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Progress report on

Eradication of poliomyelitis

Contents

1. Introduction

In 1988, the Regional Committee for the Eastern Mediterranean issued resolution EM/RC35/R.14 adopting the goal of poliomyelitis eradication. Since then, the implementation of eradication strategies has reduced the number of countries endemic for polio in the Eastern Mediterranean Region from 22 countries to only two (Afghanistan and Pakistan) at the end of 2006.

The large-scale epidemics experienced in 2004 and 2005 due to poliovirus importation from Nigeria had completely stopped in Sudan and Yemen by the end of 2006, with only Somalia having remaining wild virus circulation in limited areas.

2. Current situation in the Eastern Mediterranean Region

2.1 Regional progress

In 2006, the number of poliomyelitis cases reported in the Eastern Mediterranean Region was the lowest ever recorded in the Region (107). The majority (71 cases) were from the two endemic countries, and 36 were from re-infected countries. By end May 2007, circulation of wild poliovirus in the Region was restricted to limited areas in Pakistan (9 cases) and Afghanistan (2 cases). In addition, 8 cases were reported from known areas of transmission in Somalia along the border with Ethiopia. In these areas there are still many challenges facing the programme, especially in relation to security.

In the past year, the Region has taken a lead role in introduction of new tools that are enhancing the impact of eradication strategies, including monovalent oral poliovaccine and new laboratory methods to reduce the time needed to confirm the diagnosis.

Despite ongoing viral circulation in the two remaining endemic countries in the Region, progress is evident by the decrease in diversity of circulating viruses, geographical restriction of transmission and longer periods of time between cases. As a result of shared ethnic and cultural traditions and very strong social and commercial links, there is considerable population movement between both countries. Additionally, the epidemiological and genetic patterns of the viruses isolated from each country provide evidence that the two countries are one and the same epidemiological block. Hence, success in stopping transmission will only be achieved through joint and highly coordinated efforts between the two countries.

The national, regional and global Technical Advisory Groups have indicated that the opportunity for stopping transmission from Afghanistan and Pakistan during 2007 is strong.

2.2 Highlights on endemic and re-infected countries

Afghanistan

After more than one and a half years with no cases due to wild poliovirus type 1, transmission of type 1 virus reached epidemic proportions in the southern region in 2006, resulting in 26 cases. In addition, there were three other cases due to type 1 poliovirus in other regions; one each from Farah, Baghlan and Nangarhar. Two cases due to type 3 poliovirus were reported from the southern region in 2006, representing re-introductions from Pakistan. By June 2007, only two type 1 cases had been reported from the southern region.

The main reasons behind the outbreak in the southern region were the prevailing security situation and instability, which were reflected in poor performance in all public health programmes in the south, including poliomyelitis eradication. However, good efforts and successes continued in other parts of the country. AFP surveillance is being maintained at the global standard and most probably the programme is not missing any transmission.

During 2006, 5 national immunization days (NIDs) and six subnational immunization days (SNIDs), mostly targeting the southern region, were conducted. In 2007, 2 NIDs and 3 SNIDs targeting the southern region have been conducted so far. The reported aggregate coverage rates of supplementary immunization activities were in general very high, and were reaffirmed by independent monitors.

However, access to some areas in the south continues to be a challenge, and quality of supervision and monitoring are also affected.

Efforts to address the challenging situation in Afghanistan include advocacy to ensure political support and involvement. President Hamid Karzai formed a national level Polio Eradication Action Group to oversee polio eradication activities in Afghanistan and instructed district governors to increase their support to eradication. Efforts to ensure days of tranquillity between parties in conflict are ongoing, although such efforts were unsuccessful in 2006. The "focused district strategy" was introduced by conducting one-day operations using village-based vaccination teams to make use of windows of opportunity and strengthen community involvement. Monovalent OPV1 was used in four of the 2006 supplementary campaigns and two of the 2007 campaigns, and OPV was added to measles and tetanus immunization campaigns in the southern and southeastern regions.

Pakistan

Out of 28 cases that occurred in 2005, only one case was due to type 3 poliovirus. The use of monovalent OPV1 (mOPV1), which was introduced in the last part of 2005, was continued in campaigns in some districts with the aim of stopping transmission of wild poliovirus type 1. This strategy successfully reduced the number of cases due to type 1 poliovirus. However, the apparently dormant type 3 virus resurged, particularly in areas where routine immunization is weak, such as Sindh province (8 cases) and Baluchistan (6 cases). The total number of cases reported from Pakistan in 2006 was 40 cases, divided equally between type 1 and type 3. In 2007, only 9 cases have been reported to date: three type 1 and six type 3. Circulation of poliovirus type 3 has been confined to the area of northern Sindh and adjacent districts in Baluchistan.

Surveillance activities remained at certification standard and the polio laboratory continued to perform at exceptionally high standard, serving both Afghanistan and Pakistan. Genomic sequencing of isolated viruses from both countries is showing an evident decrease in genetic diversity of polioviruses, from 10 sub-clusters in 2005 to 7 in 2006 to 3 in 2007 (to date).

During 2006, six rounds of NIDs and six SNIDs were conducted. In 2007, 2 NIDs and 3 SNIDs have been conducted to date. Though campaign quality has improved, in known zones of transmission the quality of campaigns has not yet reached the level necessary to interrupt transmission. This is mainly due to limitations on access to most of these areas and inadequate engagement of some of the authorities at provincial and district levels.

To address the challenges facing the programme, efforts focused on ensuring full engagement of the national leadership at all levels and identifying zones and populations of transmission in order to concentrate immunization activities using the appropriate mix of monovalent and trivalent vaccines.

Somalia

After 3 years of being polio-free, the first wild poliovirus (P1) was detected in Mogadishu in July 2005. The virus was genetically linked to a virus circulating in Yemen at that time. A total of 185 polio cases were reported in 2005 (85% from Mogadishu). Circulation continued in 2006 with 35 polio cases detected (19% from Mogadishu). All cases reported from July to December 2006 belong to one area (Burao) in Togdher Region of northwest Somalia (Somaliland). The outbreak affected 14 of 19 regions and is clearly on the decline, with only 8 cases reported up to the end of May 2007.

Several rounds of supplementary immunization activities were implemented in Somalia prior to and following the outbreak using mOPV1. Activities have continued in 2007, with 2 NIDs and 3 SNIDs implemented to date, all using mOPV1. The overall reported coverage is high. However limited data from post-campaign evaluation showed significant gaps in the quality of some campaigns, mainly due to difficulty in reaching nomadic populations, large numbers of refusals in large towns and sub-optimal performance of vaccination teams and supervisors.

Efforts are also ongoing to coordinate activities in the Horn of Africa, where most of the immunization campaigns are synchronized between Somalia, the Somali region of Ethiopia, northeast Kenya and Djibouti. All major surveillance indicators were achieved at national level during 2006. The situation

in Somalia is complicated by prevailing insecurity, very limited infrastructure, poor routine immunization, large nomadic population and porous borders with high population movement. The main challenge continues to be the security situation, which affects implementation of high quality supplementary immunization activities and AFP surveillance.

3. Implementation of polio eradication strategies

3.1 Routine immunization

High routine immunization coverage of infants is one of the basic strategies of polio eradication. The crucial role of high routine coverage is highlighted by the importation experiences, where imported poliovirus resulted in large outbreaks in countries with low coverage compared with sporadic cases without secondary spread in countries with high routine coverage.

Polio eradication activities continue to support and strengthen routine immunization. The polio eradication workforce helps to strengthen routine immunization. The significant investment made by the polio eradication programme in training various levels of national health workers in micro-planning, campaigns implementation, monitoring and evaluation has increased their capacity to support immunization programmes.

The surveillance structure developed for AFP surveillance has proved to be capable of supporting other EPI programmes such as measles elimination. The established laboratory network for polio eradication is now extending laboratory services for EPI diseases and other diseases of public health importance.

3.2 Supplementary immunization activities

Priority attention continued to be given to implementing supplementary immunization activities, with the aim of ensuring that all children under 5 years are immunized against polio, especially in countries with low routine coverage.

In 2006, more than 342 million doses of OPV were given in national and subnational immunization campaigns. Afghanistan, Pakistan and Somalia carried out supplementary immunization activities throughout the year at 4–6 week intervals. To guard against spread after importation, some polio-free countries conducted campaigns addressing mainly high-risk areas and areas with low routine coverage.

Campaigns were conducted from house to house, targeting all children less than 5 years of age. Extensive efforts were made to ensure high quality. Multisectoral approaches were implemented to involve governmental and nongovernmental sectors and included intensified social mobilization and supervision activities. Detailed micro-plans with maps were developed and used to reach every child, with special focus on risky areas and difficult-to-reach groups. Monovalent vaccine was used to maximize type-specific immune response. Finger-marking was used to guarantee that no child was missed. Independent monitors observed campaigns, and their remarks helped to pinpoint problems that were resolved by the responsible authorities. NIDs were coordinated between countries and supplementary immunization activities continued to develop national capacities at all levels and were also used to provide other services, such as delivering life-saving vitamin A.

3.3 Surveillance for acute flaccid paralysis

All infected or recently polio-free countries in the Region are maintaining the required level of AFP sensitivity, and the regional non-polio AFP rate reached 3.8 per 100 000 population under 15 years in 2006. The minimum required level of 1 per 100 000 was not reached in 3 countries, all with a small number of expected cases.

The second key quality indicator for surveillance is percentage of AFP cases with adequate stool collection. In 2006, this indicator was maintained above the target of 80% at the regional level (89.2%) and in 18 of the 22 countries of the Region.

The AFP surveillance reviews conducted in 2006 confirmed the quality of the surveillance systems and their ability to detect any possible wild poliovirus.

The performance of the regional polio laboratory network is sustained at certification standard. In 2006, all network laboratories passed the WHO proficiency test and were fully accredited, except the Kuwait national laboratory, which was provisionally accredited.

All laboratory performance indicators were well above the targets set in 2006 except transportation of samples within 3 days of collection, which was slightly below target due to some logistical and security challenges. Timeliness of reporting the virological investigation results, from onset of paralysis to final results, has improved significantly, particularly with the implementation of the new testing algorithm. Final results can now be obtained in just under 2 weeks after the stool samples were received in the laboratory. The testing algorithm was introduced in the Pakistan laboratory and will be implemented in the whole network by mid 2007.

As the target of eradication means, it is critical to sustain the sensitivity and quality of AFP surveillance in all countries of the Region. This will provide the information necessary to guide programme activities for virus interruption in endemic and infected countries and for timely detection and response to any wild poliovirus importation in polio-free countries.

4. End-game issues

4.1 Laboratory containment of wild poliovirus and potential infectious material

Sixteen countries have completed phase 1 containment activities (laboratory survey and inventory); the other 6 countries are in the process of completing the survey. To date, 21 858 laboratories have been surveyed and only 7 laboratories have been identified as storing wild poliovirus material.

4.2 Certification of poliomyelitis eradication

In addition to basic national documents, final national documents for regional certification were accepted from 12 countries that have been polio-free for 5 or more years and have completed phase 1 of laboratory containment. Provisional national documents from countries with ongoing poliovirus circulation (Afghanistan, Pakistan and Somalia) were reviewed by the Regional Commission for Certification of Poliomyelitis Eradication and all countries will continue to submit annual updates until regional certification has taken place.

5. Technical and financial support to countries

Technical support to the regional polio eradiation programme is continuing, using about 100 international and over 900 national polio staff in addition to teams of experts constituting both regional and country TAGs, which are advising the national programmes on strategic directions. All polio staff are extending support to EPI as well as helping to address other priority health programmes at country level.

Technical support and coordination is being extended to neighbouring countries of other WHO regions. Several coordination meetings for the Horn of Africa took place in 2006 and the Horn of Africa bulletin was initiated and is being issued regularly. As well, a Horn of Africa Technical Advisory Group was established and met in August 2006 and again in April 2007. Synchronization of activities and exchange of information between countries has improved greatly. However, there is still room for improving direct coordination at local levels. Operation MECACAR is continuing between neighbouring countries of the Eastern Mediterranean and European regions, and its scope has been extended to include measles elimination as well.

Given the continued threat of poliovirus importation from Nigeria, the Regional Office continued to extend technical support to the polio eradication efforts in Nigeria. Many experts from the Region were provided to help in the planning and implementation of polio eradication activities in northern

Nigeria. As well, the Regional Office continued to support efforts to fight rumours about the vaccine and vaccination through seeking statements from leading religious scholars that call on parents and communities to vaccinate their children and that counter the unfounded rumours about the vaccine and vaccination.

Significant resources for the eradication efforts are being provided by the Member States, particularly with respect to routine immunization. In addition, considerable external financial resources were secured to support activities necessary to achieve the target, particularly with respect to the provision of vaccines, operational expenses and technical support needed to intensify supplementary immunization and continue surveillance activities. The estimated external resource requirements, according to the strategic plan for 2006, were in the order of US$ 100.7 million; these included US$ 41 million for vaccine, US$ 40.2 million for operational expenses, US$ 7.5 million for surveillance and laboratory and US$ 12 million for national and international staff. The actual expenditure during 2006 on operations and surveillance was 10% higher than the estimate.

The main contributors to these funds were the UK Department for International Development (DFID), Rotary International, Government of the United States of America, Bill & Melinda Gates Foundation, the Government of Canada, the European Community, Governments of Russia, France, Germany and Saudi Arabia, and United Nations Foundation. Recent resource mobilization efforts were successful in Pakistan and secured the contribution of the Government of Pakistan to OPV costs for planned supplementary immunization in 2007. Additional financial contributions to the polio eradication programme activities in the Region were made by Member States such as Kuwait in 2007.

6. Regional commitment for polio eradication

With the goal of stopping transmission in the Region closer than ever, regional commitment for poliomyelitis eradication is now at its highest level, with national authorities in both endemic and polio-free countries showing great commitment.

The continued interest and regular review of the situation by the Regional Committee, along with the progressive guidance reflected in Regional Committee resolutions, are the driving force towards achieving this goal at regional level. The Regional Office has continued its advocacy efforts with dissemination of information and regular updates and alerting national authorities to developments. The Regional Director continued to pay visits to priority countries and met with Heads of State, Prime Ministers, Ministers of Health and other senior national officials, who assured him of their continuing commitment to eradication efforts.

The commitment of the two endemic countries of the Region, Pakistan and Afghanistan, was reaffirmed during the recent stakeholder’s consultation in Geneva in February 2007, as well as during the visit of the WHO Director-General and Regional Director to both countries and in subsequent meetings held with high-level officials including President Hamid Karazi of Afghanistan and Prime Minister Shaukat Aziz of Pakistan.

7. Challenges and future directions

The main challenges facing the programme include securing necessary resources both from national funds and external resources, maintaining interest and commitment of national authorities and the public and reaching children living in security-compromised areas with the necessary vaccine.

Regional priorities for polio eradication during 2007 are as follows.

- Interrupt transmission in the remaining endemic countries before the end of 2007. It is mandatory to sustain political commitment at all levels, continue close coordination between Afghanistan and Pakistan, ensure engagement of the leadership at all levels and negotiate periods of tranquillity in security-compromised areas. It is also important to continue supplementary immunization activities with the same intensity and to concentrate on known zones of transmission with mop-up quality campaigns.

- Interrupt transmission in Somalia and continue to improve quality of supplementary immunization activities, ensure access to children, address issues of refusals and implement special plans for nomadic populations.
- Avoid large immunity gaps in polio-free countries; through improvement of routine immunization and implementation of supplementary immunization activities, especially in foci of low population immunity.
- Maintain certification-standard surveillance with focus on performance and indicators at subnational level and among high-risk areas and populations.
- Strengthen coordination activities between neighbouring countries, especially between Afghanistan and Pakistan and in the Horn of Africa, including synchronization, exchange of information and local level planning and coordination.
- Continue with containment and certification activities.
- Optimize collaboration with EPI.
- Make available the financial resources required to implement the regional plan for eradication.