

Certification of polio eradication in Africa

Sam Okiror, Obianuju Igweonu and Joseph Okeibunor narrate the journey for the eradication of Polio from the WHO African Region

Following the WHO resolution to eradicate poliomyelitis worldwide by the year 2000, passed at the 41st World Health Assembly (WHA) held in 1988,¹ several actions were taken to achieve commendable progress and successes in the WHO African Region.^{2–5} By August 2020, the number of countries endemic of polio had fallen to only two. Endemic transmission of wild polio virus (WPV) now occurs only in Afghanistan and Pakistan, and two of the three WPV strains (WPV2 and WPV3) have been declared eradicated as of 2019. The African Region certified free of all forms of wild polio virus on the 25th of August 2020.^{6–8}

The roadmap for certification of polio eradication was outlined by the Global Certification Commission (GCC) in the first meeting in February 1995 (WHO/EPI/GEN/95.6).⁹ At this meeting, it was stated that “the definition of eradication initiative is clearly targeted at the wild poliovirus and not at the clinical disease it can cause”. The meeting further outlined the basis for certification of global polio eradication, the essential criteria on which certification of polio eradication will be based. The criteria include the documentation required for certification of eradication and the process for certification of polio-free status.

Five basic principles were established by the GCC at its first meeting in 1995. First, certification will be on a regional or sub-regional basis by commissions convened for this purpose; second, the global Commission will provide guidelines that will form the basis for the work of the regional commissions to ensure uniformity of the criteria used to assess eradication; third, certification will be based on assessment of documented evidence focused on the existence of effective surveillance for both acute flaccid paralysis (AFP) cases and wild poliovirus confirmed through accredited laboratory networks; fourth, certification of global polio eradication will only be made when all regions have been certified free of wild poliovirus; and finally, certification in any area will not be considered until full three years have passed since the last culture-confirmed occurrence of wild polio virus in the presence of certification level surveillance.

On the basis of the guidance by the GCC, five WHO regions have been certified free of wild poliovirus: the Americas in 1994, Western Pacific Region in 2000, European Region in 2002, South-East Asia

Region in 2014, and most recently the African Region in August 2020.^{6,10–14}

This paper briefly documents the pathway to the certification of polio-free status in the African Region, and some of the lessons learnt from over 30 years of consistent and unrelenting struggle to free the region of all forms of wild polio virus.

Acceleration of eradication activities

Following the 1988 WHA resolution, polio eradication activities did not start effectively in the African Region, despite the huge investment made to realise the global goal of eradicating polio. It was only after the then Organization of African Unity – now African Union – adopted the Yaounde Declaration⁷ to eradicate polio from Africa in 1996 that definite and strategic actions began to be implemented in the African Region. A real face was given to polio eradication in the African Region was when Nelson Mandela launched the ‘Kick Polio out of Africa’¹⁵ campaign in August 1996 at the request of Rotary International. This launch was critical to the establishment of one of the largest public health coalitions in the African Region led by governments and supported by donors, the United Nations, civil society organisations, media and communication personnel. Following this launch came robust technical contribution from surveillance and case investigation both in the field and laboratory monitoring and evaluation of polio campaign quality. Innovative strategies were implemented to surmount nightmarish logistical and cold chain challenges.⁴ Millions of frontline workers delivered drops of polio vaccine into the mouths of target children, as communities accepted the repeated vaccine campaigns.^{15–18}

The WHO Regional Director for the African Region, Dr Ibrahim Samba, established the Africa Regional Certification Commission (ARCC) for polio eradication in 1998, with a mandate to certify the African Region wild poliovirus-free based on concrete documented evidence of absence of indigenous wild poliovirus under certification level surveillance for a period of at least three years. A WHO Secretariat, with the first author of this article as the first leader, supported the ARCC. The Commission was inaugurated at the first meeting held in September 1998 in Harare, Zimbabwe.

The Commission did not hold its second meeting until 2000 to allow preparatory work to be accomplished. During this period, we also took time to fully orient the nine commission members on their roles, familiarise them with the certification manuals and technical details of polio eradication.

Sam Okiror, Polio Eradication Programme, WHO/AFRO; Obianuju Igweonu, University of Nigeria; and Joseph Okeibunor, Emergency Preparedness and Response/Research Development and Innovation, WHO/AFRO.

The next step to establish country committees was initiated through a memo from the Regional Director, to all the 47 Ministers of Health, requesting each country to appoint members to the three national certification committees, namely: a national certification committee, with a national polio expert committee and a national taskforce for containment in support. In the memo, guidance of required expertise, and terms of reference were provided. The overall responsibility of the three committees is to assess and verify the national documentation, the annual progress report for polio eradication shared with ARCC annually, and when invited, to present to the ARCC the complete country documentation outlining the polio-free status. The national certification committees are supported by a secretariat consisting of the Expanded Programme on Immunisation management team, WHO Surveillance Officer and data managers.

At the second meeting held in 2000, ARCC requested the WHO Secretariat to fully orient the members of the three national committees to the required certification processes as approved by the ARCC. The orientation was initiated and completed by end of 2003 with the support of the ARCC members. However, continuous re-orientation has been conducted mainly when new members have come into the committees and when there have been new developments to be shared.

Certification process

The ARCC initially met on an annual basis until it became necessary to conduct more frequent meetings as the certification process progressed. The ARCC developed with secretariat support an annual plan of action to guide the certification, focused on the stage of the certification. At the beginning, plans were geared towards development of the capacity of the certification committees. As the process matured, the plans moved to reviewing of the annual progress national documents and providing comments for improvement, using that information and other set criteria to select countries that were deemed ready to appear before the Certification Commission to present the complete country documentation for polio-free status.

At country level each committee prepares a plan of action and meets on a quarterly basis or more frequently depending on need. The national expert committee meets to classify AFP cases as its primary duty, the national task force for containment meets to review the status of containment in the various target laboratories in the country; and all these contribute to the annual progress reports and ultimately to the complete country documentation for wild poliovirus-free status to be presented to the ARCC.

The country documentation manual consists of:

- Background information on the country including demography, population distribution, presence of any high-risk groups like those in security compromised areas, hard-to-reach communities, nomads and internally displaced persons.
- History of confirmed poliomyelitis cases and wild polioviruses.

- Performance of surveillance.
- Laboratory activities for polio eradication.
- Immunisation activities for polio eradication, including routine immunisation and supplementary immunisation activities, whether national, sub-national or mop-ups.
- Laboratory containment of wild polioviruses and potentially infectious materials.

A country selected to present the complete country documentation prepares the documentation using the standard manual with the support of the country and regional Secretariats. This is then shared with the ARCC who will review the document, arrange a visit to the country to verify for themselves the accuracy of the information provided in the document. This visit takes the team all the way to the community level. When satisfied with the document, the country is invited to present to the ARCC.

Acceptance of country documentation

The process of reviewing the complete country documentation for polio-free status started in 2006 at one of the annual general meetings held in Tanzania, and ended with the last four countries at a virtual meeting in August 2020. At these meetings, countries that had previously been selected on set criteria present their complete country documentation. Before that, the two ARCC members who previously visited the country to verify the documentation receive and review in detail the updated document after the visit. Other ARCC members too received the document at least two weeks in advance to give enough time to go through it. The country NCC Chairperson presents a summary of the report to the ARCC in a plenary session with other countries followed by clarification questions. At a later stage, each country that presents is invited to a closed session with the ARCC supported by the regional Secretariat. At the end of the discussion, ARCC conducts its own closed session and decides to accept or defer acceptance of the report. If accepted, the country continued to provide annual progress reports until regional certification.

The final leg

Complete country documentations for 43 out of 47 countries had been accepted through that rigorous process by end of 2019. The four remaining countries shared characteristics such as insecurity which compromised access to some areas for surveillance and vaccination campaigns. These countries also had low routine immunization, resulting in persistently low immunity. Innovations were implemented in these areas. Documentation of these innovations was detailed and, in the final analysis, the ARCC members went to the ground to verify that information before accepting the last four country documentations.^{2,3,4,15,17} When all the 47 country reports were accepted, the ARCC embarked on reviewing the latest status of all the countries whose reports had been previously approved and were satisfied that all were still wild poliovirus free.

The African Region was finally declared wild poliovirus-free on 25 of August 2020 in a virtual meeting linked to the Regional Committee meeting.



Traditional leaders were a major resource for polio eradication.

Lessons Learnt:

- Certification of the African Region as wild poliovirus polio free is a major accomplishment achieved through concerted efforts from international to community level.
- Public Health challenges can be surmounted if all concerned come together and work as a team.
- Certification of wild poliovirus free status is not an end in itself but a step in the right direction to adapt the best practices to prepare better for any emerging disease of public health importance.
- The Eastern Mediterranean is now the only region that is still polio-endemic for wild poliovirus type 1. So long as there is poliovirus anywhere circulating among the populations as in Afghanistan and Pakistan, the possibility of importation to the adjacent African Region remains, hence the need to ensure continued surveillance and immunity building activities.
- Containment of any repository of wild poliovirus must be perfect, otherwise when polio vaccination is stopped, a release of such a virus will find a naïve population with dire consequences.

References

- 1 Polio eradication by the year 2000. Resolutions of the 41st WHA. Geneva, Switzerland, 1998.
- 2 Fekadu L, Okeibunor J, Nsubuga P, Kipela JM, Mkanda P, Mihigo R. Reaching the unreached with polio vaccine and other child survival interventions through partnership with military in Angola. *Vaccine* 2016; 34. DOI:10.1016/j.vaccine.2016.05.069.
- 3 Innovation for polio eradication. *Lancet Infect. Dis.* 2011. DOI:10.1016/S1473-3099(11)70258-4.
- 4 Vaz RG, Mkanda P, Nsubuga P, Ado M, Etsano A. Public health innovations on the way to interruption of poliovirus transmission in Nigeria. *J. Infect. Dis.* 2016. DOI:10.1093/infdis/jiv537.
- 5 Okeibunor J, Gasasira A, Mihigo R, et al. Trend in proportions of missed children during polio supplementary immunization activities in the African Region: Evidence from independent monitoring data 2010-2012. *Vaccine* 2014; 32. DOI:10.1016/j.vaccine.2013.12.041.
- 6 Alonge O. What can over 30 years of efforts to eradicate polio teach us about global health? *BMC Public Health* 2020; 20: 1177.
- 7 GPEI. GPEI Fact Sheet. Geneva, Switzerland, 2020 <http://polioeradication.org/wp-content/uploads/2020/04/GPEI-fact-sheet-20191113.pdf>.
- 8 Hamborsky J KA WS, ed. *Epidemiology and Prevention of Vaccine-Preventable Diseases* 13th edn. Atlanta, USA: Centers for Disease Control and Prevention, 2015: 14.
- 9 WHO. Report of the 1st meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis. Geneva, Switzerland, 1995.
- 10 Certification of Poliomyelitis Eradication— the Americas, 1994. *JAMA J Am Med Assoc* 1994. DOI:10.1001/jama.1994.03520170029014.
- 11 Centers for Disease Control and Prevention. Polio-Free Certification and Lessons Learned — South-East Asia Region, March 2014. *Morb Mortal Wkly Rep* 2014; 63: 42.
- 12 Centers for Disease Control and Prevention. Certification of poliomyelitis eradication — Western Pacific Region, October 2000. *Morb Mortal Wkly Rep* 2001; 50: 1–3.
- 13 Smith SJ, Leke R, Adams A, Tangermann RH, Joseph S. Certification of polio eradication : process and lessons learned Special Theme – Polio Eradication : End-Stage Challenges. 2004; 005538.
- 14 Centers for Disease Control and Prevention. Certification of poliomyelitis eradication — European Region, October 2000. *Morb Mortal Wkly Rep* 2002; 51: 572–4.
- 15 Moeti M. Winning the battle against the scourge of poliomyelitis in the African Region. *Vaccine* 2016. DOI:10.1016/j.vaccine.2016.05.059.
- 16 Okeibunor JC, Ota C, Akanmori, BD, Gumedé N, Shaba K, Kouadio KI, Poy A, Mihigo R, Salla M MM. Polio eradication in the African region on course despite public health emergencies. *Vaccine* 2015. DOI:<http://dx.doi.org/10.1016/j.vaccine.2015.08.024>.
- 17 Eggers HJ. Difficulties in polio eradication. *Lancet.* 2001. DOI:10.1016/S0140-6736(05)71281-2.
- 18 WHO. Poliomyelitis: Intensification of the global eradication initiative. Switzerland, 2012.