local leaders. And as a practical step, would it help if the Head of the State Task Force telephoned the leaders of each high-risk LGA every week to maintain a check on progress? It is promising to hear of the President taking a personal interest in which LGAs are performing and which are not.

A highly competent and able network, traditional leaders are hugely respected by their communities. They need to be empowered to play the vital role that they undoubtedly can. The strong leadership of the Sultan of Sokoto is admirable, directing traditional leaders to take ownership of the Polio Programme. A strong relationship of equals between LGA Chairmen and traditional leaders is the foundation of a winning team.

What happens in Nigeria is of concern globally. But primarily, what happens in Nigeria is of concern to Nigerians. However many world leaders visit the President, whatever report we write, whatever anybody else says, the only thing that will transform the Polio Programme in Nigeria is if a critical mass of people – parents, leaders, and influentials – truly grasp the mission to eradicate polio as their own. If this happens, Nigeria can quickly be rid of polio.

We are asked to make a judgement of how well the Programme is progressing. It is a difficult judgement to make. There are clearly the makings of programmatic improvement, yet we continue to hear of basic problems. There is some evidence to suggest that fewer children are being missed, although this evidence is not uniform. The bottom line must be the amount of polio that we are seeing. If this trend is to be reversed, the green shoots of improvement we are now glimpsing must be nurtured and continue to grow.

We welcome the establishment of a state-of-the-art Emergency Operations Centre in Nigeria. This provides a unique opportunity for the world's experts to engage with and support (with advice and encouragement) the Nigerian team as they carry out their vital work.

AT A GLANCE

LGA Chairmen simply must chair LGA Task Force meetings

Green shoots of programme recovery – improvements are being made

The power – and responsibility – to eradicate polio is now in the hands of LGA Chairs and traditional leaders

Commitment must flow from national to local level

Strong LGA Chairman and traditional leader partnership: a winning formula

If Nigeria takes true ownership of the Programme ('India-style') – eradication will swiftly follow

There is optimism that new measures will make a big impact on case numbers

A new Emergency Operations Centre is particularly welcome

We recommend that a continual live audiovisual feed should be broadcast online from the Nigerian Emergency Operations Centre, with a facility for the world's polio experts and the IMB to observe and provide input at any time.

Nigeria may be the last country in the world with polio. No one in Nigeria will wish the country's name to become synonymous with polio. Nigeria as a nation cannot afford another year of increasing transmission. The Global Programme's and the country's leadership strongly believe that in 2013 the number of polio cases will fall. The IMB welcomes this new mood of determination.

AT A GLANCE

2013 simply must bring fewer cases: no ifs, no buts



Pakistan

AT A GLANCE

KP is Pakistan's 'Super Sanctuary'

Proposal made to double the pay of frontline workers in January – this must happen

Sanctuaries

Khyber Pakhtunkhwa (KP)

KP is Pakistan's 'Super Sanctuary'. It has experienced an upsurge of polio in the second half of 2012. KP accounts for over 40% of all Pakistan's polio cases and 46% of Pakistan's infected towns and districts this year. Inconsistent performance at the Union Council level, poor implementation of the migrant strategy and a failure to conduct additional vaccination passages in the low transmission season all contributed to this upsurge. Worryingly, 50,000 children were missed during the September campaigns. Two province-wide campaigns are scheduled for November and December. These must be of a significantly higher quality if they are to have the desired effect.

The proposal to double the salary of frontline workers in January and to award bonuses for good performance is very welcome. If implemented, this will help further motivate vaccination teams to pull out all the stops to reach the most vulnerable children. Whilst the Chief Minister has agreed to increasing the frequency of campaign activities, we are concerned that the provision of financial resources to support these has yet to be confirmed.

Working with the community will be vital if the lid is to be put back on the recent surge in cases. The Programme has rightly identified the need for robust media campaigns to engage the community ahead of multiple campaign rounds. Finding more ways to communicate and collaborate with communities would be valuable.

Federally Administered Tribal Areas (FATA)

In FATA, the lives of 203,000 innocent children have been put in danger by the actions of anti-Government groups that have banned polio vaccinators from South and North Waziristan. The protection of Pakistan's most vulnerable children should be a universal cause. Encouragingly though, the number of inaccessible children in Bara Tehsil of Khyber Agency has actually decreased in recent months – from over 46,000 in January 2012 to less than 18,000 in September 2012. Better civil military cooperation has been one reason for this. The Programme should seek to maximise this partnership.

Against this backdrop, the Programme in FATA must not lose sight of the need to improve other aspects of campaign preparation and implementation. Efforts to gain increased accessibility will be wasted if campaigns are then executed poorly or mothers refuse the vaccine. Analysis shows that FATA parents are 40% more likely to refuse OPV than parents in any other part of the country.

Quetta Block (Pishin, Killa Abdullah and Quetta City)

There are promising signs in the Quetta Block. Environmental surveillance has failed to identify wild polio since February 2012. Just one case of polio has been detected since the last IMB meeting in May 2012. But not all is well. In Killa Abdullah, 22% of children were missed during the July campaigns. And the recent detection of cases of vaccine-derived polio in the Quetta Block points to continuing deficiencies in vaccination coverage.

We applaud the government authorities for matching GPEI funding of vaccinators – doubling their overall salary. Higher salaries attract a higher calibre of vaccinator, more motivated to reach the last child with polio drops. Ongoing involvement of the Chief Secretary and other senior officials is also important, indeed vital if recent improvements are to continue and become common throughout Quetta. The formation of an “All Party Crisis Consultation” including religious leaders is a welcome innovation – we await news of its impact with interest.

Gaddap Town, Karachi

Gaddap Town, particularly Union Council 4, remains a thorn in the side of Polio Programme in southern Pakistan. It is deeply frustrating for all involved with the Programme that such a small geographical area can offer such succour to the polio virus. Although no polio case has been reported since November 2011, environmental samples continue to test positive.

Following a major security incident in July 2012, Gaddap was declared a “no-go” area for UN staff. Tribute must be paid to the District Commissioner and his team for ensuring that vaccination campaigns have continued during this period. Pashtun communities still remain under-immunised. 89% of children were vaccinated in one Pashtun zone of UC-4, compared to up to 97% of children in mixed ethnicity zones. The programme must continue with relentless efforts to engage with Pashtun families. To its credit, the Programme in Karachi does appear to have a talent for community engagement from which other parts of Pakistan could learn. Polio Programme-sponsored rubbish collection, mobile communication floats and Rotary-supported medical camps are to be highly praised.

AT A GLANCE

Over 200,000 innocent children put in danger by anti-Government groups

Refusal still a major problem

A decrease in virus detection – promising signs

Bringing all Partners to the table to tackle difficult issues is an excellent step

Gaddap Town: tiny area, tremendous problem

Winning over Pashtun families still vital to success

National analysis

Just a year ago, the polio programme in Pakistan was in a very bad way. Case numbers were spiralling upwards. Its action plan was more 'plan' than 'action'. A whole group of vaccinator managers were undermining progress. We advised that the Programme was deeply dysfunctional, and needed to fundamentally change its approach.

A year on, the picture is very different. Commitment from the most senior levels has catalyzed progress. Indicators show that more children are being reached by vaccination rounds, that vaccine refusals are falling, and surveillance improving. There had been 132 cases by this time last year. That number has plummeted in 2012, to just 47.

Both vaccination coverage and surveillance need further improvement. Environmental surveillance shows transmission in Punjab and Sindh, where cases had not been spotted. Virologic analysis confirms that surveillance gaps persist. Too many children are still being missed by vaccinators – particularly Pashtun children.

Many programmatic advances have been made, but two stand out. In an important show of commitment, the government is taking a \$227 million loan from the Islamic Development Bank to fund eradication activities. It has also increased the pay for vaccinators in some key areas, and established a direct payment mechanism to ensure that they receive the money due to them. The latter has met with resistance from the disruptive elements that previously most benefited from the less-accountable disbursement methods. This is a positive sign – it shows that direct payment is having the desired effect. We urge the Programme to hold its nerve in dealing with these unhelpful individuals.

The programme is established on a trajectory of improvement, but there are two challenges ahead, of a very different nature.

The first major challenge is forthcoming national elections. We have seen – in Nigeria and elsewhere – the power with which elections can disrupt eradication efforts. It would be a travesty if the impressive progress made by Pakistan over the last twelve months is undone because of the inattention of the very people whose leadership has contributed significantly to recent improvements. Preparations to protect the Polio Programme from election-related disruption need to be rock-solid. We understand that preparations are being made at national level, but are gravely concerned about the potential for serious disruption at local level too.

The second major challenge is one of security and access. Polio has become a political pawn in Waziristan. In Karachi and in Quetta, the killing of two polio personnel is a tragic and important reminder of the bravery of polio staff in many places. The Programme is taking the right steps to deal with both of these situations, but they lend new and unwelcome complexity to the challenges of inaccessibility.

The IMB congratulates Pakistan and its partner agencies for the progress made against polio in the last year. We urge that equal determination and nimbleness be applied to the challenges of insecurity, and that every possible effort is made to stop elections from derailing progress.

Real improvement in Pakistan: Cases slashed in half this year

Surveillance gaps persist

Loan from the Islamic Development Bank a real sign of Government commitment

Election disruption a massive concern

Polio heroes are an inspiration to the Global Programme

This strong progress must continue



Global view

GLOBAL VIEW

We set out eight concerns that the Programme needs to address as a matter of urgency.

We then turn to the question of ‘what happens next?’ as the Programme is now certain to miss its end-2012 milestone of stopping transmission.

1. WHO Member States should require that any child or adult travelling out of Afghanistan, Nigeria and Pakistan be certified as vaccinated against polio, to reduce the substantial risk of the virus spreading to polio-free countries

Since the start of 2010, there have been 19 polio outbreaks in countries previously rid of the virus. The risk of further outbreaks remains unacceptably high. Besides their human and financial cost, outbreaks are an unhelpful and demoralizing distraction to the pursuit of global eradication. They need to be prevented.

It seems essential to ensure that all people travelling internationally from an endemic country have been vaccinated against polio. Responding to our previous recommendation, the World Health Organization has examined how the International Health Regulations could be used in support of this. We agree with their assessment – that a ‘standing recommendation’ is the best available mechanism. Some will see this as extreme move, but it is necessary. It is not the most extreme use of the International Health Regulations that could have been proposed.

Given the high risk of spread, and the damage that such spread would do, we believe this measure must be introduced urgently and is consistent with the ‘emergency’ status of the ongoing transmission of polio and the threat posed by endemic countries to others.

We recommend that the International Health Regulations Expert Review Committee urgently issue a standing recommendation by May 2013 that will introduce pre-travel vaccination or vaccination checks in Afghanistan, Nigeria and Pakistan until national transmission is stopped. No country should allow a citizen from any endemic polio state to cross their border without a valid vaccination certificate.

2. To maximize the pace of improvement over the next six months, each affected country needs to set clearer priority goals and ensure it achieves them

From 2011 to 2012, the number of polio cases in the world was slashed in half. As 2013 draws near, each endemic country's programme is in a stronger position than it was a year ago. The next six months are a crucial time: the low season for transmission, the opportunity to secure further gains before the high season begins.

During our meeting, the IMB received presentations from each affected country represented. We were impressed by the extensive action plans that each country has. But it was often not clear what the priorities are. If the actions with the greatest potential impact are not explicitly prioritized, they risk getting lost in the haze.

Future outbreaks threaten the eradication goal

A polio certificate for international travel out of endemic countries

Low transmission season a golden opportunity

Country action plans must ‘see the wood for the trees’

AT A GLANCE

Experience from India can help select priority actions

Preparation is the key to successful campaigns

Across the Global Programme, timelines for implementing key changes are too often allowed to slip. At one meeting after another, for example, we have been told, “The human resources surge is nearly complete. We now need to make sure that these staff are properly managed and trained”.

Each country programme, together with its partners, must construct a short and clear list of its priority goals over the next six months. Other actions must continue as well, but these priorities need focus.

It is for countries – not us – to determine these priorities. It is helpful that the elements of best practice in India and elsewhere have now been set out with greater clarity than before – in the 2012-13 Emergency Action Plan, and at our meeting. The following elements have particularly struck us as effective and important key priorities:

- Rescheduling all campaign monitoring to occur at the same time as the campaign instead of afterwards, so that problems can be resolved in real time.
- Ensuring that absolutely every district task force meeting is chaired in full by the designated official.
- Completing the process of house-by-house microplanning.
- Ensuring, with tight monitoring, that the human resource surge is working effectively.
- Social mobilization surges in areas where there are high numbers of refusals, children not in or asleep, a lack of campaign awareness, or hostility to the vaccine.

We recommend that within the next fortnight, programme leaders in Afghanistan, Nigeria, Pakistan and Chad discuss their country's plan and best practice elsewhere to write, with their partners, a list of no more than five priority goals that they will achieve by the end of April 2013, circulate these goals to all programme staff, and maintain the focus and pace necessary to achieve them.

3. When the same children are missed by one vaccination campaign after another, frequent campaigns may not be the best way to stop polio transmission

To the outside observer, the days of vaccination campaigns might seem the most impressive and important part of the Programme. Vaccinating millions of children with polio vaccine in just a few days is an impressive feat indeed. But there is something more impressive, and more important: the work between the campaigns. The work to ensure that the next campaign misses fewer children than the last; to better map communities; to understand why children are missed and to find ways of reaching them. The work to engage governors and parents in the cause. This is the smart work. Without this, in round after round the same children are missed and polio lives on.

There are downsides to holding campaigns too frequently. They are expensive. They are tiring. Parents start to ask why they are necessary. Time spent running a campaign is time that could be put towards improving the quality of the next campaign.

There is a trade-off between the frequency and the quality of vaccination campaigns. This has not been explicitly analysed. It may be that the current balance is correct. But it may not be, and this is a vital question to address. The optimum balance is likely to vary from one place to another. Whatever the answer, it is crucial that primary focus be on improving coverage from one round to the next – on finding more missed children.

We recommend that an analysis be urgently commissioned to examine the relationship between the frequency and quality of vaccination campaigns, to guide programmatic decisions about the optimum interval between campaigns.

4. Mothers and fathers are critical to the Programme's success, but do not have a voice within it

There is one single change that would transform the Programme more than any other. One change that, if achieved, would rapidly stop transmission. That change is one of parental demand for the vaccine. In an ideal eradication programme, every mother would be out on the street, demanding that her child be vaccinated; she would be pointing the vaccinators to children that are missed, and suggesting how to make the Programme more successful. In short, polio eradication would also be her goal; the Programme would belong to her as much as to the country's leaders.

The ideal may not be attainable everywhere, but steps towards it are possible. In many countries, the Programme's mass-media messaging seeks to build the sense of ownership, of shared responsibility. Social mobilisers do the same with individuals and communities. But it is notable that the Programme's power structures do not reflect this. The systems do not truly bring the parents' voice inside the Programme; seek their views; hear their ideas; make it theirs.

In every country, the district-level task force meeting is now a keystone of campaign preparation. The task force is an obvious place at which mothers could be given a greater voice; brought closer to power. The costless innovation of involving them here could have an immediate practical impact – in raising ideas that nobody else has thought of; in ensuring that the grounded view is heard. It could also bring the Programme one step closer to that ideal vision – in which the Programme belongs to parents.

We recommend that every endemic country district-level task force (or equivalent) should be constituted to include a parent, representing parents of the district.

5. Too many communities see polio vaccination as an imposition with no benefit

Polio is now a rare disease. Thanks to the hard work of millions in the Polio Programme over the last 24 years, a disease once widely feared is now, to most, a distant memory. Meanwhile, in the remaining polio sanctuaries of the world, mothers and fathers do their best to raise healthy, happy children in extremely challenging conditions. Epidemics of measles and malaria sweep communities. Rubbish is piled high on street corners and in open sewers. Nutritious food, if available, is often too expensive. The dream of a basic education remains just that – a dream.

AT A GLANCE

Too many campaigns: not enough time to make improvements?

Deep-seated parental demand would render the polio virus helpless

Parents' voices must be heard

The perceived threat of polio is often low

Unsurprising then, that when a polio vaccinator knocks on the door, as happened last month and the month before that, the average parent greets them with bewilderment; “Why polio vaccine? Why not something else? Something my child actually needs?”

Those of us who understand polio well know the answer; polio is still a danger and if we do not finish the job, children throughout the world will be at risk again. But these mothers and fathers do not live in a hypothetical future; they struggle here and now. If the Polio Programme cannot attract parents with polio vaccine alone, it must seek to improve the package on offer.

The Programme knows this; it describes the offer as ‘Polio-Plus’ – polio vaccine plus another service. However, converting the rhetoric into substance has proved much more difficult. We often hear a common complaint: “the logistics are too complicated”. Perhaps these people equate polio-plus with an impossible instruction to deliver all services with the polio vaccine. This is not what is asked for. The Polio Programme does not need to deliver every item on a parent’s shopping list – just one would be beneficial. It need not even necessarily be the Polio Programme that delivers the additional service – it needs to actively engage with other partners and form alliances.

We urge the Polio Programme to identify in every local community, a priority service that can be delivered with polio vaccine – and ensure it is delivered. Best practice examples exist. We hear of trucks clearing rubbish away whilst vaccination teams follow in their wake. We hear of mosquito nets distributed by polio social mobilisers in collaboration with malaria programmes. Every community will have a unique set of needs. The Polio Programme must understand what these are and use them to their advantage. In doing so, the Programme will succeed not just in vaccinating more children, but in improving the wider conditions of the community it seeks to serve.

Another question of vital importance is what happens to children who are paralysed by polio – what care and support they receive. We know that the Programme cares deeply about every child affected by polio. It would help its engagement with communities (and of course the children themselves) if it can more definitively demonstrate this.

We recommend that every opportunity be taken to ‘pair’ other health and neighbourhood benefits with the polio vaccine.

6. The Programme cannot afford for vaccine supply issues to dictate when campaigns can and cannot be held

The IMB has written five reports before this one, covering many different aspects of the Global Programme. One aspect given little airtime has been vaccine supply. The distribution of polio vaccine around the world is a remarkable logistical endeavor. Historically, supply and demand have generally been well-matched too, with a buffer of additional vaccine to ensure that the timing of campaigns is determined primarily by when a campaign is needed, not by when vaccine is available. Recently though, there have been problems. Campaigns planned for late 2012 and early 2013 have been delayed as a result. The Programme is taking clear steps to rectify the problem, but it illustrates an important vulnerability.

AT A GLANCE

Many communities desperately want other services instead

Many missed opportunities to link polio vaccine with other services

Deliver polio drops together with another service of value to the community

Vaccine supply – a highly visible issue when things go wrong

Vaccine manufacturers play an important part in the Programme. The importance of their contribution needs to be recognized. Likewise, they must realize the responsibility that they have. The need to maintain a ready supply of vaccine becomes even more important as eradication nears. It is vital that the supply does not dry up too soon – oral vaccine will be needed for several years to come, and its timely availability is key.

The IMB requests a report on vaccine supply at each of its future meetings.

7. Capturing the learning from polio eradication is a vital element of the Programme's legacy. It needs to be rigorous and comprehensive, and it needs to start now

Some questions:

- When polio is gone, should eradicating another disease be a global health priority?
- If so, what does the polio experience teach us about how it should be done?

These questions are being aired, and will suddenly amplify after polio is eradicated. Less obvious questions will also emerge: what can the Programme teach us about building universal primary care globally? Tobacco control? Tackling physical inactivity? This is not abstract. There are tangible lessons about working in partnership, about mobilizing communities and donors, about operating at scale; even – dare we say it? – about the role of an independent monitoring function.

We first highlighted the need to plan for legacy in July 2011, and welcome the fact that the Programme is now doing so. But legacy is about more than bricks and mortar – more than just the physical infrastructure of the Programme.

The polio legacy should also encompass the vast amount of intellectual property accrued since 1988. This vast depository of knowledge and experience cannot be allowed to remain trapped in the minds of the Programme's impressive individuals. As the Programme begins to build its strategic legacy plan, we strongly encourage that rigorous knowledge capture and dissemination be a key strand.

We highlight this now because it needs to start as soon as possible. India alone offers enough learning for dozens of valuable research projects. Some will argue that this can wait for later, but we argue that the knowledge will seep away as the months roll past. It is very rare that health programmes properly capture their learning. Polio eradication needs to become an exception.

The process of capturing knowledge – like the broader process of legacy planning – needs to be an inclusive one. It needs to draw in people with expertise in the broader fields of immunisation and beyond.

We would not suggest that this knowledge capture should divert the attention of those working to stop transmission. They have more pressing priorities. But it needs to be a priority for someone.

AT A GLANCE

As eradication nears, vaccine supply must not dry up too soon

What next after polio? What can the experience teach others?

Starting good knowledge capture cannot afford to wait

We recommend that the Programme accelerate planning to set out how the learning from polio eradication can be captured rigorously and comprehensively as part of the strategic legacy plan - overseen and funded with minimal distraction to current work.

8. The Global Programme is rightly focusing on stopping polio transmission in the four affected countries, but must not lose sight of vulnerabilities elsewhere in the world

It would be dangerous to assume that polio will remain confined to the four current polio-affected countries. Population movement and poor immunity leave a great number of other nations and areas at risk of importation, particularly Yemen, Libya, the Horn of Africa, Somalia, Ukraine, Uganda and Kenya. Countries bordering Nigeria are of deep concern. They are tinder boxes that could all too easily be reignited.

The IMB has repeatedly heard such concerns expressed by those with intimate knowledge of the quality of vaccination programmes and surveillance in different parts of the world. We have regularly asked the Global Programme about the situation in these currently polio-free parts of the world and been reassured that they are aware of potential risks.

However, the IMB believes that the current context, with the polio virus trapped in a small number of places in the world, demands a more assertive approach. Without this, there is a risk that all the good work of the last year could be undone by dangerous, distracting and demoralising explosive outbreaks.

We recommend that an intensive 'Polio Watch' be established in the countries at highest risk of a polio outbreak. We further recommend that the responsible WHO Regional Offices should issue within the next month an action plan for strengthening vaccination coverage and surveillance in these areas.

AT A GLANCE

Many polio-free countries vulnerable to new importations; complacency is creeping in

End-2012: What Happens Next?

The Programme ends 2012 in a complex position. It has made strong progress and has a great deal of support. But it said that it would stop polio transmission globally by now, and has failed to do so.

The Programme has started to develop what it is calling a '2013-18 Endgame Strategic Plan'. The IMB saw an early draft of this document at its meeting. The IMB had reservations about this first draft. It lacked clarity and could have been characterized as a plan to eradicate the oral polio vaccine, not the polio virus. A week after our meeting, an updated plan was presented orally to SAGE – this version appears to be an improvement on what we saw.

To achieve the eradication goal that has so far eluded it, the Programme needs an exemplary plan. This needs to set out:

A convincing case for a US\$5.5 billion investment

A credible plan, and particularly one that is to be backed by a US\$5.5 billion investment, must convincingly show how the Programme can achieve in the next two years what it failed to deliver in the last strategic plan period. This cannot just be about optimism. Nor can it allow anyone to take the money and continue to underperform. The reasoning needs to rigorously set out about how and when polio virus will be eradicated.

Modeling has been carried out to establish how rapidly the current trajectory of programmatic improvement could lead to transmission being interrupted. Much of modern infectious disease control in human and animal populations is based on statistical modeling. Modelling is not simple extrapolation from the current position to a solid prediction of what the future occurrence of the disease will be. There are uncertainties. Some of these can be built into the model, but there are unforeseen and unpredictable events that can completely change a disease trajectory but cannot be built into a model.

A model is particularly dependent on its assumptions. Making different assumptions, different statistical experts will construct different models and as a consequence make different predictions. It is healthy to allow these different appraisals to be openly, scientifically debated and rigorously peer reviewed. This has not yet happened.

The Programme may want to build its case on this modeling, or it may not. If it does so, this model needs to be subject to open debate and review. If it does not, its case must be built upon an alternative foundation. The Programme cannot validly refer to the existing model as if in passing, yet imply that it should provide a sound foundation of confidence.

The Programme's narrative is naturally compelling: polio is a dreadful disease ... we can rid the world of it ... we must do so. But such a narrative is incomplete. What are the full projected benefits of achieving eradication – human, economic, and developmental? Equally importantly, what is the cost of failing to do so? These things must be set out and quantified.

AT A GLANCE

Eradication, a once-in-a-generation opportunity, demands a once-in-a-generation plan

A request for billions needs a firm investment case

No modeling is certain – margins of error must be explored

Rigorous peer review is the standard

Build the narrative – the benefits of eradication are many

Ultimately, polio eradication is a highly complex goal with no true precedent. Nobody can prove that it will be achieved. The Programme's loyal donors have the insight to know this, and the vision to cope with the uncertainty. But this cannot preclude rigorous analysis of the facts as they are known. This strategic refresh is the opportunity for everybody to test and hone their thinking and, by making the process an inclusive one, to establish a firm basis of support. We welcome the fact that this has started, but it has further to go.

Clear terminology

As the plan evolves, there is no room for ambiguity about the key definitions. The terms 'endgame', 'legacy' and even 'eradication' mean different things to different people. Their meanings to the Programme need to be precisely set out.

Unambiguous statement of vaccine policy with rationale

The relationship between the GPEI and routine immunization has long been an area of complexity and tension. The latter sometimes has little respect for the style and methods of a so-called 'vertical programme'.

Polio-funded staff support routine immunization activities. In some areas, routine immunisation would fall apart without them. On the other hand, polio campaigns can divert attention away from routine immunization. Every dose of polio vaccine that is given through routine immunization benefits the eradication initiative. On the other hand, polio-focused campaigns have been central to the eradication strategy and it is difficult to concentrate on both these and on routine immunisation.

The GPEI must decide where it sits, working through this complexity. There are essentially two options:

- The first option is for the GPEI to focus on achieving polio eradication primarily through a continuing focused vertical programme, partnering with routine immunisation as appropriate to the local context and planning the legacy with care.
- The second option is for the GPEI to be more ambitious about how it can contribute to bolstering routine immunisation, and to integrate, or work in close coordination, with national immunization programmes to maximize the contribution that the GPEI is able to make.

The GPEI needs to be absolutely clear – internally and externally – about which of these options it is pursuing. It cannot aspire to achieve the second unless it truly has the budget required and works in close coordination. The options appraisal needs to be open and rigorous. There needs to be an objective analysis of what potential the GPEI has to contribute to routine immunisation strengthening with its largely vertical campaign approach, and the funding and resources available to it, to avoid the danger of exaggerating the positive impact that it will be able to have.

As well as this, there are important policy issues about the cessation of trivalent oral polio vaccine use, the use of injectable vaccine, and so forth. These are complex issues: clear communication is crucial, and the timeline needs to be clear.

AT A GLANCE

Uncertainty is not to be feared but robustly explored

Clear definitions are needed

Polio eradication and routine immunisation: frame the policy argument once and for all

Agree the budget to match

Plan for continual tactical improvement

The strategy for reaching eradication needs to be grounded in the deepest possible understanding of what the barriers are and how serious they are. The Programme cannot be afraid to set these out in full. They provoke questions that do not all have complete answers, but those answers will come much better if the questions are clear and open than if they are not.

The Programme has clearly set out the current bundle of tactics that are implemented in the endemic countries. The strategic questions here are how this implementation will be accelerated, and how further tactical improvements will be constantly, innovatively developed and rapidly diffused.

Contingency planning

The Programme operates in a complex and uncertain environment. It is right to set out a finite 'Plan A'. But, given the uncertainty, alternatives need to be considered too. What would happen if two endemic countries stop transmission, whilst another makes little progress? What would happen if funding falls short? These scenarios are realistic and merit open consideration.

Programme provenance, governance and accountability

Afghanistan, Nigeria and Pakistan must spearhead the final charge towards a polio-free world. A significant part of this plan should be their plan. Some people call this 'ownership'. Others talk about 'country commitment'. Others want to know about accountability. The three are intertwined. It needs to be clear why and how the endemic countries are wedding themselves to this goal.

Governance and accountability for the entire plan is key. Its design is not easy. The Programme's overall governance structure has been improved, but its operation is cumbersome and not consistent with the design of a modern strategic and operational management function. The various groups and committees absorb a lot of Programme time without being as effective as they could be. The Programme would greatly benefit from sharpening its governance structure, to ensure that key functions such as accountability, policy-making, consultation, resource mobilization and independent review, are properly but efficiently attended to.

When the strategic plan is presented to the WHO Executive Board, the document needs to make clear not just who has been involved in its development, but how they have been involved. As an important example, SAGE has provided key technical inputs but this does not equate to them reviewing every element of the plan.

Absolute focus on delivery, not aspirational goals

The Programme needs to set out the trajectory of improvement that it plans to achieve. This will require a number of metrics. Tracking missed children in the sanctuary areas is particularly important. With trajectories planned for each measure, progress can then be

AT A GLANCE

Thorough exposition of barriers is required

No-one can predict the future – be prepared

The remaining endemic countries must be key owners of the Endgame Strategic Plan

Governance needs considerable sharpening

Be clear who has approved what

monitored. This will maintain focus, momentum and accountability. At any point in time, it should be possible to say where progress is on track, where it is not; and if it is not, by how much. This is a fundamental part of not just reaching for a goal in the distance, but setting out the path to get there. When these graphs are produced, people will naturally look to the end of the curve – they will want to know when transmission will be interrupted. But it is of far more use to track the trajectory than to aspire to reach the end.

Stopping transmission is paramount

The Programme wants the 2013-18 strategy to draw together every aspect of work necessary to complete eradication, and to consider what happens beyond. This is a great strength because the various stands of work (stopping transmission, the vaccine switch, certification and legacy) are closely intertwined. As one looks at all the pieces of the jigsaw puzzle, a real risk becomes apparent. In recent months, the Programme has been able to focus its strategic energy on stopping wild virus transmission in the small number of endemic countries. This has been enormously beneficial. The activities set out in the new plan require the Programme to broaden its focus, in both geography and scope. This must not dilute the energy of stopping wild virus transmission - the goal that has long proved elusive. Through appropriate structuring and manpower, the Programme must make sure that it retains the necessary level of prominence at the global level and in the affected and at-risk countries.

Three final observations:

- This Programme has learned and developed a great deal since its 2010-12 Strategic Plan was launched three years ago. The next strategy must be ambitious in its drive to improve on the last.
- The Programme has an important and exciting story to tell – it must do so compellingly.
- Clarity and transparency must be the name of the game, as the plan is both developed and put into practice.

AT A GLANCE

Monitor the whole path, not just major landmarks along the way

Don't forget the day job – stop transmission in endemic countries



Conclusions & recommendations

Conclusions

With just weeks remaining, the Programme is certain to fail in its main 2010-2012 Strategic Plan target of interrupting polio transmission globally by the end of 2012. The impact of this failure has been mitigated by a final strategic plan phase of high achievement: India and Angola polio-free for over a year; DR Congo close behind; numbers of cases in Afghanistan, Chad and Pakistan down on last year; globally the number of polio cases at their lowest level in history. Only Nigeria has clouded the picture but there are encouraging signs here with strong new policies in place and actions in train. The IMB is heartened that global and country programmes have acted on its guidance set out in five reports.

To all appearances the polio virus is making its last stand, in 0.2% of the world's land surface. The uninformed observer might conclude that it had no chance of survival. But those who have targeted the polio viruses for three decades to make it extinct know what a formidable foe it is. It survives for reasons that are well known. The polio virus finds friends amongst missed children, badly managed campaigns, weak data, ill-informed parents, poor political and public health leadership and resistance in adopting best practice.

There is one ingredient, a magic formula for transformation, that is still missing in the affected countries – absolute ownership. Ownership means parents demanding the vaccine, making it their mission to protect their children. Ownership means local leaders grasping the challenge of wiping polio from their area. Ownership means a critical mass in the population believing that their children can, must and will be protected through the eradication of polio. Most of all ownership is about national pride: a country determined to be a vibrant, respected 21st century nation, not one that is looked down on because it remains tainted by a disease that almost everywhere else in the world survives only in the memory of grandparents.

A new strategic plan is being prepared. It needs to be very different to its predecessors. It needs to be built on a foundation of knowledge and understanding about what the remaining barriers to polio eradication are – not just the technical elements, but the ever-important, ever-challenging 'human factors' too. It needs to be rigorous in establishing the case for why polio must and can be eradicated, and how this will be achieved. It needs to be deeply compelling, to draw in everybody in the world who can help the Programme to overcome polio's last stand.

Recommendations

This report makes ten recommendations:

1. We recommend that the International Health Regulations Expert Review Committee urgently issue a standing recommendation by May 2013 that will introduce pre-travel vaccination or vaccination checks in Afghanistan, Nigeria and Pakistan until national transmission is stopped. No country should allow a citizen from any endemic polio state to cross their border without a valid vaccination certificate.
2. We recommend that within the next fortnight, programme leaders in Afghanistan, Nigeria, Pakistan and Chad discuss their country's plan and best practice elsewhere to write, with their partners, a list of no more than five priority goals that they will achieve by the end of April 2013, circulate these goals to all programme staff, and maintain the focus and pace necessary to achieve them.
3. We recommend that an analysis be urgently commissioned to examine the relationship between the frequency and quality of vaccination campaigns, to guide programmatic decisions about the optimum interval between campaigns.
4. We recommend that every endemic country district-level task force (or equivalent) should be constituted to include a parent, representing parents of the district.
5. We recommend that every opportunity be taken to 'pair' other health and neighbourhood benefits with the polio vaccine.
6. The IMB requests a report on vaccine supply at each of its future meetings.
7. We recommend that the Programme accelerate planning to set out how the learning from polio eradication can be captured rigorously and comprehensively, overseen and funded with minimal distraction to current work.
8. We recommend that an intensive 'Polio Watch' be established in the countries at highest risk of a polio outbreak. We further recommend that the responsible WHO Regional Offices should issue within the next month an action plan for strengthening vaccination coverage and surveillance in these areas.
9. We recommend that India plans for a simulation exercise to test the readiness of its emergency response plans. We recommend that the exercise should begin, on an unannounced date in mid-2013, by selecting a sample of districts at random and carrying out real-time simulation-based scrutiny of their emergency response capability
10. We recommend that a continual live audiovisual feed should be broadcast online from the Nigerian Emergency Operations Centre, with a facility for the world's polio experts and the IMB to observe and provide input at any time.

