

# Is a World Free from Polio Possible?

**This month, we are asking you to meet your MP and gain their support for the eradication of polio by becoming a 'Polio Champion'. We will need them to encourage DfID's continued work with the Global Polio Eradication Initiative (GPEI) and ask them to provide the additional resources need to end polio for good. But how do we know polio can be eradicated? And what can the UK Government do to help?**

## What progress has been made?

The simple answer is that a huge amount has been achieved. In the last 27 years, the number of endemic countries has gone down from 125 to 2. ('Endemic' means that the polio virus is circulating freely and transmission of the disease has not been stopped).

Nigeria has now been free of wild poliovirus since July 2014 and the last case of imported polio (poliovirus brought in from another country) in Africa was in Somalia in August 2014. It is important to note that both countries are battling militant groups and accordingly, the scale of this achievement cannot be overstated. The polio surveillance system in Nigeria was also the main reason that Ebola was limited to 20 cases across 2 states rather than the devastating epidemic that occurred in some of its West African neighbours.

There are three strains of wild poliovirus – the imaginatively named Type 1, Type 2, and Type 3. However, 16 years ago Type 2 poliovirus was eliminated. The last case of wild Type 2 poliovirus was detected in India in 1999. In this final stage of polio eradication, only Type 1 and Type 3 wild poliovirus continue to circulate in endemic areas. However, both are highly infectious and both can cause paralysis.

## India's Success Story

India was once considered the most challenging place on earth to end polio. The country's success is a result of remarkable commitment at all levels, from the highest reaches of government, to the heroic 2.3 million vaccinators delivering polio drops to local communities.

The infrastructure and innovations that helped India reach the poorest and most marginalised are now being used to deliver other health interventions such as measles vaccines. Social mobilisers from the polio

programme are counselling pregnant women on breastfeeding and providing newborn children with routine immunisations. The polio surveillance system is helping to build the capacity of India's Universal Immunisation Programme.

India proves that the virus can be eliminated under the most challenging circumstances, providing inspiration and technical guidance for eliminating polio in the two remaining endemic countries, Pakistan and Afghanistan. Lessons from India's success informed the development of the new Strategic Plan to end polio by 2018 and these lessons are already driving progress in the few remaining places where polio endures.

## The canary in the mine?

It is not just as a platform for other health interventions that the polio infrastructure has proved invaluable. That Nigeria limited Ebola within its borders to a few cases rather than the epidemics in neighbouring countries was in large part due to the surveillance activities of polio workers.

RESULTS was lucky enough in October to host Faleke Bolanle, a health worker from Lagos State in Nigeria. She was able to provide an insight into the surveillance work that is done by the polio system and which effectively enabled the country to identify and contain Ebola. That surveillance system is described by the World Health Organisation in the following terms:

*"Nationwide AFP (acute flaccid paralysis) surveillance is the gold standard for detecting cases of polios. The four steps of surveillance are:*

- 1. Finding and reporting children with acute flaccid paralysis (AFP)*
- 2. Transporting stool samples for analysis*
- 3. Isolating and identifying poliovirus in the laboratory*
- 4. Mapping the virus to determine the origin of the virus strain."*

These surveillance experts will leave behind the legacy of a strengthened data system that will transform the current response and disease surveillance in the future.

### **Does that mean that the job is done?**

It's not quite time to celebrate yet. Amid the rejoicing that greeted Nigeria's news, polio observers introduced a cautionary note.

The Independent Monitoring Board (IMB), created in 2010 to keep an eye on how the polio eradication effort was playing out, released a report earlier this year reminding the GPEI that optimism alone does not lead to success. In 2012 optimism soared when polio cases had plummeted but over the next 2 years a wave of major outbreaks and a surge of polio cases occurred in several countries. The message was simple: the last 1% will be the most challenging.

The hardest part of the job is in the two remaining polio-endemic countries, particularly Pakistan, which accounted for 85% of the 359 wild poliovirus cases that occurred in the world last year. The porous borders between Pakistan and Afghanistan allow Pakistan to export the virus, mainly to neighbouring Afghanistan. Reaching children in Pakistan and Afghanistan has been a critical problem. More than 700 000 children have yet to be vaccinated in these countries, according to a recent estimate.

Premature celebrations will allow complacency to creep in and allow polio to strike back from what should be a losing position.

### **Vaccine Switch**

One of the biggest problems with polio eradication has been the introduction of vaccine-derived poliovirus.

The oral polio vaccination contains a live polio virus. An unfortunate side-effect is that this virus has the ability to undergo a genetic mutation that restores its virulence in the gut of the vaccine recipient. In very rare cases, when shed in faeces, this vaccine virus can produce a polio outbreak in communities lacking strong immunity against the disease.

For this reason, developed countries that have eradicated polio have switched to an injectable polio vaccine that contains killed virus and avoids the risk of

vaccine-derived polio. Now, as the polio eradication endgame is being played out, every single case of polio has to be prevented, including the last vaccine-derived cases.

### **What happens next?**

The number of wild polio cases has reduced from 350,000 per annum in 1988 to less than 50 cases in 2015. These numbers speak for themselves, and are tantalisingly close to zero.

A strong framework for polio eradication exists. Lessons learnt from recent experiences are helping to refine the approach as we reach the finish line, and we know how to turn investments into polio eradication into the lasting legacy of a strengthened health system. We now need continued support from donors and governments in developing countries to ensure we can really achieve health for all.

The Polio Oversight Board (the body that oversees the work of GPEI) has confirmed that the amount required for GPEI's Polio Eradication and Endgame Strategic Plan will have to increase from \$5.5 billion to \$7 billion until 2019. The next 3 months are an opportunity to reach out to educate, inform, and inspire UK parliamentarians and the public before a formal request for funding is made of the UK government in the new year.

At the Commonwealth Heads of Government meeting (CHOGM) this month (27-29 November), the UK has the chance to lead support amongst Commonwealth Heads of Government for a renewed commitment to polio eradication. The Prime Minister gave his support in 2011, and this was instrumental in mobilising the political will to end polio. There is an opportunity for us to make it clear to parliamentarians that we want the UK to do the same thing this time around.

Parliamentarians, and the members of the public who they represent, need to understand the benefits of investing in polio now, and the risks of not doing so. We want to ensure that the UK does all that it possibly can do, both as a leader and as a donor, to ensure that the world is free of polio by the end of this parliamentary term.