

# Poliomyelitis

## Report by the Secretariat

1. Strong progress continues to be made towards each of the four objectives of the Polio Eradication and Endgame Strategic Plan 2013–2018 (the Endgame Plan). With only Afghanistan and Pakistan remaining endemic for poliomyelitis, wild poliovirus transmission is at the lowest levels in history, with the fewest-ever reported cases from the fewest-ever affected countries.

2. The declaration of international spread of wild poliovirus as a Public Health Emergency of International Concern and the temporary recommendations promulgated under the International Health Regulations (2005) remain in effect. In September 2015, the Polio Oversight Board of the Global Polio Eradication Initiative reviewed progress and concluded that wild poliovirus transmission is more likely to be interrupted in 2016 than in 2015. This delay shifts the predicted date for certification of global polio eradication to 2019 and increases the cost of completing polio eradication by US\$ 1500 million. In October 2015, WHO's Strategic Advisory Group of Experts on immunization confirmed its recommendation that the withdrawal of oral polio vaccines containing the type 2 component should occur during the period 17 April–1 May 2016 in all countries that are using trivalent oral polio vaccine through a globally-synchronized replacement of this vaccine by the bivalent oral polio vaccine. The Group also reaffirmed that, in preparation for this global event, it is crucial that countries meet established deadlines to identify facilities holding wild or vaccine-derived poliovirus type 2, destroy all type 2 poliovirus materials and, only where necessary, appropriately contain type 2 poliovirus in essential poliovirus facilities. The Executive Board at its 138th session noted an earlier version of this report.<sup>1</sup> The text of the report has been updated and revised in light of the Board's deliberations.

### **INTERRUPTION OF WILD POLIOVIRUS TRANSMISSION**

3. As at 17 February 2016, 74 cases of paralytic poliomyelitis due to wild poliovirus had been reported globally with onset of paralysis in 2015, compared to 359 for 2014. All the cases were reported from Afghanistan and Pakistan and were caused by wild poliovirus type 1. On 20 September 2015, the Global Commission for the Certification of Poliomyelitis Eradication declared global eradication of wild poliovirus type 2. Wild poliovirus type 3 has not been detected globally since November 2012.

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<sup>1</sup> Document EB138/25 and summary records of the Executive Board at its 138th session, eighth meeting, section 2 (document EB138/2016/REC/2).

## **Endemic countries – Afghanistan and Pakistan**

4. Owing to continued cross-border transmission, Afghanistan and Pakistan continue to be treated as a single epidemiological block. In Pakistan, 54 cases were reported in 2015, compared to 306 in 2014. In Afghanistan, 20 cases were reported, compared to 28 in 2014. In Pakistan and Afghanistan, the interruption of wild poliovirus transmission depends on reaching all missed children, filling chronic gaps in strategy implementation and being able to vaccinate children in infected areas that have been difficult to access owing to insecurity. The remaining reservoirs of wild poliovirus are the Khyber-Peshawar-Nangarhar and Quetta-Greater Kandahar corridors, linking Pakistan with Afghanistan, and Karachi in Pakistan. These are now the focus of attention for increased quality and activity.

5. In Pakistan, the number of polio cases continues to decline. A national emergency action plan for the disease is being overseen directly by the office of the Prime Minister. Emergency Operations Centres at federal and provincial levels ensure almost real-time monitoring of activities, implementation of corrective action and increased accountability and ownership at all levels. Most importantly, the national plan focuses on identifying chronically missed children and reasons why they are missed, and implementing area-specific approaches to overcome these challenges. As a result, innovative strategies are being implemented, operational weaknesses of the programme are being increasingly addressed, and access continues to improve in previously inaccessible areas. Nevertheless, Pakistan in 2015 accounted for 73% of all wild poliovirus cases worldwide. Vaccination coverage gaps remain in: Karachi, Peshawar-Khyber corridor and parts of the Quetta block with evidence of continued transmission.

6. In Afghanistan, the number of polio cases continues to decline steadily, for example in Southern Region. However, transmission continues along corridors in the east and south, as evidenced by detection of wild poliovirus in children with acute flaccid paralysis and in environmental samples. Although programmes are being improved in order to reduce the number of children missed in accessible areas, the deteriorating security situation is a concern, reducing access particularly in Eastern and Northern Regions. A temporary suspension of vaccination by local leaders in Southern Region was resolved by highlighting the importance of maintaining neutrality in public health efforts. A national emergency action plan is being implemented, all efforts to identify and address gaps are being closely tracked, and the country is developing innovative strategies to reach children wherever and whenever feasible, including with a strong focus on border areas.

## **Recently-endemic countries – Nigeria**

7. In Nigeria, no case due to wild poliovirus type 1 has occurred since 24 July 2014; as a result, Nigeria was officially removed from the list of endemic countries on 25 September 2015.

## **International spread of wild poliovirus**

8. Episodes of international spread of poliovirus continued in 2015 with both Afghanistan and Pakistan exporting virus across their shared border. Minimizing the risk and consequences of new international spread of polioviruses requires: full implementation of the eradication strategies in the remaining infected areas; comprehensive application of the temporary recommendations issued by the Director-General under the International Health Regulations (2005); and heightened surveillance globally to facilitate a rapid response to new cases. At its meeting on 10 November 2015, the IHR Emergency Committee noted with concern the current outbreaks due to circulating vaccine-derived poliovirus types 1 and 2 and the emergence of such strains in three WHO regions in 2015, particularly

at this stage of the Polio Endgame. The Committee recommended extending the temporary recommendations to countries affected by such outbreaks (previously, the recommendations had been limited to countries affected by wild poliovirus).

### **Circulating vaccine-derived polioviruses type 1**

9. In 2015, in Madagascar, 10 new cases of a circulating vaccine-derived poliovirus type 1 were reported, genetically linked to isolates of the same strain first detected in 2014. In Ukraine, two cases were reported, with onset of paralysis on 30 June 2015 and 7 July 2015. In the Lao People's Democratic Republic, 7 cases were reported, with the onset of paralysis for the first case occurring on 7 September 2015. Two more cases have been reported to date in 2016. In Madagascar, national efforts continue to be intensified to stop the prolonged circulation. In the Lao People's Democratic Republic, a comprehensive outbreak response was launched immediately after confirmation of the first reported case. In Ukraine, an outbreak response commenced on 21 October 2015 after a delay of several weeks.

### **Circulating vaccine-derived polioviruses type 2**

10. It is crucial that all outbreaks of circulating vaccine-derived poliovirus type 2 (cVDPV2) are stopped ahead of the planned removal of the type 2 component of the oral polio vaccine in April 2016. In Nigeria, one case of disease due to cVDPV2 was reported, with onset of paralysis on 16 May 2015, related to a strain first isolated from environmental samples in August 2014. In Guinea, four cases due to cVDPV2 were detected, related to a strain last detected in the country in August 2014. The onset of paralysis in the first case occurred on 20 July 2015. Two cases were also reported in Pakistan in February 2015. In Myanmar, two cases due to circulating vaccine-derived poliovirus type 2 were detected. The onset of paralysis was recorded in one case on 5 October 2015; the other case was assigned retrospectively with onset of paralysis in the same village in April 2015. In Nigeria, the outbreak response is part of the national emergency action plan, overseen by the office of the President. In Guinea and border areas of Mali, outbreak response was initiated within two weeks of confirmation of the outbreak. In Myanmar, an outbreak response was initiated in November, with two campaigns focusing on larger populations in December 2015. A strain isolated from a case with onset of paralysis in April 2015 detected in South Sudan is being managed as a circulating strain (cVDPV2), which poses a risk of further spread in the conflict-affected areas. Response activities are ongoing and the strain has not been detected since April. Vaccine-derived poliovirus emergencies happen only when routine immunization coverage is low, highlighting the importance of strengthening routine immunization systems.

11. In the first half of 2015, in close consultation with stakeholders, the Global Polio Eradication Initiative conducted a mid-term review of progress towards the implementation of the Endgame Plan. It concluded that the key strategic elements required to reach polio eradication are in place, but it identified programme areas whose priorities need to be refocused, in particular with regard to filling gaps in surveillance, reaching missed children and enhancing outbreak preparedness and response in high-risk areas. A comprehensive plan is being developed to operationalize the recommendations of the mid-term review.

## **WITHDRAWAL OF THE TYPE 2 COMPONENT IN ORAL POLIOVIRUS VACCINE**

12. On 20 September 2015, the Global Commission for the Certification of Poliomyelitis Eradication declared that wild poliovirus type 2 has been eradicated, with the last detected case occurring in 1999. On 20 October 2015, the Strategic Advisory Group of Experts on immunization reviewed the situation of type 2 vaccine-derived polioviruses and progress towards global readiness for the coordinated, phased removal of oral polio vaccines, and confirmed that the withdrawal of type 2 oral polio vaccines should occur between 17 April and 1 May 2016, through the globally synchronized switch from trivalent oral polio vaccine to bivalent (types 1 and 3) oral polio vaccine, in all countries currently using trivalent oral polio vaccine.<sup>1</sup>

### **Global vaccine supply to prepare for the trivalent to bivalent oral polio vaccine switch**

13. To prepare for the switch to bivalent oral polio vaccine, all countries have committed themselves to introduce at least one dose of inactivated poliovirus vaccine into their routine immunization programmes. The level of commitment from countries to meet this goal has been exceptional. The Strategic Advisory Group of Experts on immunization noted the reduction in inactivated polio vaccine supply due to technical difficulties manufacturers have encountered in scaling up production. The Group advised the prioritization of the use of inactivated poliovirus vaccine by ensuring introduction in the higher risk tier 1 and 2 countries before the switch; maintaining stocks of inactivated poliovirus vaccine and monovalent type 2 oral polio vaccine for response to a type 2 poliovirus outbreak after withdrawal of oral polio vaccine type 2; and minimizing the period of delay in inactivated poliovirus vaccine supply and the number of countries affected. The countries affected by the delay are in lower risk tier 3 and 4. As population immunity against type 2 poliovirus is high in these countries (owing to consistently high routine immunization coverage), the risk of vaccine-derived poliovirus type 2 emergence and spread is minimal. All efforts are under way to ensure that all countries receive inactivated poliovirus vaccine supplies by the end of 2016 or early 2017. The supply situation will remain fragile through 2017. The global vaccine supply suffered further constraints as, in the period late February/early March 2016, manufacturers announced substantial additional decreases in product availability for 2016 and 2017 in respect of markets with GAVI-eligible countries. These reductions, together with concerns about additional potential shortfalls, associated programmatic implications and strategic options are being discussed with Member States.

14. The Strategic Advisory Group of Experts on immunization further reinforced the position that a stockpile of monovalent oral polio vaccine type 2 should be established and maintained in order to facilitate outbreak response, should it be needed. The Health Assembly in resolution WHA68.3 (2015) endorsed an approach to management and release of this stockpile. UNICEF and WHO have contracted two vaccine manufacturers that have established a global stockpile in bulk for up to 519 million doses. Before April 2016, 50 million doses will be available in ready-to-use vials. Preparations continue to ensure availability of bivalent oral poliovirus vaccine for use in all countries' routine immunization programmes in time for the switch in April 2016.

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<sup>1</sup> Meeting of the Strategic Advisory Group of Experts on immunization, October 2015 – conclusions and recommendations. Weekly epidemiological record, 2015: 90: 681-700 (<http://www.who.int/wer/2015/wer9050.pdf?ua=1>, accessed 21 March 2016).

15. The Global Polio Eradication Initiative continues to monitor closely the global supply of inactivated poliovirus vaccine, and tries to minimize the number of countries affected (in terms of delays in introduction and/or stock-out of inactivated poliovirus vaccine). The difficulties in supply have been aggravated by further production delays in the first quarter of 2016. In this context, the Global Polio Eradication Initiative is exploring with WHO regions and Member States the feasibility of instituting dose-sparing strategies, such as using intradermal administration of fractional-dose inactivated poliovirus vaccine (one-fifth of a full dose). As at March 2016, some Member States have already committed to using fractional-dose. India in particular is participating in this effort, which should enable the country to maximize and optimize its available vaccine supply (potentially by as much as five times), thereby ensuring that the national vaccine supply for 2016 and 2017 can be fully met. Studies have shown that two fractional doses offer better protection to children than a single full dose.

### **Strengthening routine immunization**

16. The Global Polio Eradication Initiative has started a joint programme of work with the GAVI Alliance and other partners to support efforts to strengthen routine immunization in 10 “focus” countries with significant polio resources. Six of these countries – Chad, Democratic Republic of the Congo, Ethiopia, India, Nigeria and Pakistan – have developed annual national immunization plans that build on polio assets to improve broader immunization goals, resulting in as much as a 22% reduction in unimmunized children in some areas, in 2014 compared with 2013.<sup>1</sup> Polio staff in these countries spend as much as 50% of their time on broader immunization and public health issues.

## **CONTAINMENT**

17. In 2015, there was some progress on efforts to contain poliovirus type 2, in line with the 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).<sup>2</sup> As at 11 February 2016, 115 countries reported they had no wild poliovirus type 2 or vaccine-derived poliovirus type 2, 12 reported they did, 26 were completing reports, with the remainder yet to complete their reports on the destruction or planned retention of wild poliovirus type 2 or vaccine-derived poliovirus type 2 materials, in designated “poliovirus-essential” facilities, with the simultaneous nomination of a national containment authority in countries hosting such facilities. By the end of July 2016, three months after the switch, countries are expected to complete the second part of Phase I, and report on the destruction or planned retention of all Sabin type 2 poliovirus materials following the same approach. In Phase II (the poliovirus type 2 containment period that started in 2016) Member States hosting poliovirus-essential facilities (vaccine production, research and repositories) are expected to certify these facilities against appropriate implementation of the containment requirements described in GAPIII. The Secretariat is supporting Member States to rapidly accelerate efforts in order to complete Phase I and implement the Global Action Plan.

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<sup>1</sup> Global Polio Eradication Initiative Semi-Annual Status Report, January to June 2015, available at [www.polioeradication.org](http://www.polioeradication.org) (accessed 21 March 2016).

<sup>2</sup> See [http://www.polioeradication.org/Portals/0/Document/Resources/PostEradication/GAPIII\\_2014.pdf](http://www.polioeradication.org/Portals/0/Document/Resources/PostEradication/GAPIII_2014.pdf) (document WHO/POLIO/15.05, accessed 21 March 2016).

## LEGACY PLANNING

18. In 2015, acceleration of polio legacy planning continued. Legacy planning should serve three purposes. First, it ensures that those functions needed to maintain a polio-free world after eradication (for example, immunization, surveillance, outbreak preparedness and response, and facility containment of polioviruses) are brought into the mainstream of continuing national public health programmes. Secondly, it ensures that the knowledge generated and lessons learned from polio eradication activities are shared with other health initiatives. Thirdly, where feasible and appropriate, it assures the transfer of capabilities, assets and processes in order to support other health priorities.

19. Polio legacy planning needs primarily to occur at national level. The leadership of Member States is crucial to this process. If polio legacy planning is well-executed, investments in polio eradication will benefit other development goals in the long term. Human resources, facilities and processes funded through the Global Polio Eradication Initiative are substantially involved in the delivery of non-polio eradication functions, particularly in the areas of immunization, surveillance and emergency response. A successful legacy planning process will ensure that these essential functions are sustained after polio eradication funding ceases. In order to support Member States in the process of polio legacy planning, the Global Polio Eradication Initiative has developed guidelines for preparing a transition plan.<sup>1</sup>

## FINANCE AND MANAGEMENT OF THE GLOBAL POLIO ERADICATION INITIATIVE

20. The mid-term review evaluated the future financial needs of the Global Polio Eradication Initiative and developed different financial scenarios. The Polio Oversight Board endorsed a revised financial scenario, which took account of the delay encountered in achieving interruption of wild poliovirus transmission, resulting in the need for an additional year of intense polio eradication activities. The scenario foresees an increase in budgetary requirements of US\$ 1500 million.

## ACTION BY THE HEALTH ASSEMBLY

21. The Health Assembly is invited to note the report and to urge Member States to ensure full implementation of resolution WHA68.3.

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<sup>1</sup> Global Polio Eradication Initiative. Polio legacy planning: guidelines for preparing a transition plan, revised 1 June 2015, available at <http://www.polioeradication.org/Resourcelibrary/Resourcesforpolioeradicators.aspx> (accessed 21 March 2016).