

Independent
Monitoring Board
of the
Global Polio
Eradication Initiative

Report

April 2011

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We are privileged to form this board, 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 aims to interrupt polio transmission globally by the end of 2012, and hence eradicate this disease from the world for good.

As a board, we recognise the intense commitment made by the bodies at the centre of this work – governments, WHO, UNICEF, Rotary, the Centers for Disease Control and Prevention, and the Bill and Melinda Gates Foundation. We recognise the essential and substantial contributions – financial and otherwise – made by each of the programme's partners. Our role is to speak with a clear, objective voice that is independent of any of these or other parties.

Each of us sits on the board in a personal capacity. We are pleased to share our first full report. This report follows our second meeting, held on March 31 and April 1 2011. The World Health Organization provided our venue, in Geneva. We will continue to meet quarterly, and will issue a report after each meeting.

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*Dr El Sayed and Dr Chowdhury were unable to participate in the meeting but endorse this report

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Introduction

The history of polio eradication is one of incredible triumph, soured by frustration at the difficulty of completing the job. The Global Polio Eradication Initiative (GPEI) was established in 1988. Its target was to eradicate polio from the world by the year 2000. Its successes over that 12 year period are well reported. Their enormity should not be forgotten:

- Polio was eradicated from three of the world's six regions
- In 1988, polio paralysed 1000 children a day. By 2000, this number had fallen below 10
- In 1988, polio was endemic in 125 countries. By 2000, just 20 remained

These achievements were impressive, but since that time progress has been more evasive. The polio virus has resolutely repelled efforts to force its incidence to zero (figure 1). This is not for lack of trying. Over the last decade, effort – and spending – has been intense.

The annual incidence of polio is now just 1% of what it was in 1988. But this last crucial 1% is proving an incredible challenge.

The challenge of the last 1%

The following question is key: does this challenging final 1% need more of the same interventions, but better? Or does it need a fundamentally different approach?

Better

By definition, the areas still infected are those in which eradication is most difficult. The easiest areas were cleared of polio many years ago. The challenge also mounts as the number of cases falls. When an area has hundreds of cases, even basic surveillance should not miss this. When there are just two cases in an area, only a highly tuned surveillance system will detect them. The virus itself compounds the challenge. For every 200 children infected with type 1 poliovirus, 199 are invisible to AFP surveillance (figure 2). So it is vital to implement the proven solutions thoroughly. The poliovirus, particularly with its current geography, leaves no room for error. We will demand excellence, because nothing short of this will complete polio eradication.

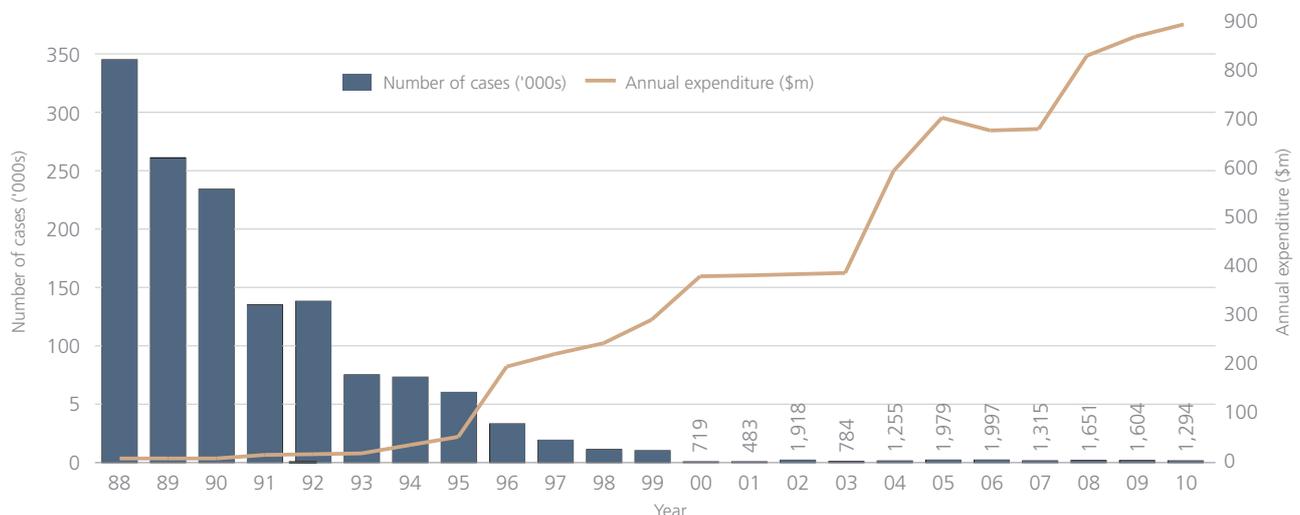


Figure 1: The Initiative has cut polio cases by over 99%, but progress hit a plateau after the year 2000

And different

Better implementation of the same strategies is not the whole solution. If it was, eradication could have been completed 5 or 10 years ago. There are fundamental differences between the areas in which the eradication effort has so far failed and those in which it has succeeded. Their communities have different understandings of health, and experiences of healthcare. They have conflict, impeding access. Their migrant populations play a powerful role in spreading the disease within and between countries, but are some of the most difficult to reach with immunisation. When immunisation days take place, they are more likely than most to be missed because they are travelling or living 'off the map'. The 2010-12 Strategic Plan takes account of many of these challenges. The GPEI has learnt greatly from them. But we will look hard to see that this realisation is truly embedded throughout. Every part of it must reflect a need to learn, an understanding that the approaches, mindsets and assumptions that so successfully eradicated 99% of polio will not eradicate the last 1%.

Urgently

The board's work, like the GPEI's work, is urgent. Beyond urgent. Fifteen months of the 3-year plan have now passed. The actions of all involved must reflect this.

Independent Monitoring Board (IMB)

The IMB exists to monitor and guide the work of the 2010-12 Strategic Plan. We have met twice. This is our first full report. At both meetings (December 2010 and March 2011), we received and discussed data and reports from WHO, UNICEF and CDC. We also met with Ministry of Health representatives from countries whose progress we judged most strategically important and/or concerning. In December we met with representatives from DR Congo, Angola and Pakistan. We conducted follow up discussions with each of these in March. In March we also met with representatives of Chad, Nigeria and India.

In this report we:

1. Evaluate progress towards each of the Strategic Plan's global milestones
2. Outline our view of the critical success factors for global polio eradication, and describe their current status
3. Analyse the progress of each country whose representatives we have met, including evaluating the content and implementation of their corrective action plans where these are needed

We provide recommendations throughout.

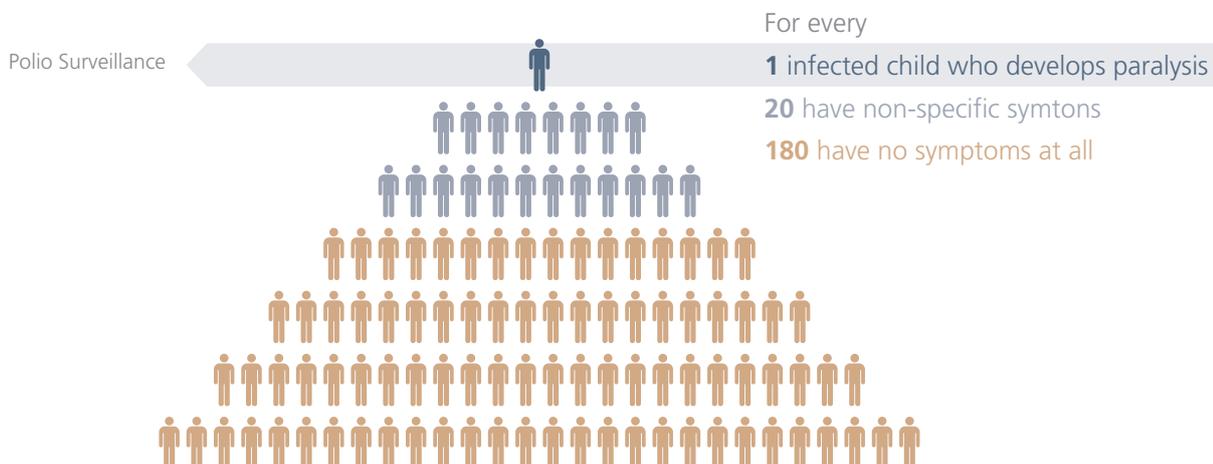


Figure 2: The clinical manifestation of polio greatly increases the challenge of its eradication

Global assessment and milestones

The GPEI has traditionally placed considerable focus on countries with endemic infection. These infections have been reduced in number considerably since 2000. But the number of countries with active infection has shown little overall reduction (figure 3). We welcome the increased emphasis that the 2010-12 Strategic Plan gives to non-endemic countries.

We divide our assessment into five groups of countries:

- Endemic countries making progress – India, Nigeria and Afghanistan
- The endemic country with increased cases in 2010 - Pakistan
- Countries where re-importation has led to ongoing transmission
- Countries with outbreaks
- The rest of the world – where polio re-importation must be avoided

We rate progress against each of the global milestones set out in the 2010-12 Strategic Plan. We rate each as 'on track', 'at risk' or 'missed'. When a milestone date has passed, judging whether or not it has been achieved is straightforward. In advance of the milestone date, it requires more consideration. We draw upon the GPEI process indicators and risk assessments, our discussions with partners and countries, and our own deliberations.

Endemic countries making progress: India, Nigeria, Afghanistan

There has been some impressive progress in these countries. In 2010, the number of polio cases fell by more than 90% in both India and Nigeria (figure 4). In Afghanistan, it fell by 34%.

In the endemic countries, ongoing infection has long been driven by particular geographical reservoirs of disease – in Uttar Pradesh and central Bihar, India, for example. The need to interrupt transmission in these areas is central to each country's chance of achieving national eradication. Examination of these reservoirs' recent status reveals good news. In almost half of them, no transmission has been detected for the last six months (figure 5).

We met representatives of India and Nigeria during the course of our meetings. We comment on each of these countries in more detail later in this report. We note that just one case of wild polio has been reported from Afghanistan in the first quarter of 2011, compared with seven in the same quarter of 2010. We will invite representatives of Afghanistan to our next meeting.

We are asked to judge whether the GPEI is on track to stop transmission in two of the four endemic countries by the end of 2011. Unfortunately we believe not.

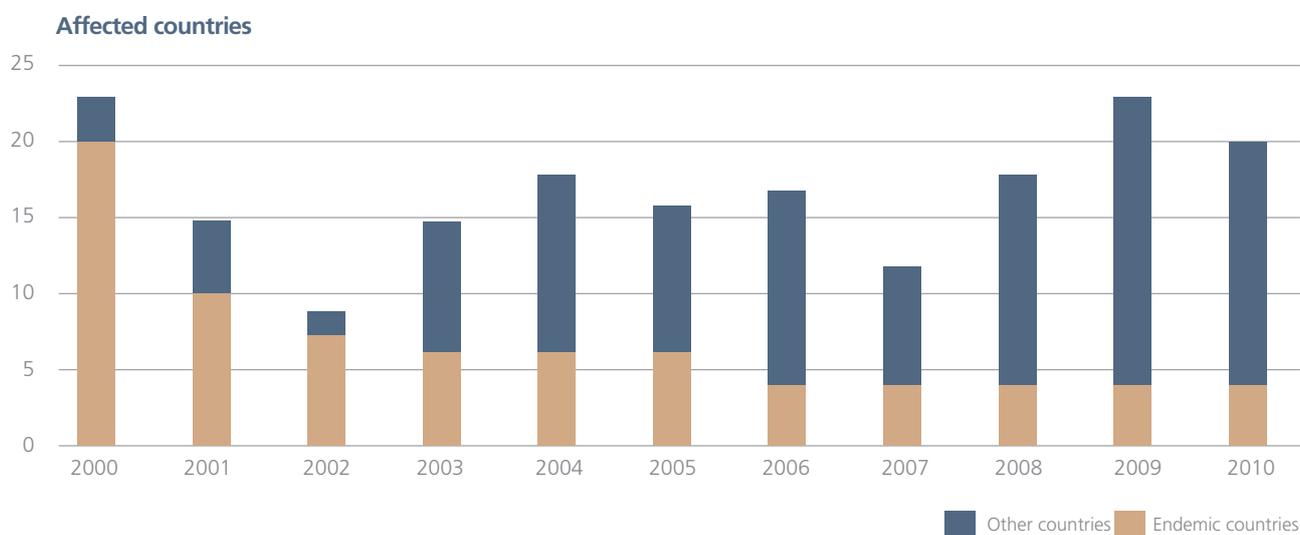


Figure 3: The number of endemic countries has been substantially reduced, but no fewer countries have polio infection

Whilst 2011 represents the best chance yet for India to interrupt transmission, we see no second country truly on course to do so. We would strongly urge Nigeria to fully commit to becoming this second country. It has the potential to be. But, as we discuss later, this will need some key problems to be tackled and a further upsurge in focus and intent.

Milestone

By end 2011, cessation of all polio transmission in at least two of the four endemic countries

At risk

Endemic country making little progress: Pakistan

Progress in Pakistan is disappointing. It was the only endemic country to show an increase in cases last year. Pakistan risks being the last to interrupt polio transmission, and jeopardizing the efforts of other countries to do so. We discuss its progress in more detail later.

Countries with re-established infection

By the end of 2010, the GPEI aimed to stop transmission in all four of the countries in which it had become re-established. These countries were Sudan, Angola, DR Congo and Chad.

This milestone has been missed. Angola and Chad have both had cases in 2011 confirmed as being related to cases in 2010. DR Congo has also had cases in 2011. Genetic confirmation is awaited, but it is highly likely to have also missed this milestone. Sudan, the fourth, has not reported any cases since 2009.

We spoke to representatives of Chad, DR Congo and Angola in detail and report our findings later. These three countries with re-established infection are strategically vital. Infection has historically spread from each of them to its neighbours. Progress must be made rapidly, if these countries are to avoid jeopardizing the GPEI's ultimate goal of interrupting global transmission by the end of 2012. We will continue to monitor progress in each country closely until it has succeeded.

The 2010-12 Strategic Plan recognized the need to heighten the focus given to these countries. This realization has not been enacted to the necessary extent. **We recommend that no real distinction should be made between the countries with re-established transmission and the countries with endemic infection.**

Milestone

By end 2010, cessation of all 're-established' poliovirus transmission

Missed

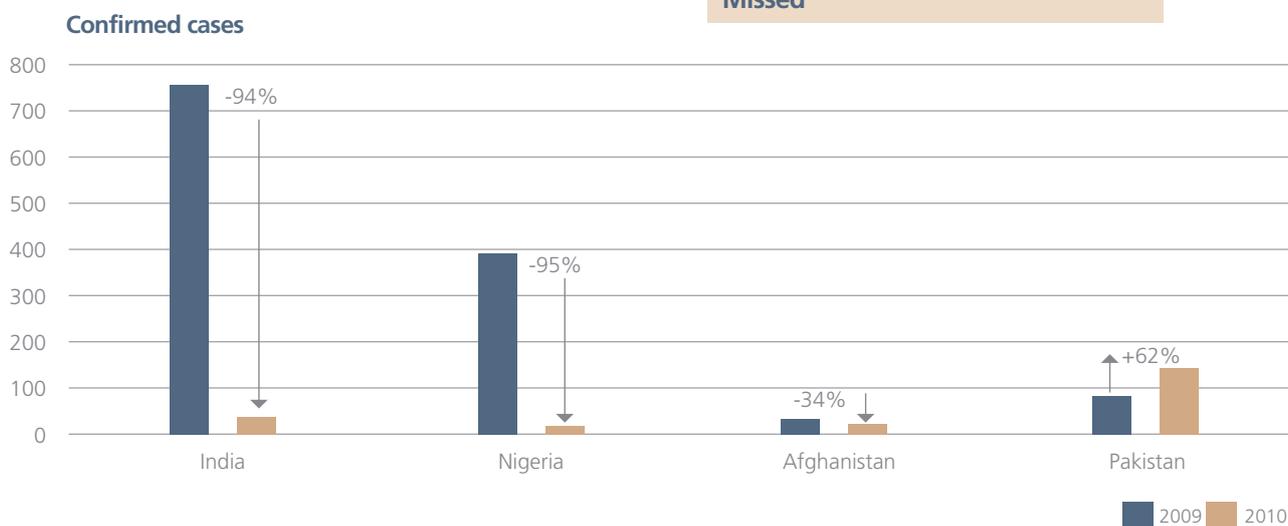


Figure 4: India, Nigeria and Afghanistan made considerable progress in 2010. Pakistan lags behind.

Outbreaks

Polio activity outside of the countries with established infection needs to be tackled rapidly. These outbreaks are more likely to occur in countries with low routine vaccination levels, and therefore risk spreading. The Strategic Plan's initial aim was to stop all outbreaks that started in 2009 by mid-2010. It recognizes that subsequent outbreaks will occur, and aims to stop these within six months of confirmation of the index case.

Outbreaks in 2009

Outbreaks occurred in 15 countries in 2009. It is a considerable achievement that all of these outbreaks appear to have been stopped by the end of June 2010. Indeed, the most recent case in this group was in Mauritania in April 2010.

We congratulate the GPEI on the fact that this, its first milestone, is on track.

Milestone

By mid 2010, cessation of all polio outbreaks with onset in 2009

On track



Figure 5: Fifteen primary reservoirs remain (reservoirs of indigenous virus in endemic countries). In seven of these, no polio cases have been detected for at least six months.

Outbreaks in 2010/11

Since the start of 2010, there have been 14 outbreaks (figure 6). Twelve of these started more than 6 months ago, and the evidence so far suggests that none of them has lasted for more than six months after the confirmation of the first case. This is strong news. This milestone is on track.

Milestone

Cessation of new outbreaks within six months of confirmation of index case (ongoing)

On track

*We note that since we met in March, two new cases of type 3 polio have been reported in West Africa – in Mali and in Cote d'Ivoire.

The rest of the world: maintaining polio-free areas

No global milestone monitors this, but it is key. Two specific 2010 outbreaks merit particular comment.

With 458 cases, the 2010 Tajikistan outbreak was the largest seen globally for five years. The type 1 virus was first detected in the country in April. The response appears to have been well coordinated. The outbreak was stopped within six months. This was the first outbreak to occur in the EURO region since it was certified polio-free in 2002. We note that a 2009 regional risk assessment had identified Tajikistan as being at high risk of a poliovirus outbreak.

We were astonished to hear of a crucial delay in the response to importation of poliovirus into Congo. By 11th October 2010, a neurologist in Point Noire had noticed a cluster of six AFP cases and informed authorities. An outbreak investigation did not start until 26th October 2010. Despite the presence of polio in neighbouring countries, there seems to have been a delay in recognising the disease in Congo. When the outbreak investigation got underway, the response was rapid and effective. But this crucial delay cost lives.

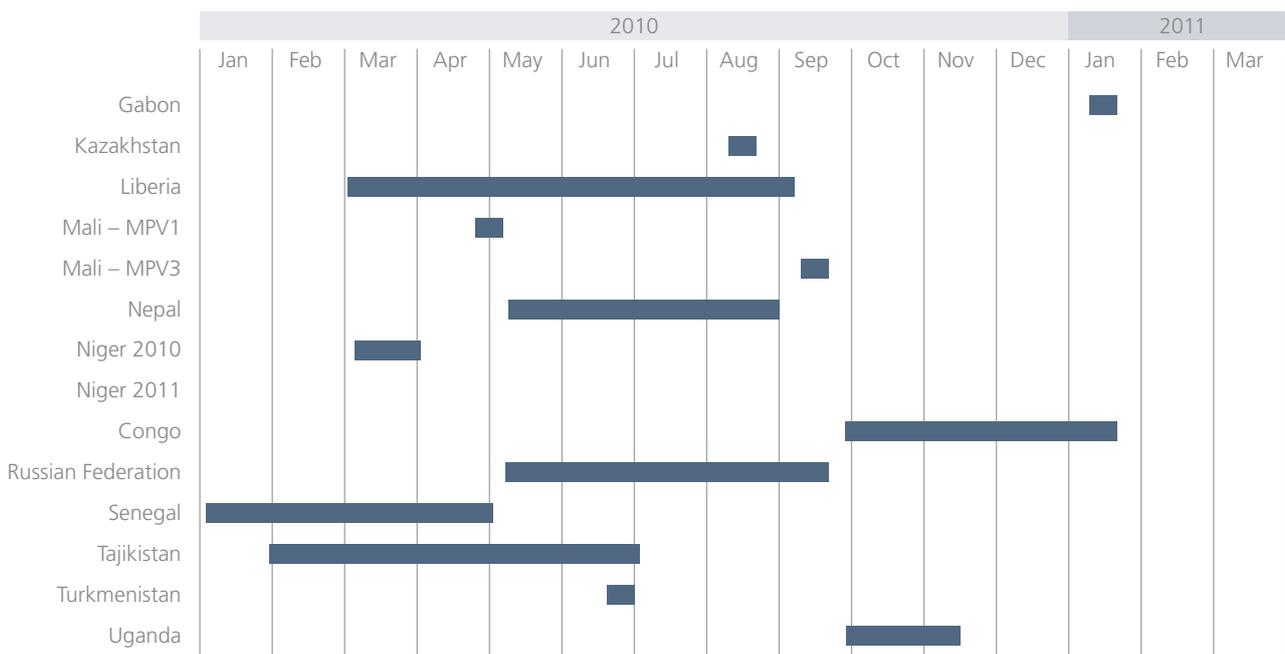


Figure 6: So far, no outbreak has lasted more than 6 months after confirmation of the first case

The outbreak had an unusually high case fatality rate, of approximately 35%. It had other unusual features, disproportionately affecting males and those between the ages of 15 and 30 years. We do not feel that we have yet seen a proper explanation of the delay, and particularly of WHO's involvement. This occurrence highlights the need for systems that maintain a high degree of suspicion when polio-like cases arise in polio-free areas, and that have a low threshold to trigger rapid investigation.

CDC has started some valuable work to summarise the risk assessment of polio-free countries across WHO regions. We would welcome CDC maintaining a leadership role in supporting WHO regions to strengthen and standardize these risk assessments. At each subsequent IMB meeting, we would ask to receive updates of this risk assessment from each WHO region, together with a synopsis of actions planned for countries that this process highlights as 'high risk'.

Global cessation of transmission by end 2012

We judge progress towards this milestone based on the earlier milestones and on our wider observations. Unfortunately, we believe that this milestone is at risk. The GPEI has achieved some outstanding progress over the last year. However, our main concern is that we do not observe a true escalation of commitment commensurate with the ambition of completing this task in the next 20 months. Polio eradication will not be completed if it is in any sense a secondary priority. In the next section of this report we make observations and recommendations relating to a number of areas, but one is particularly important. If polio eradication receives the priority attention of leaders, this will catalyse success – a success that is both entirely feasible and desperately needed.

Milestone

By end 2012, cessation of all wild poliovirus transmission globally

At Risk

Critical success factors

The factors critical to the GPEI's success can be summarized concisely:



The factors that will cause the GPEI to fail can be stated equally directly:



A single weak link can fatally undermine the GPEI's goal. We consider the current status of these seven critical success factors in turn.

1. Polio vaccine capability is a great strength

Until 2005, oral polio vaccine was trivalent, immunizing against all three types of polio. It was disproportionately effective against type II polio. As a result, wild type II poliovirus transmission was interrupted. Two monovalent vaccines were introduced in 2005, one acting solely against type I polio, one against type III. Each of these was more effective than the trivalent vaccine, but they could not be given together. Several areas experienced the problem of alternating epidemics – they could successfully tackle one polio type, but the other would then arise. The introduction of a bivalent vaccine – effective against type I and type III simultaneously – is therefore a very important advance. The GPEI introduced this vaccine in 2009, far more quickly than many thought possible. We believe this is the strongest of the seven critical success factors, and congratulate the GPEI for it.

We welcome ongoing work examining the role of Inactivated Polio Vaccine (IPV) and vaccination strategies beyond end-2012. These are not a priority focus of the board at this time, though they are clearly important.

2. Vaccination strategies are generally strong, though we urge greater focus on demand

The GPEI has introduced many innovative approaches to improve the population coverage achieved on immunization days. Few of these individual approaches are technically complex. For example, children who have been given the vaccine have a finger marked to indicate this. Houses that have been visited by vaccinators are annotated with a chalk mark on the front door. Detailed area maps are used to microplan exactly which houses will be visited by which vaccinating team. Though none is individually complex, together they are remarkably effective.

The GPEI now has strong knowledge of what makes for a successful immunization campaign. This knowledge is now being thoroughly applied in many, but not all, locations. The strategies have proven themselves against incredible challenges. In western Uttar Pradesh, India, the population is dense and constantly changing. The virus is transmitted with unmatched efficiency. It is accepted that nothing less than 95% coverage on immunization days could interrupt viral transmission. Through persistent application of the basic principles, this has been achieved. The area has not had a case of type I polio for over a year.

Five key features of excellence in vaccination campaigns

- Wholehearted involvement and commitment of local leaders
- Quality microplanning of vaccination days
- Motivated mature vaccinators
- Understanding of, and response to, parents' perspectives and needs
- Truly independent monitoring

These strategies have proven their worth. Where problems arise, this is because they are being incompletely applied. We highlight specific concerns later. Authoritative local and country level leadership is key.

The 2010-12 Strategic Plan set out a timetable for Supplementary Immunisation Activities over the three year period. This plan is modified on an ongoing basis, on the basis of evolving epidemiological and operational needs. We have no current concerns with these changes. We will continue to monitor this. At our quarterly meetings, we would ask for an explanation of any changes that are made. Neither funding nor operational issues can be allowed to impede the implementation of these activities.

We observe that the GPEI's focus on the supply of vaccines remains greater than the focus on demand from parents, on understanding and working with the beliefs, structures and needs of communities. Though there has certainly been strong work in these areas, we still see them as somewhat under-developed and under-focused in comparison to the supply side. It is striking that routine global communication indicators are only recently being introduced, whereas global supply side data are plentiful. The most memorable setbacks have arisen from demand-side, not supply side, problems.

We offer some specific observations about the communications indicators as they currently stand. First, there is currently no indicator to monitor the process of strategic planning for high-risk groups. This would seem to be important in the final stages of polio eradication. Second, it is important, particularly in high-risk areas, that oversight bodies receive and use social data for communication planning. We welcome the fact that a process indicator monitors this. However, this monitoring currently relies on self-reports. This risks masking gaps and deficiencies. An independent verification mechanism would be useful.

When complex operational or interpersonal difficulties arise in local communities, these are not readily visible from the 'bird's eye view' that a programme of this size naturally adopts. The 'worm's eye view' of realities on the ground is equally important. The current approach to communication management information does not yet achieve the ideal 'worm's eye view' that would concisely capture both successes and challenges on the demand side, so that the GPEI can learn from the successes and tackle the challenges.

Efficiencies can be gained and demand generated through optimising synergies with the delivery of other basic services to the same population groups. At the operational level, where staff involved in polio eradication are also engaged in routine immunisation and basic service delivery, it is essential to maintain motivation and commitment to polio eradication, and to ensure that all staff have the communication skills to support community mobilisation and demand for stopping transmission of polio virus. Furthermore, closer collaboration with the animal health sector (e.g. in Chad and Afghanistan) may promote higher coverage in SIAs and cost efficiencies.

We recommend:

That the high-level approach to communications management is urgently refined, to provide meaningful insight into areas of particular excellence and areas of developing concern.

3. Surveillance standards are clear and are applied well in laboratories. Field surveillance is weaker in some areas

The Global Polio Laboratory Network is a credit to the GPEI. This asset is also an important part of the GPEI's legacy beyond polio eradication. Laboratory standards are clear, training is strong, and systems are generally working well.

The GPEI's approach to surveillance is characteristic of a mature programme. The key indicators are well-known. Data streams generally function strongly.

Five key features of excellence in surveillance

- Web of contacts watching out for cases in key locations
- Full rapid case investigation
- Quick and safe transport of samples
- Gold standard laboratory practices
- Transparency in information sharing

The most challenging aspect of surveillance is in the field. Whilst progress continues to be made, it is here that key gaps remain. We welcome the fact that the 2010-12 Strategic Plan set a tough Major Process Indicator for the end of 2010. This appropriately

underlines the vital role that quality surveillance plays. Without surveillance, there can be no directed response. As the global eradication goal draws nearer, the ability to rapidly detect any outbreak increases in importance.

Unfortunately, this Major Process Indicator was

missed in most countries. Gaps in the quality of field surveillance continue to pose a risk.

The approach to strengthening field surveillance is well-established, but needs acceleration. In particular, we note delays in carrying out surveillance desk reviews in the countries with re-established transmission.

Surveillance		
Process indicator		
By end-2010, Non-polio AFP rate >2 achieved at sub-national level in all endemic, re-established transmission, and "WPV importation belt" countries	Endemic countries	Not achieved (2 of 4 countries achieved)
	Re-established transmission countries	Not achieved (3 of 4 countries achieved)
	"WPV importation belt" countries	Not achieved (6 of 19 countries achieved)

4. The GPEI's management is led by impressive epidemiological data streams, but this perspective must not over-dominate

The GPEI has evolved to such a level of sophistication that it now has global polio epidemiology data in near real time. Well-defined, valid indicators track several quantitative aspects of vaccination and surveillance performance. Considerable attention rightly focuses on these data streams. We commend the programme highly for this.

The GPEI and we, the IMB, must be careful that these data do not distort our perspective. Our understanding of some important parts of the GPEI is less clear:

- How many individuals are working towards polio eradication from each partner? Where are they? What are their roles? Are they motivated, supported and performing?
- Through the 'worm's eye view', what practices at a micro-level catalyse high quality surveillance and vaccination? There are likely to be small, seemingly insignificant micro-behavioral communicative practices of frontline health workers and others that deliver phenomenal outcomes building community trust and compliance, and overcome the OPV "fatigue. Who and where are these positive deviants? What positively deviant micro-behaviors do they specifically engage in?

Whilst these insights exist to an extent, they have been relatively under-emphasised in the view of the programme that we have seen so far. At subsequent meetings we will ask, without overburdening, for data that view the GPEI through these different lenses. No single view can tell the whole story. The IMB can play a useful role by seeking a different view from that which the GPEI has come to value most highly.

We must also ensure that we – and the GPEI – learn from valuable individual perspectives at all levels.

We recommend:

That the IMB, with independent support, should rapidly develop a mechanism to capture the perspectives and experiences of those closest to the front-line of polio eradication

That members of the IMB and its Secretariat should visit relevant areas, activities and meetings

5. Staffing problems should be an avoidable issue

As discussed, human resource metrics are not part of the core data currently provided to the IMB. We have three main early concerns, which we wish to explore in more detail.

There are certainly talented and dedicated people at every level of the GPEI. However, we are concerned to hear initial reports of less strong performance in some key areas. Polio eradication needs the best staff that it can get – in each country, and in each of the partner agencies. Those whose leadership skills may not be suited to the rigor, assertiveness and inspiration required in the eradication programme may nevertheless be in key positions. This can create great difficulty because of a fear of offending the individual or the political system. However, the programme is too important to allow a square peg to sit in a round hole purely because of sensitivities and expectations.

We also hear concerns about delays in getting suitably qualified people to areas in which unexpected problems occur.

Equally, some posts are unfilled. This is not compatible with a desire to eradicate polio in the coming months. Some posts may not be easy to fill – but polio is not easy to eradicate. Ways must be found.

We think it inappropriate to publish concerns that rest with specific individuals in this public report. But it is vital that action is taken. Where we have such concerns, we are contacting the relevant employing authorities directly.

We recommend:

That partners give polio eradication true operational priority status, enabling a limited number of staff to be seconded from other geographies and/or programme areas to places where gaps or concerns arise

6. The current funding gap is the single greatest threat to the GPEI's success

Without sufficient funding, the GPEI cannot succeed. None of the budgeted activities are optional. Insufficient funds are currently pledged. We are pleased to note that an additional \$55m has been

contributed since our December meeting. However, as of 31 March 2011, there is a funding gap of US\$665 million (figure 7).

Eradicating a disease from the planet is far from cheap, but the economic case has been made conclusively. The net benefit has been quantified as \$50 billion dollars over the next 25 years.

We recognize the substantial contribution that the GPEI's funding partners already make. We must urge current and new funding partners, particularly the richest countries of the world, to urgently consider contributing further funds. We understand that most of the funding gap in 2011-12 is due to a decline in contributions by G8 governments. All WHO member states have decided together to eradicate polio. Funding eradication ought to be a shared responsibility to which each member state contributes. All countries will benefit when eradication is achieved.

We would also ask that funding partners look at means to optimise the flexibility with which their contributions are made to the GPEI. It is apparent that highly earmarked funds can impede cash flow control and cost control. Surveillance is somewhat less tangible than vaccination, and is therefore less appealing to funding partners. Yet surveillance underpins the rest of the GPEI. However strong vaccination may be, only surveillance can direct where vaccination should be directed. Surveillance gaps as a result of funding shortfalls could be disastrous.

It is also incumbent upon the GPEI to ensure that its funds are spent with the utmost care. We have no evidence to suggest otherwise, but would reflect that particular effort here is attractive to funding partners. We must maintain an explicit awareness of any activities that are being deferred or impaired due to funding gaps. At our next meeting, we will ask to be briefed on both of these areas. First, on what measures have been taken to ensure cost-effectiveness. Second, on what activities, if any, are being directly impacted by a shortfall in funding.

\$665 million is a large amount. It gives us grave concern. But relative to what has already been spent, it is a small amount. Relative to what it can achieve,

Critical success factors

it is a small amount (figure 8). The global community spends five times this amount every day on its military. It would be tragic and pathetic if this amount cannot be found to achieve this global public good.

2010-12 funding

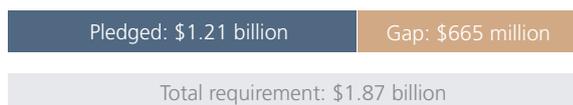


Figure 7: The current funding gap is 36% of the total 2010-12 requirement

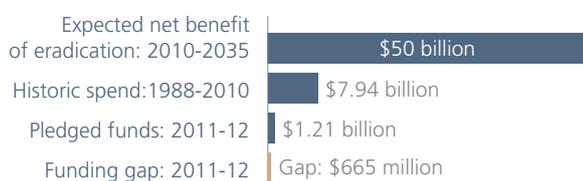


Figure 8: The \$665 million funding gap is small in comparison to both the Initiative's expected benefit and the costs already incurred

7. The GPEI needs greater priority focus of leaders. Completing the eradication of polio is a global health emergency

Completing the eradication of polio is not widely recognized as a global good, and therefore a global health responsibility. Polio eradication is now one of many causes competing for development funding and attention. Unfortunately, we do not see polio eradication being given the true priority and urgency that it needs, with clear expressed and demonstrated will to get the job done by all WHO member states.

Polio eradication does not enjoy a sufficiently high profile amongst the public, or even amongst the relevant professional communities. By vastly suppressing the number of polio cases in the world, the GPEI is in some sense a victim of its own success. Global levels of polio are so low that the disease is not widely visible. In the richer countries of the world, it is a distant memory. This has even led some to believe that polio eradication need not be a priority – that polio can simply continue at its current low levels. This is incorrect. Pulling back from polio eradication would offer two choices – continue to spend large amounts to maintain a low level of infections, or spend smaller amounts, and see the disease take hold widely once more. Neither choice is a good one when the option of eradication exists.

In 2008, governments of the world called, through the World Health Assembly, for a new strategy to eradicate polio. In response, a feasible strategy has been developed. We now call upon each of them to lend this the global backing that it needs and deserves. To eradicate polio from the world would be a triumph. To fail now would be a disaster. The need to interrupt polio transmission before the end of 2012 merits treatment as a global health emergency.

A heightening of commitment must be led by the organizations at its core. We commend Rotary International and the Bill & Melinda Gates Foundation. Both organizations view polio eradication as their number one priority. We recognize that every office of every agency has multiple competing priorities. We hear evidence that in some country and regional offices, polio is not receiving the priority focus that those at the top of the agency might wish it to receive. We fear that if eradication is not an absolute priority in word and in deed, it will not occur. We would ask the leaders of all of the partner agencies to ensure that they are communicating the importance of polio with maximum clarity.

We recommend:

That the World Health Assembly in May 2011 considers a resolution to declare the persistence of polio a global health emergency

That partners explore whether polio eradication could validly and usefully be recognised as a global health responsibility, positively altering the nature of the financial and political commitment shown by the governments of the world

That the leaders of each GPEI partner consider, in collaboration, how they can optimally allocate their own time and attention to communicate to staff at all levels that polio eradication is their urgent number one priority

That the leaders of WHO, UNICEF, CDC, Rotary International and the Bill & Melinda Gates Foundation Global Health Program speak in person or by teleconference every quarter until

progress towards 2012 interruption is back on track, using these opportunities to ensure that their support for polio eradication is optimized between agencies

We pledge, as individual members of the IMB, that we will each seek to engage with the global health and donor communities through speaking and media engagements, to raise the profile of polio eradication

Country assessments

We invite countries of most strategic importance and/or at risk of missing eradication milestones to each of our quarterly meetings. In December 2010, we met representatives of Angola, DR Congo and Pakistan. In March 2011, we received updates from each of these representatives, and met representatives of India, Nigeria and Chad. Our main findings are reported below, country by country.

When milestones are missed or at risk, we will often recommend that a country creates an emergency corrective action plan and will monitor its quality and implementation closely.

Five features of a strong corrective action plan

- Prioritises actions, geographies and populations
- Assigns responsibility and deadlines for each key action
- Establishes clear accountability mechanisms
- Establishes implementation monitoring mechanisms
- Has political support at all levels

If a country misses a milestone, the IMB will not re-establish a target date for its achievement, but will regularly show the length of time for which the original milestone has been overdue. It should be for the country to determine the appropriateness of planning towards a specific new date, and to set this date if appropriate.

India

- Thorough systematic approach has reaped reward
- Key endemic areas appear controlled
- Slow response to 2010 West Bengal outbreak
- Sustained care and priority needed to achieve national success

India	
CDC assessment	
Immunization performance	Strong
Surveillance performance	Intermediate
Process indicators	
By end-2010, >95% population immunity to type 1 polio sustained in the permanent transmission areas of western Uttar Pradesh, and achieved in the persistent transmission areas of central Bihar	Achieved

Background

We are pleased to see considerable success in India. The country has taken a laudably systematic approach to cornering the polio virus and made a significant financial investment in polio eradication. Repeatedly, India has identified priorities, and developed explicitly focused strategy in response. Execution has been characterized by a real thoroughness.

The challenge of global eradication is highly concentrated in not just a small number of countries, but a small number of districts. In population terms, the challenge is also disproportionately concentrated amongst migrant populations. India's recent approach has reflected both of these realizations. Since 2003 80% of polio cases have arisen in areas representing just 2% of the country. In response, the '107 block plan' has been successful in concentrating available resource in these areas. An array of interventions has been targeted towards heightening vaccination coverage amongst key migrant groups.

Overall, the country's approach illustrates the factors that we believe to be key:



The factors that would constitute failure at national level have been avoided in India:



In India we see strong visible leadership at all levels. This enhances the quality of work in ways that are difficult to capture with standard metrics, but are highly valuable.

Determined visible leadership has vital effects

Responsiveness Cases rapidly reported. Samples collected and transported with speed. Vaccination campaigns organized with a sense of urgency.

Sustained energy Little evidence of the 'fatigue' that the challenges of polio can cause elsewhere

Thoroughness A realization that there is little room for error, that poliovirus will seize on any laxity in vaccination or surveillance

Current situation

The indigenous reservoir areas of west Uttar Pradesh and central Bihar remain key areas of interest in India. There has been no reported case of type 1 polio in Uttar Pradesh for over a year, despite some believing that transmission could simply not be interrupted in this area. Bihar has had just three cases in 2010. The most recent was more than six months ago.

Events in the northern corner of West Bengal give us cause for concern. The first case of an outbreak was seen there in January 2010. The most recent case was detected in December 2010. Although it appears hopeful that transmission has been interrupted in this area, it is too early to say this for certain. The fact that the outbreak continued for 12 months is disturbing.

The most recent case of polio in India was in Howrah, West Bengal, geographically distinct from the previous West Bengal outbreak. This is now a vitally important area of focus. It is appropriate that any further polio outbreak should be treated as a public health emergency, with rapid mop-up vaccination campaigns in response. National and state resources must be coordinated to rapidly terminate this chain of transmission. Transmission must be interrupted far more rapidly than was achieved in the same state last year.

Communications indicators show India's strong performance at national level. Western Uttar Pradesh and Bihar have particularly good programmes. There is vulnerability in West Bengal. For this state, as well as for any other new outbreaks in India, it

seems critical to develop a pool of staff that can be deployed or transferred quickly to support emergency outbreak response. Such teams should incorporate communication and social mobilization expertise. They should develop a minimum package of mass-media outreach and community-centered interpersonal campaigns to enable fast and accurate dissemination of information, particularly to curb rumours. The current elections in West Bengal pose a risk, particularly if there is a change in government as a result. A solid advocacy plan to engage any new leaders is vital.

There are of course other areas in India with similar characteristics to West Bengal, in which a similar outbreak could occur. We welcome the efforts that are being made to identify these areas for supplementary immunization activities.

Assessment

Celebration would be premature. There can be absolutely no room for complacency – it could be fatal. However, we are satisfied with the approach that is being taken. Government representatives clearly outlined their five priority concerns to us, with a plan to mitigate each.

We judge that the country is on track to interrupt polio transmission before the end of 2011, though this can never be guaranteed. The months of July to December have traditionally seen high levels of transmission. India has come close to interrupting transmission before, only for an upsurge to occur. Ongoing focused immunization and surveillance activities are vital. We encourage that energetic leadership be sustained at district, state and national level.

Nigeria

- Strong progress in last two years
- Important gaps in vaccination and surveillance quality
- Waning political commitment during election season
- Not currently on track for end-2011
- Strong plans exist – expedited implementation needed

Nigeria	
CDC assessment	
Immunization performance	Intermediate
Surveillance performance	Intermediate
Process indicators	
By end-2010, <10% 0-dose children (per NP AFP data) in each of the 12 high-risk states	Not achieved Not achieved in 1/12 state (Kano)

Background

For almost a decade, the southern states of Nigeria have been free of polio. Progress in the north has been more difficult, particularly after widespread rumours stilted the programme in 2003.

Nigeria has made impressive progress over the last two years. From 2008 to 2009, the number of cases of polio fell by 50%. In 2010 there were just 21 cases – a 95% reduction from the previous year.

There have been accompanying year-on-year declines in the number of local government authorities (LGAs) affected. These successes reflect a number of operational improvements. The signing of the 'Abuja commitments' in February 2009 was particularly important. With this, state governors pledged ongoing personal and active leadership of polio eradication activities including meeting with LGA chairmen and with traditional leaders.

Current Situation

Such progress creates an opportunity to interrupt transmission for good in 2011. This is an historic opportunity, but the window of opportunity is limited. Unfortunately, all is not entirely well. Infection persists in the northwest of the country. The persistence of type 3 polio, in spite of multiple SIA rounds, is a cause for concern. Type 3 virus is somewhat easier to interrupt than its type 1 counterpart. Its ongoing transmission calls into question the quality of the SIA rounds. Eleven of the twelve northern states achieved the Major Process Indicator set for 2010. The state of Kano did not. Here, 15.9% of children had received no doses of oral polio vaccine. Just 39% had received 3 or more doses – a worrying immunity gap. Despite rounds of tOPV immunisation, ongoing circulation of vaccine-derived poliovirus (VPDV) in Kano and elsewhere also points to gaps in the quality of SIAs.

There are gaps in surveillance quality too. Several orphan viruses were detected in 2010, demonstrating that transmission had been missed.

The completion of the Abuja commitments is monitored every quarter. This monitoring showed severe slippage during 2010. In the fourth quarter, just 26% of governors were personally leading polio eradication activities, down from 53% in the first quarter. Imminent elections are likely to have been an important factor in this.

Strong progress has been made on communications in Nigeria. There are high levels of awareness of polio campaigns. Social data are increasingly being used for communication planning in high-risk areas. The use of religious and traditional leadership to mobilize communities is effective. However, we note that a national mass media strategy for polio communications was developed but seems to have not been implemented. A coherent mass media strategy is essential to standardise messages and ensure maximum reach, particularly to high-risk groups in the north where the campaign is most fragile.

Assessment

As it stands, we do not judge Nigeria to be on track to interrupt polio transmission before the end of 2011. Without these adverse signs, the impressive year-on-year reductions would be a great cause for optimism. These important gaps in quality threaten to squander Nigeria's time-limited opportunity. If the task of interrupting transmission is not completed in the next twelve months, there is a real risk that the virus will resurge. This could undo progress made over the last two years and make eradication more difficult to achieve. We would also note that the country is in a strategically vital position geographically. It has the potential to reinfect the countries of the Horn of Africa.

When we met Ministry of Health representatives, we were encouraged to see a clear understanding of what the problems are, together with plans to overcome these. These incorporate recommendations of the March 2011 Expert Review Committee meeting. We are pleased to see this committee plans to meet again

in four months.

Whilst recent years' performance is impressive, we would strongly encourage that any sense of celebration waits until the job has been completed. We do not get a sufficient sense of urgency. We were presented with a timetable for surveillance strengthening that stretches out over the next six months, with a desk surveillance review having only just been completed. We ask whether these activities could be achieved more rapidly given the fact that gaps in surveillance became obvious last year, and that filling them is vital.

The next three months are crucial. The country can still get back on track to interrupt transmission before the end of 2011. As well as expediting surveillance activities in particular, we would recommend that state governors be called upon to re-engage as leaders of polio eradication activities after the election is completed. An election cannot be an excuse for failure. Immediate and urgent attention needs to be given to Kano, whose performance is unsatisfactory and dangerous.

Pakistan

- Progress lags far behind other endemic countries, having markedly worsened over the last year
- Emergency action plan strongly formulated
- Plan's implementation starting to show, but needs urgent acceleration

Pakistan	
CDC assessment	
Immunization performance	Weak
Surveillance performance	Intermediate
Process indicators	
By end-2010, <15% missed children during at least 8 SIAs in every district of the Quetta area and the persistent transmission districts and agencies of NWFP and FATA	Not achieved Achieved in 4/7 districts
By end-2010, <10% missed children during at least 4 SIAs in every town of Karachi	Achieved

Background

In the past, Pakistan has fought polio strongly. Between 1995 and 2000, incidence fell 10-fold. Success in many areas of Pakistan demonstrates that the country has the technical capacity to complete national eradication. With this strong history and clear potential, the current situation is most disappointing.

As in India, polio in Pakistan is fuelled by a small number of areas and by migrant groups. Concentrated in four areas, 33 districts harbor 80% of cases. Each area has its own intrinsic challenges – conflict, poor sanitation, migration. There is tremendous population mobility – migrants, nomads, seasonal workers, internally displaced persons and Afghan refugees are all susceptible to carrying the unwanted baggage of polio infection with them as they travel.

From 2009 to 2010, polio cases in Pakistan increased by 62%. There have so far been 26 cases reported in 2011. This is double the number reported in the same period of 2010. Pakistan's lack of progress stands in contrast to the achievements of the other three endemic countries.

Current situation

The greatest challenge lies in the Federally Administered Tribal Areas (FATA). These areas were home to half of the country's cases last year. Most other cases in Pakistan and eastern Afghanistan were related to them. FATA is disrupted by conflict, impeding vaccinators' access to approximately 300,000 children. But conflict alone is not to blame, in FATA or in the rest of the country. Even in times of stability, vaccination and surveillance coverage have been poor. In Sindh, in the absence of major security problems, transmission has continued unabated.

In all 33 high-risk districts, the problem is not one of universally poor coverage. The real problem is variability. Whilst many sub-districts (union councils) perform strongly, some do not. Such weak points create the opportunities on which polio can seize. The traditional belief was that polio would die out if it could be confined to small areas. Experience now shows otherwise. It can survive for long periods and in small areas. There is little room for error. As at global and country level, the critical success factors at local level can be concisely described:

	Visible authoritative leadership	=	Successful local eradication
+	Engaged parents		
+	Responsive embedded surveillance network		
+	Thorough vaccination campaigns		
+	Truly independent monitoring		
	Uninvolved local leadership	=	Failure
or	Resistant parents		
or	Slow patchy surveillance		
or	Gaps in vaccination coverage		
or	Biased inaccurate monitoring		

There are problems with demand as well as supply. Security hampers social mobilization activities and data collection. But even accessible areas have pockets of high refusals and public concern about vaccine safety. Finding effective ways of building trust should be a priority. Widespread micro-communication planning is needed, engaging local advocates and building ownership of the program. In Khyber Pakhtunkhwa and FATA, almost 30% of mothers are not aware that OPV can be given when a child is sick. 28% do not know if OPV is safe. In the most insecure areas with the majority of cases, communities have the lowest perception of severity or threat of polio. This needs to be urgently addressed.

In January of this year, the President set out a National Emergency Action Plan. We welcome this. It focuses on high risk areas, on migrants, and on accessing children in areas of conflict. It calls for consistent government oversight, ownership and accountability for polio programme performance at each administrative level.

We are concerned that the plan is taking too long to implement. Intent on paper is not yet entirely translated into action. There are welcome developments, however. The Prime Minister's Monitoring Cell provides a means of collecting key data from all areas. We have been assured that a meeting of the Prime Minister's Task Force, chaired by the Prime Minister and attended by all heads of provinces, will take place in the last week of April. We note that the Prime Minister's office has written to the heads of a number of key provinces. We also see indications of accountability in action, with the

reallocation of Agency Surgeons when area SIA performance is unacceptably low. We would welcome the development of a clear timeline within the plan, allowing the implementation of key tasks to be tracked.

We were unable to ascertain clear information on one key issue. The ongoing process of devolution will disband the Ministry of Health and alter the chain of accountability. It is not clear how the plan will be adapted to reflect this.

Assessment

On its current course, Pakistan risks being the country that prevents global polio eradication. However, we welcome the evidence of heightening commitment. This will need to continue if the country is to successfully implement its emergency action plan in full. The clearest indicators are the number of cases and the quality of vaccination and surveillance. Only when these show sustained improvement can we be assured that the emergency action plan is being effective in bringing Pakistan towards the goal of interrupting transmission.

Chad

- Transmission ongoing: end-2010 milestone missed
- Weak surveillance system missed transmission for eight months
- This is a public health emergency
- Emergency action plan inadequate
- Requires urgent heightening of response and technical support

Chad	
CDC assessment	
Immunization performance	Weak
Surveillance performance	Weak
Process indicators	
By end-2010, <10% missed children in greater N'Djamena and in the southern and eastern WPV transmission zones during each SIA in the second half of 2010	Not achieved Achieved in 0/3 zones

Current situation

We are alarmed by the situation in Chad. More than any other country that we have seen, this is a scenario of the greatest urgency. As a country with re-established transmission, the goal was for Chad to interrupt transmission by the end of 2010. This milestone has been missed. In January 2011, the country reported a case of type 3 polio, genetically related to a virus last detected in May 2010. The country's surveillance systems had failed to detect ongoing transmission throughout this eight month period. Separately, an outbreak of type 1 polio arose in the west of the country in September 2010, following an importation from Nigeria. Type 2 cVDPV has also been detected within the last six months. CDC objectively rates Chad's immunisation and surveillance performance as weak. Independent monitoring and evaluation of SIAs in Chad shows areas where children are missed in large numbers because households are not visited. There appear to be insufficient vaccination teams, weak supervision, a lack of information provision to parents, and poor coordination at all levels. The country did not achieve its end-2010 major process indicator, which relates to the strengthening of SIAs in key zones.

Assessment

Given the seriousness of the situation, we were dismayed by the inadequacy of Chad's emergency action plan. This six page document is barely developed beyond a list of high-level objectives. There is insufficient detail about actions, responsibilities, accountability, or mechanisms for monitoring. In itself this demonstrates a lack of capacity to deal with the problem. It seriously calls into question the quality of technical support provided to the country by the partner agencies. We note the November 2010 Technical Advisory Group (TAG) report, which provides high quality and detailed recommendations. These are not yet reflected in the country's plan.

We met representatives of Chad's Ministry of Health. They recognise that they face an emergency situation. This realisation is not yet reflected at every level of government.

We recommend:

- That, with the country's agreement, CDC and WHO urgently assemble and dispatch an emergency task force to heighten the level of technical support available to the country; this should remain in situ until the situation is brought under control
- That, with high quality technical assistance, the country's action plan is urgently developed. To be effective, it should include an explicit timeline for implementation, and clearly assign responsibilities and accountability. We suggest that this plan needs to be completed within the next four weeks, at which time we would request to review a copy of it
- That partners and the Ministry of Health identify the key individuals at every level of government and ensure that they are fully briefed to recognise this as a public health emergency that requires priority attention

Angola

- End-2010 milestone missed
- Timely implementation of good corrective plan
- Polio focus now needs maintenance
- Parts of Luanda retain severe vaccination difficulties
- Surveillance quality needs close urgent attention

Angola	
CDC assessment	
Immunization performance	Weak
Surveillance performance	Intermediate
Process indicators	
By end-2010, <10% missed children in all districts of Luanda, Benguela and Kwanza Sul during each SIA	Not achieved Achieved in 5/22 districts No data for a further 8 districts

Background

Angola interrupted polio transmission between 2001 and 2005. But the country is a transport hub. Re-infection came from India – not once, but three times. Two outbreaks were stopped, but one has become established.

Twenty-seven years of civil war ended in 2002. During those years, the population was immobile. This is no longer the case. Polio now readily spreads within and beyond the country's borders. Polio from Angola has infected six other countries, DR Congo heavily. Two provinces – Luanda and Benguela - are the engines of ongoing transmission. Each densely populated, together they house 43% of the country's under-5 population. Recently, Luanda has been the primary source of cases elsewhere. In Luanda, the capital, oil and diamonds have created incredible wealth for some. The wealthy live alongside shanty towns, which still house the many. Angola is in administrative flux. Its 164 districts are progressively gaining more power and responsibility, as a process of decentralization proceeds.

Current situation

As a country with re-established transmission, the goal was to interrupt transmission in Angola by the end of 2010. The country realised in advance that it was unlikely to achieve this goal. An emergency action plan for July to December 2010 was presented to our December meeting. This set a new target date of interrupting transmission by end June 2011. It acknowledged multiple problems in vaccination and surveillance quality. Microplanning is often of poor quality. Young school children are often employed as vaccinators. They work for just a few hours on each vaccination day, and are often nowhere to be seen by the end of the third day. It is not surprising that the virus has not been stopped, despite multiple vaccination days. A number of solutions were proposed, all of which were valid.

We spoke to the Minister of Health again at our March meeting. He was able to report some good progress. High-level advocacy visits by WHO, UNICEF and the Gates Foundation had usefully heightened political commitment to eradication. A new SIA approach had been implemented in Luanda, following a 'community based strategy'. Central to this is the

Governor's assignment of responsibility for campaign quality to local administrators, working closely with community leaders and civil society. The proportion of children missed in February 2011 rounds was lower than in October 2010 (9% vs 13-16%, for Luanda as a whole). The government has committed to fund 2011 immunisation campaigns. The most recent cases have been in Kuando Kubango. A reasonably timely response campaign was carried out.

Assessment

There is no polio-specific emergency action plan after December 2010. Instead, the objective of interrupting polio transmission by end June 2011 has been rolled into a Ministry of Health Operational Plan that covers the Expanded Programme on Immunization for 2011. On the one hand, it is commendable that the Ministry is looking to build on its polio-focused work, aiming to strengthen routine immunization coverage for other vaccine-preventable diseases. Whilst we would not want to detract from that, we are concerned that the objective of interrupting polio transmission receives insufficient focus within this larger plan.

The plan concentrates on strengthening routine and supplementary immunization activities. It focuses on 34 municipalities. But for the purposes of interrupting polio transmission, it would seem that the key focus should be on Luanda. This remains the key engine of polio transmission, and a challenging area in which to maximize SIA quality. Although improvements have been achieved in many municipalities and in the province as a whole, two municipalities still have missed children rates in excess of 20%.

Also, the plan provides no real detail about how surveillance will be strengthened. Given that the surveillance system is currently assessed as 'intermediate' by objective CDC measures, this requires more focus. As a start, we would hope that a desk surveillance review, planned for some months, can be rapidly carried out. We note that Angola will conduct only one round of tOPV in 2011, which raises the potential for cVDPV.

We have several key communication concerns. There are deficits in field staff operational capacity and in campaign logistic expertise. There are few social data to guide analysis or inform planning. A communications data focal point should be recruited, to work in the Luanda planning group. Improvements

in vaccinator training are needed, to improve their interpersonal communications ability in the field.

We welcome the president's intention to engage the provincial governors in leading polio eradication. We would recommend that this engagement be further formalised by establishing a frequent reporting mechanism, asking governors to report to the President on progress against key indicators.

DR Congo

- End-2010 milestone likely missed
- Corrective plan of sufficient quality
- Provincial governors' role could usefully be strengthened

DR Congo	
CDC assessment	
Immunization performance	Weak
Surveillance performance	Weak
Process indicators	
By end-2010, >80% adequate specimens in all provinces	Not achieved (Achieved in 2/11 provinces)
By end-2010, AFP rate >2 in all provinces	Achieved
By end-2010, <10% missed children in each SIA in Orientale, North & South Kivu	Not achieved (Achieved in 0/3 provinces)

Current situation

When the 2010-12 Strategic Plan was written, DR Congo had detected just three cases of polio in 2009. This picture changed considerably as 2010 progressed. In May 2010, as has happened many times before, polio was imported from neighbouring Angola. In June, there was yet more significant news. A virus detected in Katanga province was found to be genetically related to a virus last detected in 2008. This orphan virus demonstrated a great deficiency in surveillance – ongoing transmission had been missed for nearly two years. The country also has ongoing circulation of vaccine-derived poliovirus, providing further evidence of low population immunity. We understand that no national immunization day has been held since 2002. The fact that virus has been detected in Kinshasa, a city of some ten million people,

is also particularly concerning.

The Strategic Plan set out three end-2010 indicators for DR Congo. One of these was achieved. The other two were substantially missed. The GPEI aimed to interrupt transmission in DR Congo by the end of 2010. Although virological confirmation is awaited, this is highly likely to have been missed. So far in 2011, 26 cases have been reported (as at 31st March).

DR Congo lacks data to support the development of effective communication strategies. Health zones have very limited communication capacity and personnel at local level including in high risk zones, with poor capacity to collect and analyse communication data.

Assessment

The Ministry of Public Health published an emergency action plan in January 2011. This aims to interrupt transmission by September 2011. The plan has several welcome features. It aims to prioritise six provinces, based on ongoing transmission and clear surveillance gaps. It sets out a clear plan for frequent immunisation activities. It incorporates the strengthening of routine immunisation activities. It plans to monitor implementation on a monthly basis.

We commend the government on these aspects of its approach. In March, following a visit by the WHO Director-General, the President committed to supporting polio eradication activities. Experience elsewhere shows the great value of engaging provincial level governors in leading eradication activities. The plan's implementation would be strengthened by this. Since the plan was written, a desk surveillance review has been completed. Its findings now need urgent action.