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**COORDINATION OF  
"OPERATION MECACAR"  
MASS VACCINATION WITH ORAL  
POLIOVIRUS VACCINE**

Meeting to mark  
World Health Day, 7 April 1995

Ankara  
29-30 January 1995

## ABSTRACT

A meeting to coordinate the planning and implementation of synchronized national immunization days (NIDs) against poliomyelitis in Member States of the European and Eastern Mediterranean Regions of WHO (Operation MECACAR) was held in Ankara, Turkey, on 29–30 January 1995. Representatives of 16 countries or national authorities and of international, non-governmental and other organizations took part.

The main objectives of the meeting were: to demonstrate international cooperation and the commitment to support national immunization programmes and disease control efforts; to improve cooperation between the European and Eastern Mediterranean Regions of WHO and the national staff of the countries involved in the operation; to review the poliomyelitis situation in all participating countries; and to guide the national immunization managers on technical issues regarding preparation for NIDs. Special attention was paid to the experience of certain countries (Afghanistan, Azerbaijan, Pakistan, Syria and Uzbekistan) that had already conducted NIDs during 1994. There was general agreement that surveillance is gradually improving, but will require substantial strengthening to detect and to investigate all cases of acute flaccid paralysis and to permit the eventual certification of poliomyelitis eradication. Detection and investigation of cases is often inadequate, and the collection and virological testing of stool specimens is far from complete.

The countries participating in Operation MECACAR were committed to conducting NIDs during March–May 1995, and to continue such action during 1996–1997.

### *Keywords*

COMMUNICABLE DISEASE CONTROL  
IMMUNIZATION  
POLIOVIRUS VACCINE, ORAL  
EUROPE  
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MIDDLE EAST

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## INTRODUCTION

A meeting to coordinate the planning and implementation of synchronized immunization days against poliomyelitis in Member States of the European and Eastern Mediterranean Regions of WHO that would be participating in "Operation MECACAR" (see page 5) was held in Ankara, Turkey, on 29–30 January 1995. Representatives of 16 countries or national authorities, WHO, UNICEF, Rotary International, the International Federation of Red Cross and Red Crescent Societies, the US Agency for International Development (USAID), the Centers for Disease Control and Prevention, Atlanta (CDC), Basic Support for Institutionalizing Child Survival (BASICS) and the Turkish International Cooperation Agency participated in the meeting. Sir Joseph Smith chaired the meeting. Dr Roland Sutter served as Rapporteur and Dr George Oblapenko as Secretary. The participants are listed in Annex 1.

Experience has demonstrated conclusively that achievement of high routine vaccine coverage can be insufficient to secure poliomyelitis eradication; it is therefore essential to adopt supplementary immunization activities, particularly national immunization days (NIDs) and mopping-up and containment activities. In addition, the development of effective surveillance is critical.

## SCOPE AND PURPOSE

The main objectives of the meeting were:

- to demonstrate international cooperation and the commitment to support national immunization programmes and disease control efforts;
- to establish improved cooperation between the European and Eastern Mediterranean Regions of WHO and the national staff of the countries involved in Operation MECACAR;

- to review the poliomyelitis situation in all countries participating in Operation MECACAR;
- to guide the national immunization managers on technical issues regarding preparation for NIDs; and
- to brief the national immunization managers on the regional plan of action and on the external assistance to be provided to the countries.

## SITUATION ANALYSIS AND PROGRESS TOWARDS POLIOMYELITIS ERADICATION

### Global overview

Although substantial progress towards poliomyelitis eradication has been achieved in recent years, continued progress and more accelerated efforts are needed to achieve the objective of eradication by the year 2000. Worldwide vaccination coverage substantially improved during the last decade. In 1985, only 48% of infants routinely received three doses of oral poliovirus vaccine (OPV) in the first year of life. By 1990, with the support of the Child Vaccine Initiative, the proportion reached a peak of 85%, and has since stabilized at approximately 80%. Improving routine coverage rates, as well as the adoption of supplementary immunization activities (including NIDs, which were conducted in 41 countries during 1993), has led to a substantial reduction in the number of poliomyelitis cases reported globally. WHO estimates that only some 6000–7000 cases of poliomyelitis will be reported worldwide in 1994 – the lowest incidence ever recorded. However, to ensure that global poliomyelitis eradication is achieved by the year 2000, the remaining endemic countries must adopt the proven strategies that have already led to poliomyelitis eradication in the western hemisphere. These include:

- achieving high routine vaccination coverage in all geopolitical or administrative areas;

- strengthening surveillance and case investigations; and
- supplementing immunization activities, including NIDs, mopping-up operations and outbreak-response immunization.

The Region of the Americas was certified free of wild poliovirus in 1994 by the International Certification Commission. Other areas have reported considerable progress during 1994, including countries of the Western Pacific and Eastern Mediterranean Regions; poliomyelitis-free areas are emerging in western and central Europe, southern and northern Africa, and the Arabian Peninsula. Some areas, such as southern Asia (with the exception of Bangladesh and Pakistan), are lagging behind. Despite the progress already achieved, constraints in funding, lack of political commitment, the need for further development of the global laboratory network, and incomplete promotion and implementation of the proven strategies for eradicating poliomyelitis, continue to delay progress.

### **European Region**

In 1994, the WHO European Region reported vaccination coverage of 82–83% with three doses of OPV in the first year of life. However, only 26 countries reported coverage greater than 80% in 1994, compared with 31 countries in 1991. An increasing number of countries have begun to strengthen surveillance and reporting: by 1993, a total of 16 countries had implemented acute flaccid paralysis surveillance. Although the countries of the European Region have had a low incidence of poliomyelitis for many years, reported cases reached a plateau of approximately 200 per year during the 1990s. The vast majority of these were reported from the newly independent states of the former Soviet Union and from Turkey. The remaining endemic countries of the European Region increasingly realize that, in order to eradicate poliomyelitis, the WHO strategies that have proved successful in other areas must be adopted and fully implemented.

### Eastern Mediterranean Region

In the Eastern Mediterranean Region of WHO, vaccination coverage with three doses of OPV by one year of age was only 30% in 1984 but by 1993 it had increased to over 80%. Increasing vaccination coverage led to corresponding decreases in the number of reported poliomyelitis cases. In addition, poliomyelitis-free zones are beginning to emerge in the Maghreb, the Gulf and the Middle East. Substantial progress was achieved during 1994 in the following areas:

- surveillance assessments were conducted in many countries of the Region;
- coordination was strengthened;
- national certification commissions were constituted in many countries;
- interagency coordination committees are being established;
- feedback of surveillance data within the Region is occurring; and
- case reporting to the Regional Office is improving (by the end of January 1995, 96% of expected monthly reports had been received).

Despite this progress, four countries (Afghanistan, Somalia, Sudan and Yemen) reported routine coverage with three doses of OPV of less than 60%. The constraints impeding further progress include inadequate political and financial support, inadequate surveillance and case investigation, war and civil strife, and insufficient vaccine. In 1995, the Region has given priority to supporting surveillance follow-up visits, evaluating NIDs and increasing support for the regional laboratory network.

## OPERATION MECACAR

The theme of World Health Day on 7 April 1995 is "Target 2000 - A World Without Polio". In conjunction with World Health Day activities, 18 geographically contiguous countries in Europe, central and southern Asia and the Middle East are conducting coordinated NIDs with OPV. This effort has been designated "Operation MECACAR" (MEDiterranean, CAucasus, and Central Asian Republics).

To maximize the impact of the operation and to accelerate the expansion of the poliomyelitis-free zone, adjoining parts of Europe (Armenia, Azerbaijan, Bulgaria, Georgia and Turkey), central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan), southern Asia (Afghanistan, Iran and Pakistan) and the Middle East (Iraq, Jordan, Lebanon, Palestine and Syria) agreed to conduct simultaneous mass vaccination campaigns with OPV. A total of 56 million children aged under 5 years are each to receive two spaced doses of OPV.

The participating countries in each Region provisionally reported a high proportion of the total poliomyelitis cases in their respective regions in 1994 (i.e. European Region, 200 out of 211 (95%); Eastern Mediterranean Region 669 out of 973 (69%)). Some of these countries have previously conducted NIDs, including Iran (1994), Lebanon (1994), Pakistan (1994), Syria (1993 and 1994) and Uzbekistan (1994), while others have conducted subnational immunization days. Based on the desirability of scheduling mass vaccination campaigns during the low poliomyelitis incidence season, either the first (European Region) or the second round (Eastern Mediterranean Region) of NIDs has been scheduled for on or around 7 April. Countries participating in Operation MECACAR are planning to repeat NIDs in 1996 and 1997.

## COUNTRY EXPERIENCES WITH MASS VACCINATION CAMPAIGNS

### **Afghanistan**

Afghanistan has experienced internal strife and civil war for more than a decade. Despite these difficulties, an increasingly successful effort is under way to improve vaccination coverage and reduce the incidence of vaccine-preventable diseases. At present, Afghanistan lacks a national disease surveillance system and the national immunization programme does not have access to all areas of the country. To improve vaccination coverage and to reduce the morbidity and mortality of vaccine-preventable diseases, Afghanistan conducted a mass vaccination campaign with OPV for children under 5 years, measles vaccine for children under 2 years, and tetanus toxoid for women of childbearing age (15-44 years) during 19-25 November 1994. In addition, vitamin A was provided to children under 5 years of age. These efforts were carried out under the protection of negotiated cease-fires in the targeted areas. However, because of continuing internal strife in other areas, only 40% (OPV), 41% (measles vaccine), and 13% (tetanus toxoid) of the total population in the country were targeted to receive each vaccine. Vaccination coverage in the targeted age groups was 80% with OPV, 98% with measles vaccine, and 32% with tetanus toxoid. The success of the campaign was due to political commitment, negotiation of a cease-fire in the targeted areas, good planning, the commitment of health staff to carrying out the campaign, and support from multilateral and bilateral donor agencies.

### **Azerbaijan**

During 1993, a total of 63 cases of poliomyelitis were reported from Azerbaijan, largely due to OPV shortages. In response to this, NIDs with OPV vaccination were carried out during April and May 1994 in children under 3 years of age. The coverage achieved with OPV during each round was 93-94%. In 1994, 17 cases of poliomyelitis were reported. The success of the NIDs conducted in 1994 was due to political commitment, extensive social mobilization and the dedication of the health staff.

## Iran

Although Iran had achieved very high routine coverage (over 95%) with three doses of OPV among infants by the age of 11 months, poliomyelitis cases continued to be reported. To interrupt the circulation of poliovirus, NIDs were conducted in Iran for the first time in 1994. Two doses were administered to children aged 0–59 months, at an interval of 4 weeks, irrespective of previous vaccination histories. Rather than relying on fixed vaccination sites, OPV was administered house-to-house. The OPV used was produced locally by the Iran Razi Institute, and shortfalls were covered with imported vaccine. Some 9 million doses were administered during the first round and 9.2 million during the second, giving an estimated coverage of nearly 100%. The success of the NIDs in Iran was due to political commitment, good planning, excellent social mobilization, and the contribution of approximately 400 000 trained volunteers.

## Pakistan

Pakistan reported a total of 1803 cases of poliomyelitis in 1993, and a provisional total of 520 cases in 1994. The country conducted NIDs for the first time in 1994 (first round on 27 April and the second on 28 May 1994). Vaccine availability was confirmed only on 15 March, about six weeks prior to the first round. Despite the limited time available for planning the NIDs were conducted very successfully, with national coverage rates of 95.7% during the first round (range 89.2% in the Federal Administered Northern Areas (FANA) to 96.9% in Punjab province) and 97.6% during the second round (range 90.8% in FANA to 102.3% in Islamabad Capital Territory (ICT)). Each round lasted one day. The vaccination coverage achieved was estimated by the doses administered. The success of the NIDs was attributable to national commitment, good planning, excellent social mobilization, an extensive network of nearly 150 000 vaccination sites and the utilization of nearly 600 000 vaccinators, paramedics, teachers, volunteers and supervisors during each round.

## Syria

Syria reported 13, 24 and 22 cases of poliomyelitis in 1990, 1991 and 1992, respectively. Acute flaccid paralysis (AFP) surveillance was instituted in 1992, and 4, 22 and 46 cases of AFP were reported in 1992, 1993 and 1994, respectively. Despite an improving surveillance system that reported an increasing number of AFP cases, no poliomyelitis cases were detected in 1993 and 1994. NIDs were first implemented in Syria during 1993, and were repeated in 1994. In 1994, 3.15 million doses of vaccine were administered during the first round and 3.03 million during the second round (estimated coverage over 90%). Each round lasted for one week. The success of NIDs was due to national commitment, good planning, excellent social mobilization, and an extensive vaccination network of 2018 fixed sites and 423 mobile teams.

## Turkey

Turkey reported 24 cases of poliomyelitis in 1993 and 23 cases in 1994. Provincial immunization days (PIDs) were conducted in two provinces (Izmir and Sanliurfa) in 1994. Two rounds, four weeks apart, were conducted on 26 November and 24 December 1994. The PIDs were very successful: 95.3% (Izmir) and 94.6% (Sanliurfa) of the target population received a dose of OPV during the first round, and 97.7% (Izmir) and 94.4% (Sanliurfa) during the second round. The success of PIDs was due to political commitment at all levels but especially that of the governors, strong intersectoral cooperation, and extensive social mobilization and promotion activities. The PIDs provided invaluable experience, the lessons from which will be applied to the NIDs planned for 1995.

## Uzbekistan

Uzbekistan was one of the republics in the former Soviet Union that pioneered the use of mass OPV vaccination programmes in 1958. Although control of poliomyelitis (i.e. low incidence) was rapidly achieved in Uzbekistan, elimination and eradication remained an elusive goal. After achieving independence in 1991, vaccine short-

ages were responsible for the re-emergence of epidemic poliomyelitis. Uzbekistan reported 68 cases (33.6% of the European Region total of 202 cases) in 1993, and 117 cases in 1994 (55.7% of the European Region total of 210 cases). The outbreak was largely confined to the Samarkand oblast from March 1993 to April 1994, and to the Kashkadarya oblast starting in July 1994 (with an explosive outbreak of 77 cases). To control the outbreak, two rounds of NIDs were conducted on 10 October and 10 November 1994. The target population was children aged 0-59 months. Coverage with OPV achieved during each round was greater than 97%. The success of the NIDs in Uzbekistan was due to political commitment, good planning, excellent social mobilization, an extensive network of vaccination sites, and the recruitment of volunteers.

## PLANNING OF NIDS

The success of NIDs depends on the extent and depth of planning and preparation at all levels of the government, the achievement of intersectoral cooperation with other ministries and agencies (including teachers, the police and the military), the recruitment of sufficient human resources (including volunteers), the effective dissemination of information (social mobilization) and especially on the political commitment and support of government leaders at all levels.

The countries participating in Operation MECACAR have realized that high routine vaccination coverage is not sufficient to ensure poliomyelitis eradication. They are therefore committed to conducting in Operation MECACAR, coordinated NIDs in 1995 and also annual NIDs in 1996 and 1997. Effective planning had already begun in many of the participating countries prior to the meeting. In addition, in both Regions, there is a wealth of previous experience to draw on from countries that have successfully conducted NIDs.

The 13 keys to planning successful NIDs are:

1. to ensure high level commitment and consensus;
2. to ensure adequate financial resources;

3. to plan in advance;
4. to involve the private sector, nongovernmental organizations (NGOs), religious leaders, schools and communities;
5. to calculate and characterize the target population;
6. to establish structures and responsibilities at all levels ("cascade effect");
7. to develop a standard schedule (who, what, when);
8. to ensure good logistics;
9. to ensure good social mobilization;
10. to make special efforts for "special populations";
11. to exercise supervision at each level;
12. to ensure efficiency and good services at the vaccination site; and
13. to plan to evaluate.

The most common errors or problems during NIDs are:

- lateness in beginning preparations or ordering vaccines;
- unclear designation of responsibilities;
- inadequate distribution of supplies to vaccination sites or teams;
- inadequate transport;
- inadequate participation by the community, schools, NGOs, religious leaders, or the private sector;
- recording too much information during NIDs, causing long queues at vaccination sites;
- overcrowding or long queues at vaccination sites due to inefficient flow or inadequate number or distribution of posts;
- inadequate awareness by the community about NIDs;

- vaccination sites not open early enough, late enough or during lunch hours to be accessible to working parents (especially in urban and suburban areas);
- inadequate feedback to peripheral levels on success of NIDs; and
- subsequent rounds of NIDs become "too routine".

## MONITORING PERFORMANCE AND EVALUATING NIDS

The most important indicator for evaluating the success of NIDs is to subsequently monitor, through effective surveillance, the incidence of poliomyelitis over time. Poliomyelitis cases that occur following NIDs should be analysed to identify patterns of clustering by age, geographical area or high-risk group. For the purposes of calculating vaccine and other requirements and estimating coverage following NIDs, a single set of figures for the eligible population by administrative division (district or province) should be established by the national planning committee. Routine assessment of coverage with OPV should be made at national, provincial and district levels using agreed routine methods. Special coverage surveys are not recommended for routine or widespread use, but may be indicated selectively in high-risk population groups or geographical areas, since achieving high coverage in these groups is usually most critical to interrupting poliovirus transmission. In addition to estimating coverage, the special coverage surveys should also attempt to determine the reasons why any targeted children were not vaccinated. Supervisory visits should be made by NIDs coordinators or monitoring teams to assess preparations at province and district levels, and the findings of these visits should be a part of the qualitative evaluation of the organization of the NIDs. Marginal or high-risk populations should be identified during the planning stage. Operational provisions should be made to ensure services are available to these groups during NIDs and evaluation should focus especially on them.

Evaluation of NIDs should be conducted using simple and inexpensive methodology, and chiefly for the purpose of detecting operational problems.

## FINDINGS AND CONCLUSIONS

1. Most countries participating in Operation MECACAR have achieved high (over 80%) routine immunization coverage; some countries, however, experienced temporary abrupt declines in immunization coverage due to civil unrest or interruption of vaccine supplies. This resulted in occasional outbreaks of poliomyelitis, which have been effectively controlled.
2. As a result of these immunization efforts, the incidence of poliomyelitis has gradually declined during the past 20 years. In the European Region, however, the incidence has reached a plateau in the past three years with approximately 200 cases per year.
3. Some countries have fully implemented the WHO eradication strategies, including NIDs, resulting in marked declines in the incidence of poliomyelitis or its apparent elimination.
4. In 1994, Iran, Lebanon, Pakistan, Syria and Uzbekistan successfully conducted NIDs. The effective use of the media and other means of social mobilization was critical in achieving the consequent high levels of coverage.
5. Surveillance is gradually improving but will require substantial strengthening to detect and investigate all cases of AFP, and permit the eventual certification of poliomyelitis eradication. Detection and investigation of cases is often inadequate, and the collection and virological testing of stool specimens is far from complete.

6. The countries participating in Operation MECACAR are committed to conducting NIDs during March–May 1995.
7. Effective coordination and cooperation is occurring among the coalition of countries and the organizations actively involved in the eradication initiative. This holds great promise in achieving the elimination of wild poliovirus from the large geographical area encompassed by Operation MECACAR.

## RECOMMENDATIONS

1. It is essential that there is commitment for participation in Operation MECACAR in 1995 and also for conducting NIDs in 1996 and 1997.
2. Since the impact of NIDs on the eradication of poliomyelitis will be maximized if they are conducted by all countries at roughly the same time rather than in isolation, it is recommended that the first or second round of NIDs in Operation MECACAR be conducted on or about 3–7 April 1995.
3. Further progress towards the eradication of poliomyelitis requires adoption and full implementation of the proven strategies by all countries. Countries should urgently implement the other supplementary immunization activities (i.e. mopping-up and containment), conduct effective surveillance of acute flaccid paralysis, and maintain the highest possible routine coverage.
4. With the dates of Operation MECACAR rapidly approaching, there is an urgent need to proceed with detailed planning at each level. Countries should develop detailed written plans that address all aspects of training and supervision, social mobilization, vaccine needs, logistics and budgeting. There is a need to establish specific deadlines by which each activity must be achieved.

5. All countries must strive to show political commitment at the highest level, such as by having the head of state endorse NIDs, participate in the opening ceremony, and possibly administer vaccine to children on the first day.
6. During the planning process for NIDs, special efforts are necessary to ensure vaccination of migrant populations and other high-risk, hard-to-reach groups. The evaluation of NIDs should include the assessment of the coverage achieved in these special populations.
7. NIDs should be seen as a national activity involving all sectors of government and community, whose representatives should be involved in planning from the earliest stage. The participation and support of the private health sector in conducting NIDs should also be encouraged.
8. Social mobilization and effective use of the media are critical to the success of NIDs. The use of the media and non-health sectors should be a national commitment, and should not be exclusively the responsibility of the ministry of health.
9. Monitoring and evaluation of NIDs is an essential component and should focus on identifying operational problems that will be corrected immediately in the field or in the planning of subsequent NIDs.
10. A high priority should be given to strengthening surveillance including linking virological investigations to data on suspected poliomyelitis cases, and to the use of surveillance performance indicators.
11. After the NIDs have been completed, evaluation may identify areas where performance was lower than expected. These high-risk areas should be targeted for supplementary immunization efforts, as should underserved, hard-to-reach populations,

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communities with low immunization coverage, and especially areas where surveillance has demonstrated that poliovirus transmission is continuing.

12. Anticipating the decline in the incidence of poliomyelitis as a consequence of Operation MECACAR, virological surveillance should be developed and strengthened in view of its increasingly important role. Consequently, the current lack of laboratory supplies and inadequate development of national laboratories in the newly independent states of the former Soviet Union is an urgent concern. National authorities, in collaboration with WHO, should take urgent action.
13. Governments should convene interagency coordinating committees comprising the national authorities and key external organizations involved in immunization, to enhance cooperation and communication and to help obtain the necessary resources.
14. The outstanding collaboration exemplified by Operation MECACAR should be continued by the prompt reporting of results to WHO, UNICEF and Rotary International within one month of the end of the second round. A follow-up meeting of the participating countries should be conducted to review achievements and problems and to plan for subsequent NIDs.

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