

# Poliomyelitis

## Poliomyelitis eradication

### Report by the Director-General

1. At its 148th session, the Executive Board noted the report on poliomyelitis eradication,<sup>1</sup> with its update on: efforts to interrupt remaining wild poliovirus transmission; implementation of responses to outbreaks of circulating vaccine-derived poliovirus type 2 and the introduction of novel oral polio vaccine type 2; the impact of the coronavirus disease (COVID-19) pandemic on the global eradication programme; and the main elements of a revised and strengthened strategic plan and current financing situation. This report provides further information.

### **POLIOVIRUS TRANSMISSION<sup>2</sup>**

2. Poliovirus transmission globally is actively tracked through a system of disease and virus surveillance, focused primarily on 69 at-risk countries, in order to rapidly detect and enable responses to the presence of poliovirus. This system detects and investigates more than 115 000 cases of acute flaccid paralysis, supported by more than 550 environmental testing sites to enable further insight even in the absence of paralytic disease. Although surveillance sensitivity was impacted in some areas as a result of the COVID-19 pandemic, it remained functional, operational and programmatically relevant, and is now reaching levels of sensitivity similar to pre-pandemic levels in most regions.

3. In 2021, wild poliovirus type 1 continues to be detected in parts of Afghanistan and Pakistan. On 25 August 2020, the African Region was certified as free of wild polioviruses by the African Regional Certification Commission, becoming the fifth WHO Region to be independently certified as free of all wild polioviruses. Wild polioviruses type 2 and type 3 have been globally certified as eradicated, in 2015 and 2019, respectively. Outbreaks due to circulating vaccine-derived polioviruses, in particular type 2 poliovirus, continue to affect areas of the African, Eastern Mediterranean and Western Pacific regions.

### **Afghanistan and Pakistan – cross-border reservoir with co-circulation of wild poliovirus type 1 and circulating vaccine-derived poliovirus type 2**

4. Afghanistan is affected by co-circulation of wild poliovirus type 1 and circulating vaccine-derived poliovirus type 2. As at January 2021, 56 cases of wild poliovirus type 1 and 49 environmental samples

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<sup>1</sup> Document EB148/22; see the summary records of the Executive Board at its 148th session, thirteenth meeting, section 2.

<sup>2</sup> All epidemiological data as at end-February 2021. Regularly updated epidemiological data are available at <http://polioeradication.org/polio-today/polio-now/this-week/> (accessed 18 March 2021).

positive for wild poliovirus type 1 had been reported in 2020, and 255 cases of circulating vaccine-derived poliovirus type 2 and 148 environmental samples positive for circulating-vaccine-derived poliovirus type 2 in 2020. Afghanistan has in the past successfully interrupted indigenous wild poliovirus transmission in the two endemic reservoirs, the Southern and Eastern regions, but its efforts are complicated by geopolitical factors, limited access for vaccination in the Southern Region and a temporary pause in vaccination campaigns related to COVID-19.

5. Wild poliovirus type 1 transmission is endemic in the Southern and Eastern regions of Afghanistan and continues to expand into previously polio-free areas, notably in the north and west of the country. Circulation of vaccine-derived poliovirus type 2 continues in the Southern and Eastern regions, with risk of further geographical expansion and international spread due to the almost complete lack of type-2-containing vaccination campaigns in more than six months and a large nationwide accumulation of children susceptible to type 2 poliovirus.

6. In response, the national programme is adapting operational approaches, in order: to stop circulating vaccine-derived poliovirus type 2; to stop wild poliovirus type 1 transmission in the Eastern Region and non-endemic areas; and to secure greater access for vaccination campaigns in high-risk areas of the Southern Region, or contain wild poliovirus type 1 to existing endemic areas. Efforts are focusing on adapting vaccination campaign approaches to the current situation with regard to COVID-19, including: improving the quality of campaigns; exploring different methodologies to increase access in key areas; comprehensively engaging communities including through increased mass media and social media presence; and integrating immunization and surveillance activities within broader health efforts. The polio eradication programme will be working with a broader range of public- and private-sector partners operational on the ground aiming to deliver health services, and establishing integrated service plans to distribute other services to communities during polio campaigns, such as hygiene kits, baby blankets and soap, and implementing multi-antigen campaigns where possible.

7. Pakistan is affected by co-circulation of wild poliovirus type 1 and circulating vaccine-derived poliovirus type 2. As at January 2021, 84 cases of poliomyelitis due to wild poliovirus type 1 and 442 wild poliovirus type 1-positive environmental samples had been reported in 2020. The bulk of these cases occurred in the first part of the year, with only six cases due to wild poliovirus type 1 occurring in the last quarter of 2020 (compared to 72 cases during the same period in 2019), despite it being traditionally the high season for polio transmission. Also in 2020, 122 cases due to circulating vaccine-derived poliovirus type 2 and 110 circulating-vaccine-derived poliovirus type 2-positive environmental samples were reported.

8. Wild poliovirus type 1 transmission is ongoing in traditional reservoir areas, namely the northern corridor (Peshawar/Khyber), Karachi and the southern corridor (Quetta block, Balochistan), with expansion of virus to previously polio-free areas (Punjab and Sindh), and detection of virus across the country. Circulating vaccine-derived poliovirus type 2 continues to spread geographically, notably in Khyber Pakhtunkhwa, with ongoing breakthrough transmission complicated by a large nationwide accumulation of populations susceptible to type 2 poliovirus. The risk of further spread of both strains, particularly of circulating vaccine-derived poliovirus type 2, including potentially internationally, will increase in the coming months owing to a build-up of susceptible children resulting from a pause in vaccination campaigns associated with the COVID-19 pandemic (see the section on the “Impact of COVID-19” below). Almost 75% of districts with two rounds of oral polio vaccine containing poliovirus type 2 did not show any evidence of transmission.

9. The national programme has been re-organized urgently to address the circulation of both virus strains, as a key component of the broader health and economic COVID-19 recovery process. The immediate objectives are to stop the circulation of vaccine-derived poliovirus type 2 through multiple,

high-quality and large-scale vaccination campaigns without exacerbating the situation with COVID-19; to maintain control of wild poliovirus type 1 through campaigns targeting core reservoir areas and outbreak response; and to complete the transformation of the programme to successfully interrupt the circulation of wild poliovirus type 1 in 2021.

10. To ensure greater engagement of government leadership and provide additional support to remaining endemic countries, the WHO Regional Director for the Eastern Mediterranean established the Ministerial Regional Subcommittee on Polio Eradication and Outbreaks which met for the first time in March 2021.

### **Increasing public health emergency associated with circulating vaccine-derived poliovirus type 2**

11. In 2019, an emergency associated with circulating vaccine-derived poliovirus type 2 emerged, which continued to expand in 2020 and 2021. As at January 2021, in 2020 9959 cases of circulating vaccine-derived poliovirus type 2 and 411 circulating-vaccine-derived poliovirus type 2-positive environmental samples were reported from 25 countries globally, primarily in Africa, but also including Afghanistan and Pakistan (see previous section) and Egypt, Iran (Islamic Republic of), the Philippines and Tajikistan.

12. In the countries in Africa, several outbreaks of genetically-distinct circulating vaccine-derived poliovirus type 2 continue to spread across different countries, notably in: west Africa (an outbreak originating in Nigeria has expanded to 10 countries and continues to spread into both west Africa and parts of central Africa); in central Africa (notably Angola and the Democratic Republic of the Congo); and in the Horn of Africa (notably Ethiopia and Somalia).

13. In all instances, the continued spread of existing outbreaks as well as the emergence of new type 2 circulating vaccine-derived polioviruses point to gaps in routine immunization coverage in addition to insufficient quality of outbreak response with monovalent oral polio vaccine type 2. The risk of further spread of such strains, or emergence of new strains, is magnified by an ever-increasing gap in global mucosal immunity to type 2 poliovirus and dropping immunization rates related to COVID-19.

14. Despite the continued outbreaks, the African Region completed assessments of existing outbreaks. On the basis of the findings and recommendations, in accordance with global guidelines, the result has been the closure of 18 outbreaks in six countries: Angola, Central African Republic, Democratic Republic of the Congo, Ethiopia, Nigeria and Zambia. Indonesia and Myanmar conducted virtual Outbreak Response Assessments; based on the findings and in accordance with global guidelines, the outbreaks in the latter two countries were officially closed in 2020.

15. In 2019 and early 2020, the Global Polio Eradication Initiative developed a strategy for the response to type 2 circulating vaccine-derived poliovirus 2020–2021<sup>1</sup> to more effectively address the evolving circulating vaccine-derived poliovirus type 2 epidemiology. In decision EB146(11) (2020) on polio eradication, the Executive Board noted the development of this strategy and urged Member States to mobilize domestic financial resources to contribute to outbreak response efforts.

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<sup>1</sup> Strategy for the response to type 2 circulating vaccine-derived poliovirus 2020–2021 (available at: <http://polioeradication.org/wp-content/uploads/2020/04/Strategy-for-the-response-to-type-2-circulating-Vaccine-Derived-Poliovirus-20200406.pdf>, accessed 18 March 2021).

16. In this decision the Board requested the Director-General to accelerate the assessment and roll-out of a novel oral polio vaccine type 2, through the WHO Emergency Use Listing procedure, and called on Member States to implement an expedited process for national approval of the importation and use of this vaccine. In order to support Member States to implement this decision, the Global Polio Eradication Initiative has established a working group on the novel oral polio vaccine type 2 to coordinate all aspects of the vaccine roll-out in a safe, effective and expedited manner. Under the leadership of the WHO pre-qualification team, the recommendation of the WHO Emergency Use Listing, based on data from key clinical studies in adults, children and infants, was issued on 13 November 2020.<sup>1</sup> In parallel, WHO regional offices are supporting Member States at high risk of type 2 circulating vaccine-derived poliovirus to prepare for possible use of novel oral polio vaccine type 2. To guide the distribution of this vaccine, the Strategic Advisory Group of Experts on immunization at its meeting in early 2020<sup>2</sup> endorsed a framework for initial-use criteria under the WHO Emergency Use Listing, pending issuance of the emergency use recommendation. The vaccine is expected to be introduced for outbreak response in the first quarter of 2021 and represents a further tool available to countries' eradication efforts in addition to monovalent oral polio vaccine type 2, bivalent oral polio vaccine, trivalent oral polio vaccine and inactivated polio vaccine. Different vaccines will be recommended for different settings, based on the prevailing and area-specific epidemiology, in order to enable the most effective and rapid response. A framework to govern the use of the various type 2-containing vaccines was discussed and endorsed by the Strategic Advisory Group of Experts on immunization in October 2020. This endorsement included a recommendation that, following review of the initial-use period for novel oral polio vaccine type 2 and should the data collected and reviewed be supportive, it becomes the vaccine of choice for responding to outbreaks of circulating vaccine-derived poliovirus type 2, subject to Member States meeting all requirements for its use.

## IMPACT OF COVID-19

17. The COVID-19 pandemic has significantly disrupted the efforts to combat vaccine-preventable diseases, including poliomyelitis, compromising health systems and limiting access to vital treatments and immunizations around the world. In order to protect communities and staff, the Global Polio Eradication Initiative recommended in March 2020 that countries temporarily pause house-to-house polio vaccination campaigns and make the polio programme workers and resources available to fight COVID-19. Although this step was necessary to save lives, the suspension of planned polio campaigns (>60) in more than 30 countries (from March to July 2020), coupled with COVID-19-related disruptions to routine immunization, has already resulted in increased transmission of poliovirus.

18. This increase in transmission is of particular concern in the wild poliovirus-endemic countries Afghanistan and Pakistan, which are also affected by outbreaks of vaccine-derived polioviruses and where, in the absence of immunization campaigns, modelling predicts that the circulation of poliovirus can increase exponentially during the high transmission season. It is also expected that other countries affected by outbreaks of vaccine-derived polioviruses will see increases in transmission in case of a prolongation of the suspension of polio campaigns. As an example, the risk assessment carried out in mid-2020 indicated a risk of up to a 200% increase in the number of districts with cases due to circulating vaccine-derived poliovirus in the African Region by end 2020, if high-quality outbreak response activities are not resumed. Left unchecked, this increased transmission could pose an increasingly high

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<sup>1</sup> First ever vaccine listed under WHO emergency use (available at: <https://www.who.int/news/item/13-11-2020-first-ever-vaccine-listed-under-who-emergency-use>, accessed 18 March 2021).

<sup>2</sup> Weekly epidemiological record, 29 May 2020. Meeting of the Strategic Advisory Group of Experts on immunization, 29 March–1 April 2020: conclusions and recommendations (<https://apps.who.int/iris/bitstream/handle/10665/332218/WER9522-eng-fre.pdf?ua=1&ua=1>, accessed 15 April 2021).

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risk of international spread of poliovirus and potential multicountry outbreaks. At its most recent meeting, in February 2021, the Emergency Committee on the international spread of poliovirus of the International Health Regulations (2005) – assessing that the risk of international spread of polioviruses remains a public health emergency of international concern – concluded that the “current situation is extraordinary, with clear ongoing and increasing risk of international spread and ongoing need for coordinated international response.”<sup>1</sup>

19. Given the critical importance of monitoring the impact of COVID-19 on the polio eradication programme and maintaining coordination on resuming and/or continuing crucial polio eradication activities, the Global Polio Eradication Initiative’s Strategy Committee formed a time-limited entity named the GPEI Continuity Planning and Facilitation Group. This group functioned from April to September 2020 to closely monitor the ongoing impact of COVID-19 on the programme, facilitate coordination within Global Polio Eradication Initiative as well as with other health programmes, and provide necessary assistance for resumption of paused activities.

20. In view of the high risks of polio outbreaks intensifying and spreading, as at February 2021, polio vaccination campaigns have been fully resumed in endemic and outbreak countries. A total of 23 countries have implemented campaigns since July 2020: Afghanistan, Angola, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d’Ivoire, Democratic Republic of the Congo, Ethiopia, Ghana, Guinea, Malaysia, Mali, Niger, Nigeria, Pakistan, the Philippines, Somalia, South Sudan, Sudan, Togo and Yemen. In all instances, decisions about the resumption of polio vaccination activities were made by the national authorities, using the Global Polio Eradication Initiative’s strategic guidance on decision-making and in close collaboration with immunization and other health programmes. The decisions were taken after careful analyses to ensure that the benefits of carrying out the activity outweighed the risks of COVID-19 transmission among frontline workers and communities. In countries that have successfully resumed activities, the programme has developed strategies for prevention and control of COVID-19 and is providing resources such as masks and hand sanitizers to keep frontline health workers protected while ensuring that campaign elements meet physical distancing requirements. Moreover, the programme is reviewing and adjusting its social mobilization strategies to effectively engage communities towards implementing high-quality campaigns. The programme is also working with countries and the broader public health community to explore options for combining delivery of the polio vaccine with other vaccines and health services, depending on immediate community needs, availability of resources and operational and logistical considerations. Since resumption of campaigns in mid-2020, integrated, multiantigen campaigns have been conducted in Afghanistan, Pakistan and Somalia, and planned in several other countries including Bangladesh, Côte d’Ivoire, Gambia, Guinea, Indonesia, Liberia, Madagascar, Malawi, Nigeria and Senegal.

21. Significant and widespread disruptions to immunization and other public health initiatives caused by the COVID-19 pandemic and its associated risks have highlighted the urgent need for more coordinated and integrated approaches. The Global Polio Eradication Initiative has been collaborating with WHO and UNICEF immunization programmes in a multi-partner initiative to develop an interim Programme of Work for Integrated Actions, which outlines key activities, strategies and changes in approach required to meet the current, unprecedented COVID-19-related challenges facing countries. The work of the interim Programme of Work is being fed into the Global Polio Eradication Initiative’s strategy revision and management review.

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<sup>1</sup> Statement of the twenty-seventh Polio IHR Emergency Committee, February 2021 (<https://www.who.int/news/item/19-02-2021-statement-of-the-twenty-seventh-polio-ih-er-emergency-committee>, accessed 22 March 2021).

22. Cross-programmatic integration has been accelerated by the COVID-19 pandemic, during which the polio programme has worked closely with other health programmes to respond to the virus. Building on this momentum, in the African and Eastern Mediterranean regions, WHO is operationalizing integrated public health teams, which bring together emergency, immunization and polio expertise to provide health services to population. The teams focus on the COVID-19 response initially and are part of efforts to build on the polio footprint and develop closer links between programmes, as a step towards sustainable transition of polio assets to serve broader public health.

23. At the strategic level, the Global Polio Eradication Initiative is aligning its priorities with global immunization strategies such as the Immunization Agenda 2030 and the 2021–2025 strategy of Gavi, the Vaccine Alliance, focusing on reaching “zero dose” communities. With its long-standing expertise in reaching every last child in the most vulnerable parts of the world, the programme can be an important contributor to strengthening immunization activities where there is a large footprint. Integration and transition are addressed in more detail in the accompanying report on polio transition planning and polio post-certification.<sup>1</sup>

24. Anywhere that polio resources are available, the polio programme is continuing to lend critical support to protect communities from COVID-19. Building on decades of experience stopping polio outbreaks, polio workers and resources are playing an important role in the fight against COVID-19. Staff are working to educate the public and combat the spread of misinformation. Globally, the polio surveillance network is being used for COVID-19 case detection, contact tracing, laboratory testing and data management. Polio data management systems and front-line staff in many countries are helping to accelerate COVID-19 detection and response. Reportedly, numerous polio workers have been infected with SARS-CoV-2 while performing their duties, and two workers in Somalia died of COVID-19. In total, an estimated US\$ 70 million to US\$ 100 million of funds from the Global Polio Eradication Initiative were allocated and contributed to global pandemic response in 2020.

25. Given the significant disruption caused by COVID-19 to immunization services, including those for polio eradication, on 6 November 2020 WHO and UNICEF issued a joint emergency call to action for measles and polio outbreak response and prevention<sup>2</sup> to protect children by vaccination. The call is for countries to invest in their immunization services so as to urgently raise immunity levels and for the international community to ensure rapid operationalization of the emergency funds needed to implement polio and measles outbreak prevention and response strategies.

26. The Polio Oversight Board, at its meeting held virtually on 18 December 2020, reaffirmed its commitment that polio-funded assets are available to countries to respond to the COVID-19 pandemic, especially in the next phase of COVID-19 vaccine introduction and delivery.

## **POLIOVIRUS CONTAINMENT**

27. The overarching goal of poliovirus containment is to reduce the risk of re-introduction of poliovirus and disease into the community. The reduction of risk is accomplished by monitoring the types and amounts of polioviruses held in countries through the annual review of certification inventories and providing technical guidance on the implementation of the WHO global action plan to

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<sup>1</sup> Document A74/20.

<sup>2</sup> UNICEF and WHO call for emergency action to avert major measles and polio outbreaks (<https://polioeradication.org/news-post/unicef-and-who-call-for-emergency-action-to-avert-major-measles-and-polio-epidemics/>, accessed 22 March 2021).

minimize poliovirus facility-associated risk after type-specific eradication of wild polioviruses and sequential cessation of oral polio vaccine use (GAPIII)<sup>1</sup> in designated poliovirus-essential facilities.

28. In accordance with resolution WHA68.3 (2015) on poliomyelitis, countries should continue to intensify activities for containment of type 2 polioviruses. At the start of 2021, 24 countries have 73 facilities (laboratories, vaccine manufacturers, research facilities) retaining type 2 poliovirus. Fourteen facilities in five countries have not yet entered into the Global Poliovirus Containment Certification Scheme, the deadline for which was December 2019. In addition, with the certification of global eradication of wild poliovirus type 3, samples containing wild poliovirus type 3 should now be handled in containment conditions or destroyed. It is expected that the number of poliovirus-essential facilities could increase as wild poliovirus types 3 and 1 are certified as globally eradicated, and thus required to be handled in containment conditions.

29. The programme is updating its containment guidance, including that in the WHO global action plan to minimize poliovirus facility-associated risk, in order to ensure a coordinated evolution of global guidance for containment as the programme also pivots to respond to evolving certification criteria, ongoing outbreaks and the COVID-19 pandemic.

30. Most type 2 poliovirus-essential facilities are located in polio-free countries. Since the start of 2020, breach or release incidents have been reported from facilities in three countries. The consequences, namely the risk of spread associated with a potential breach, are magnified by an ever-increasing global gap in mucosal immunity to type 2 poliovirus and decreasing immunization rates due in part to COVID-19. All countries, irrespective of poliovirus-affected status, should: ensure that poliovirus-containment measures are fully implemented; reduce the number of poliovirus-essential facilities to an absolute minimum; and when possible abandon use of wild poliovirus in vaccine production and testing in favour of alternative, genetically-stabilized attenuated strains.

## **GOVERNANCE AND FINANCING**

31. In December 2019, in response to the evolving situation and needs and at the request of donors, the Global Polio Eradication Initiative launched a governance review process to evaluate how to improve the partnership's operations and structures at the leadership level (Polio Oversight Board, Finance and Accountability Committee and Strategy Committee). The review gathered feedback from stakeholders and donors through a series of surveys, workshops, interviews and consultations conducted over a six-month period. The findings<sup>2</sup> were published in July 2020 and outline key issues with recommendations aimed at strengthening the programme's governance.

32. In 2020, the Global Polio Eradication Initiative launched a revision of the strategic plan for polio eradication. Based on best practices and lessons learned, partners and stakeholders collectively identified remaining obstacles to polio eradication, in order to inform a revised and strengthened plan and incorporate optimal approaches to overcoming those obstacles. The strengthened plan aims to achieve and sustain a polio-free world through a focus on implementation accountability of the core eradication strategies. Emphasis will be on cutting response times; increasing vaccine demand; transforming the

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<sup>1</sup> WHO global action plan to minimize poliovirus facility-associated risk after type-specific eradication of wild polioviruses and sequential cessation of oral polio vaccine use: GAPIII. Geneva: World Health Organization; 2015 (<http://apps.who.int/iris/handle/10665/208872>, accessed 15 April 2021).

<sup>2</sup> Global Polio Eradication Initiative Governance Review Final Report, July 2020 (available at: <http://polioeradication.org/wp-content/uploads/2020/07/GPEI-Governance-Review-Final-Report-July-2020.pdf>, accessed 19 March 2021).

effectiveness of campaigns; working systematically through integration; transitioning towards government ownership; and improving decision-making and accountability. Full implementation and financing of the strengthened plan will permanently interrupt wild poliovirus transmission and contain and prevent circulating vaccine-derived poliovirus outbreaks worldwide.<sup>1</sup>

33. Overall support to the Global Polio Eradication Initiative remains high, notably that by long-standing sovereign donors and Rotary International, but the Initiative faces a precarious financing situation which could significantly impact global eradication efforts. Current financial constraints may force a prioritization of available resources, which could scale back presence in countries in which poliomyelitis is not endemic. At the same time, the programme is adapting its approaches to the COVID-19 pandemic. Several factors are expected to contribute to increased needs for financial resources: (1) as polio vaccination campaigns gradually resume, additional investments are needed to protect health workers and communities during the campaigns; (2) the drop in essential immunization services and pause in campaigns in 2020 may give rise to increased numbers of cases and costs to respond; (3) this latter factor may also lead to a delay in eradication itself. The polio programme is undertaking careful risk analysis of the evolving epidemiology and is being implemented so that the response is conducted in the safest and most efficient manner possible, including through multiantigen activities when appropriate. Member States are encouraged to strengthen routine immunization with bivalent oral polio vaccine and inactivated polio vaccine and to mobilize domestic finances in response to outbreaks of circulating vaccine-derived polioviruses in line with decision EB146(11) on polio eradication.

#### **ACTION BY THE HEALTH ASSEMBLY**

34. The Health Assembly is invited to note the report.

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<sup>1</sup> Global Polio Eradication Initiative Endgame Strategic Plan: regularly updated drafts available at <https://polioeradication.org/gpei-strategy-2022-2026/> (accessed 15 April 2021).