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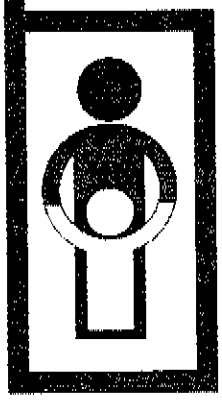
Global poliomyelitis eradication by the year 2000

Plan of action



GLOBAL PROGRAMME FOR VACCINES AND IMMUNIZATION
EXPANDED PROGRAMME ON IMMUNIZATION

World Health Organization
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Executive summary

In May 1988, the 41st World Health Assembly committed the World Health Organization (WHO) to global eradication of poliomyelitis by the year 2000. Considerable progress has been made since then. Poliomyelitis has been eradicated from the Western Hemisphere, and 150 countries are now reporting zero incidence of the disease. Worldwide, the number of cases is down by 83% and major areas of the world, including Western and Central Europe, North, Southern and Eastern Africa, the Middle East, the Arabian Peninsula and the Western Pacific are becoming polio-free. Current eradication strategies recommended by WHO have proved that the goal of eradication can be achieved. Over the next four years, while continuing to implement the recommended strategies worldwide, focus will be on conducting supplemental immunization activities in the remaining polio endemic countries, strengthening the capacity for acute flaccid paralysis (AFP) surveillance and certifying eradication in those regions which remain polio free for at least 3 years.

(1) Strategies

Four strategies are defined to achieve polio eradication. These are: (a) high, routine infant immunization coverage with oral polio vaccine (OPV), (b) national immunization days (NIDs), (c) acute flaccid paralysis (AFP) surveillance and laboratory investigation, and (d) mopping-up immunization campaigns.

(2) Activities supporting the strategies

A number of activities are necessary to support the implementation of the strategies for eradication. These include political commitment, both at global and national levels, advocacy and resource mobilization, interagency coordination, training of personnel (including volunteers), ensuring high quality vaccine in sufficient quantity, communication, laboratory development, research and realistic estimates of funding and personnel requirements.

(3) Staging and priorities

Countries can be staged in terms of their progress towards polio eradication to determine which activities are most appropriate according to the current epidemiology of poliomyelitis in the country.

Stage 1. Endemic countries

Countries with virological and/or epidemiological evidence of widespread poliovirus circulation or insufficient surveillance to rule out widespread circulation.

Stage 2. Countries with focal transmission

Countries with good quality AFP surveillance which have reduced the circulation of wild poliovirus to one or two focal areas.

Stage 3. Polio-free countries

Countries with no polio detected in the presence of high performance AFP surveillance.

Stage 4. Countries certified as polio-free

Countries with virological and epidemiological evidence of having eliminated indigenous wild poliovirus circulation and having been certified as polio-free.

1. Introduction

In May 1988, the forty-first World Health Assembly committed WHO to the global eradication of poliomyelitis by the year 2000 (resolution WHA 41.28). The Health Assembly emphasized that eradication efforts should be pursued in a way which strengthened the development of the Expanded Programme on Immunization (EPI) at all levels, fostering its contribution, in turn, to the development of primary health care. UNICEF and more than 130 world leaders adopted the same goal at the World Summit for Children in 1990.

This *Plan of Action* outlines the WHO strategy for polio eradication, revising the last plan published in 1992, and incorporating the recommendations of the first meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis which met in 1995, and the Technical Consultation on the Global Eradication of Poliomyelitis held in 1996.

2. Strategies

WHO continues to recommend four strategies to achieve polio eradication. These are: (1) high, routine infant immunization coverage with OPV, (2) national immunization days (NIDs), (3) acute flaccid paralysis (AFP) surveillance and laboratory investigation of cases, and (4) mopping-up immunization campaigns.

2.1 High, routine infant immunization coverage with OPV

Routine immunization is the foundation of the eradication initiative. Countries should aim to immunize at least 90% of infants against polio by one year of age through routine immunization services. Infants should receive 4 doses of OPV in their first year of life. These doses are part of the basic immunization coverage recommended by the Expanded Programme on Immunization (EPI) to protect children against major causes of morbidity and mortality in childhood, which include diphtheria, pertussis, neonatal tetanus, measles, tuberculosis, hepatitis B and yellow fever. High routine immunization coverage will reduce polio to low levels and set the stage for its eradication.

2.2 National immunization days

National immunization days (NIDs) are the most important activity for interrupting wild poliovirus circulation in endemic countries. During NIDs all children within a specified age limit (usually less than 5 years) receive two doses of OPV one month apart, regardless of their prior immunization status, in the low season for poliovirus transmission. NIDs are needed for at least 3 consecutive years to interrupt transmission. Additional NIDs may be required if routine immunization coverage is low (less than 80%) or when surveillance is inadequate. NIDs are a strategy for interrupting wild poliovirus transmission; they are not a strategy for increasing routine immunization through campaigns.

2.3 Acute flaccid paralysis surveillance and laboratory investigation

Acute flaccid paralysis (AFP) surveillance should be established in all countries to ensure that all cases of poliomyelitis are detected. The goal of AFP surveillance is to report and investigate "any case of acute flaccid paralysis, including Guillain-Barré syndrome, in a child aged less than 15 years and any case of suspected polio diagnosed by a physician". A number of indicators have been established to monitor the perfor-

mance of AFP surveillance systems. Most importantly, even in the absence of wild poliovirus circulation, surveillance systems should be capable of detecting at least one case of AFP per 100 000 population aged less than 15 years. At least 80% of AFP cases should have adequate[1] stool specimens collected.

Confirmation of paralysis due to wild poliovirus requires that the stool specimens from each AFP case are analysed in a WHO accredited laboratory. An international laboratory network has now been established under the auspices of WHO, consisting of national laboratories which undertake virus isolation and identification and regional reference laboratories which differentiate wild and vaccine viruses. Special reference laboratories support the network, conducting genetic sequencing studies on wild viruses to assist the identification of remaining routes of transmission. All network laboratories must successfully complete an accreditation process and use established indicators to monitor their performance.

2.4 Mopping-up immunization campaigns

Surveillance data are used to identify areas where the last cases of polio occur. These are high risk districts which have poor routine coverage, borders with endemic areas or insufficient surveillance. These areas are targeted and OPV is taken from door-to-door, administering 2 doses, one month apart, to all children under five, regardless of their prior immunization status. These intensive localized immunization campaigns improve coverage and ensure that those children most difficult to reach are immunized, thereby interrupting the last chains of wild poliovirus transmission. In addition to delivering supplemental OPV doses, mopping-up activities should include the active search for AFP cases.

[1] Adequate stool specimen: "Two samples of stool taken at least 24 hours apart, 0-14 days after onset of paralysis and arriving at the laboratory with sufficient quantity of ice present and appropriate documentation."

3. Activities supporting the strategies

3.1 Political commitment

Political commitment is required within and between countries. Commitment between polio-free countries and polio-endemic countries is critical for mobilizing and ensuring continued support for the global initiative. Experience has shown that within the countries the involvement of the head of state often guarantees success in mobilizing multi-sectoral support for transport, logistics and social mobilization.

3.2 Advocacy and resource mobilization

The budget for the polio eradication initiative clearly exceeds the currently allocated resources. Advocacy for the initiative at the global level will be required to ensure that sufficient resources are available to all countries where polio is, or was until recently, endemic, particularly those in greatest need.

3.3 Inter-agency coordination

As the activities for the eradication initiative are numerous and involve many different sectors and groups, interagency coordination is essential. The coordination of the work of the partners in the eradication initiative will ensure that all needs are met. The partners must be familiar with the recommended strategies and should be involved early in planning at the country level and regularly updated on progress.

3.4 Training of personnel

Sufficient numbers of skilled and experienced personnel must be available to support national immunization programmes as they commit themselves to polio eradication. Health workers need training in surveillance, while laboratory personnel require updating of their skills. In addition, volunteers will need training so as to participate in the supplementary immunization activities. Private sector groups likely to see cases of AFP should be involved in promoting surveillance activities and reporting of cases. These groups can become partners by including them in learning activities, national expert groups, immunization, surveillance activities and rehabilitation efforts.

3.5 Vaccine supply

A sufficient quantity of OPV which meets WHO standards must be available to meet the requirements of both routine and supplemental immunization activities. Although the global production capacity is sufficient, it must be maintained until global eradication is certified. A critical factor in ensuring the provision of adequate supplies of

vaccine will be to increase the effectiveness and timeliness of forecasting both demand and production capacity at national levels.

3.6 Communications

Communication issues include meetings to ensure exchange of experience and information (e.g. between EPI programme managers and laboratory directors); technical policy meetings, held annually to review progress and further develop policies within the global initiative; media coverage for public awareness and advocacy, and newsletters for feedback to all health staff.

3.7 Laboratory development

The essential responsibility of the laboratories working within the initiative is to ensure that crucial information relative to the circulation of wild polioviruses and the effectiveness of the immunization programme will be available in a timely manner. The priority activity for the laboratories remains the detection and identification of wild polioviruses in clinical samples from AFP cases. As the initiative progresses, isolation of polioviruses from the environment will become increasingly important, as will the use of molecular epidemiology to document the elimination of the last chains of wild poliovirus transmission.

3.8. Quality of vaccine at point-of-use

The availability and quality of polio vaccine at the point-of-use is critical to the success of the eradication strategy. Since OPV is sensitive to inactivation by heat it must be refrigerated during transport and storage, a substantial challenge in many tropical and less developed countries.

(a) Cold chain

The cold chain, a network of refrigerators, freezers and cold boxes, is the backbone of the Expanded Programme on Immunization. In many places, however, the equipment is old and non-functional. In addition, the phasing out of ozone-depleting chlorofluorocarbons (CFCs) means that more resources will be required for replacing out-dated cold chain equipment.

(b) Vaccine vial monitors

The recent introduction of vaccine vial monitors (VVMs) into the cold chain will enable health workers to ensure that the vaccine they administer has not been damaged by heat. VVMs will also enable countries to ascertain the reliability of the vaccine delivery and cold chain system and document the quality of the vaccine at the point of use. VVMs have permitted EPI to introduce an open vial policy, permitting open vials of OPV to be retained for use on subsequent days. This policy should reduce wastage significantly in the routine immunization programme.

3.9 Research

Relevant research topics will continue to develop as the eradication initiative progresses. At present, the major topics for research include: replacement of the monkey neurovirulence test for OPV safety by a cheaper test, new methods for rapid identifi-

cation of polioviruses, improved methods for environmental sampling, and methods for stopping immunization.

3.10 Estimating resource needs

Realistic estimates of funding and personnel requirements, based on experience gained in the field and formal cost-effectiveness studies, should continue to be used to facilitate donor support for polio eradication. These resource requirements will be reviewed and updated periodically.

4. Objectives for global eradication

4.1 By the year 1997:

- All endemic countries will have conducted at least one NID.
- All endemic countries will have established AFP surveillance.
- Every case of AFP will have been investigated by an accredited laboratory.
- All national laboratories in the global network will have been accredited.
- Wild poliovirus transmission will have been interrupted in the European and the Western Pacific Regions and indigenous transmission of wild poliovirus will have ceased in Northern and Southern Africa and the Middle East.
- A strategic plan for disposition of poliovirus stocks will have been developed.

4.2 By the year 2000:

- At least three years of NIDs (six rounds) will have been implemented in all high-risk countries in the African, Eastern Mediterranean and the South-East Asia Regions.
- All recently endemic countries will have high performance AFP surveillance.
- Wild poliovirus transmission will have been stopped in all countries.
- The Western Pacific Region and the European Region will have been certified as polio-free.
- Supplemental surveillance for certification will have been defined.
- A plan and strategy for stopping polio immunization will have been defined.

4.3 By the year 2003:

- All countries in the African, Eastern Mediterranean and the South East Asia Regions will have been certified as polio free.
- Supplemental global virological surveillance will have been implemented as required by the Global Certification Commission.

4.4 By the year 2005:

- Global certification will have been achieved.
- Specific recommendations for stopping polio immunization will have been presented to the World Health Assembly for endorsement.

5. Staging and priorities

Countries can be staged in terms of their progress towards polio eradication to determine which activities are most appropriate according to their epidemiology of poliomyelitis. The staging is goal-oriented so that countries can move from one stage to another as they implement the recommended strategies. Priority activities are indicated for each of the stages.

5.1 Stage 1: Endemic countries

Countries with virological and/or epidemiological evidence of widespread poliovirus circulation or insufficient surveillance to rule out widespread circulation.

Priority activities:

- Implementation of NIDs.
- Introduction of AFP surveillance and laboratory investigation of cases.
- Strengthening of routine EPI services.

5.2 Stage 2: Countries with focal transmission

Countries with good quality AFP surveillance and which have reduced the circulation of wild poliovirus to one or two focal areas.

Priority activities :

- High performance AFP surveillance.
- Laboratory investigations only in accredited laboratories.
- Effective "mopping-up" campaigns in high-risk areas.

5.3 Stage 3: Polio-free countries

Countries with no polio detected in the presence of high performance AFP surveillance.

Priority activities:

- AFP surveillance meeting certification standards.
- Supplemental surveillance in high risk areas.
- Maintaining high routine immunization coverage.

5.4 Stage 4: Countries certified as polio-free

Countries with virological and epidemiological evidence of having eliminated indigenous wild poliovirus circulation and having been certified as polio-free.

Priority activities

- Maintaining high routine immunization coverage.
- Detection and tracing (epidemiological and virological) and control of importations of wild poliovirus.

6. Situation analysis

Considerable progress towards poliomyelitis has been made since the first *Plan of Action* was written in 1988 and last revised in 1992. The number of polio cases in the world has fallen sharply to 5829 in 1995, a decrease of over 83% from 1988 when 35 251 cases were reported. The number of countries reporting zero cases of polio per year has risen from 105 in 1988 to 150 in 1995.

6.1 African Region

Polio remains endemic in most countries in the Region, with an estimated number of annual cases of 50 000. The reported annual incidence of polio, however, has declined by 70%, from 5 126 cases in 1989 to 1 597 cases in 1995. Sixty percent of the reported cases in 1995 were from 4 countries in "difficult circumstances", namely Angola, Ethiopia, Nigeria and Zaire, which represent 37% of the Regional population. Civil strife has seriously undermined immunization programmes in these countries. Large epidemics occurred in Angola and the Central African Republic in 1994, while Zaire observed the largest outbreak in the Region, with more than 400 paralytic cases between April and June 1995. A number of countries in Southern and Eastern Africa and some small island nations have consistently reported zero cases and are emerging as polio-free. Surveillance is however still not sufficient. Although there is encouraging progress in the Region, especially in Southern and Eastern Africa, the risk of outbreaks such as occurred in Namibia in 1993 and 1994-1995 remains high. Current OPV3 coverage of 70-90% in these areas is not enough to interrupt circulation of wild poliovirus. Supplemental immunization activities were initiated in 1995, with implementation of NIDs in Algeria, Mauritania and Namibia. Angola and South Africa held Sub-NIDs, while Botswana, Tanzania and Zaire conducted limited supplemental polio immunization as outbreak prevention or response measures. In 1996, 28 countries will conduct NIDs.

6.2 Region of the Americas

Polio has been eradicated from the Region of the Americas. The last case of polio in the Region occurred in Peru in September 1991 and eradication was certified in 1994. The eradication strategy was based on maintaining high levels of immunization with OPV among infants and establishing a surveillance system for the detection and investigation of AFP cases. NIDs were conducted -- usually twice a year, one or two months apart -- to interrupt wild poliovirus transmission. Subsequently, "mopping-up" operations consisting of house-to-house vaccination campaigns were conducted in districts which were considered at high risk. A surveillance network was established for weekly reporting of AFP cases, a cadre of health personnel was trained in epidemiological investigation of cases, and a network of laboratories was equipped to test samples

of stool collected from AFP cases. After the last case of polio was reported, stool samples were analysed from about 2 000 acutely paralysed children and their contacts for three years to document that wild poliovirus transmission was interrupted. The AFP surveillance system is now also used for the surveillance of other communicable diseases, such as measles and neonatal tetanus. The adoption of a Region-wide measles elimination goal has played a critical role in maintaining a high level of surveillance for AFP.

6.3 Eastern Mediterranean Region

In this Region, countries fall into three broad epidemiologic groups. Most countries in the Arabian Peninsula have a high socioeconomic status and high immunization coverage. Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates have all improved their AFP surveillance and report zero polio cases. In North Africa, transmission persists in Egypt, while the Magreb countries (Libya, Morocco, Tunisia) are reporting few or no cases but surveillance needs to be improved. At the other end of the spectrum are (Afghanistan, Djibouti, Pakistan, Somalia, Sudan and Yemen), where polio is still endemic and the potential for outbreaks still exists. However, supplementary immunization activities have begun in four of the six countries.

6.4 European Region

In the European Region, the number of polio cases has remained static at about 200 due to improved surveillance, but the number of geopolitical units reporting polio cases has declined sharply to 44 in 1995. Polio has disappeared from West and Central Europe. Only ten countries of the European Region are currently considered endemic for wild poliovirus. While a number of countries had undertaken supplementary immunization with OPV prior to 1995, the most important progress towards polio eradication was achieved in April and May 1995, when all endemic countries, except Russia, took part in Operation MECACAR. During this operation, 18 countries from the Mediterranean (ME), Caucasus (CA) and Central Asian Republics (CAR) conducted coordinated NIDs in which over 60 million children aged less than five years received two supplementary OPV doses. The geographical distribution of wild poliovirus appears to have been substantially reduced in MECACAR countries as the number of administrative units reporting polio cases fell from 64 in 1994 to 33 in 1995. Operation MECACAR will continue for at least three years to ensure interruption of poliovirus circulation in these areas. Russia conducted its first NIDs in March and April 1996.

6.5 South-East Asia Region

The number of reported cases in this Region has decreased by 82%, from 25 711 cases in 1988 to 3 398 cases in 1995. Despite this decline, the Region still accounted for 58% of the burden of global poliomyelitis cases in 1995. All countries in the Region have either implemented AFP surveillance or will begin in 1996 and 1997. However, by early 1996, most of the polio endemic countries of South East Asia will have implemented NIDs. One of the most important steps towards global eradication occurred in December 1995 and January 1996 when 87 million and 93 million children respectively were immunized during NIDs in India. The People's Democratic Republic of Korea conducted its first NIDs in April 1996 and Nepal is due to conduct its own first NID in December 1996.

6.6 Western Pacific Region

The Western Pacific Region is virtually free of poliomyelitis as the circulation of wild poliovirus is now limited to Cambodia and the Mekong Delta region of Viet Nam. High quality NIDs have been instrumental in eliminating the circulation of wild poliovirus. The years 1993 and 1994 saw some of the most spectacular polio eradication projects in the world, when almost 83 million children under four years of age were immunized in China during NIDs. A total of 16 NIDs have been conducted in the Region from 1992 to 1995. In the 1995/1996 winter season, improved social mobilization and special strategies to target previously unreached children focused the NIDs on areas and age groups at high risk for ongoing poliovirus transmission. Surveillance for AFP cases improved markedly in the Region, confirming that the goal of eradication is imminent.

7. WHO responsibilities at the national, regional and global levels

WHO will provide technical leadership in the management and coordination of the Global Eradication of Poliomyelitis Initiative until its completion. Success will depend on eradication being perceived as a universal challenge and WHO will actively solicit the collaboration of as wide a spectrum of institutions and individuals as possible. Commitment from governments and individual political and community leaders is essential. Financial and technical support is required from multi- and bilateral development agencies, other international agencies, non-governmental organizations, technical institutions, universities, private and voluntary groups and concerned individuals.

WHO activities associated with the poliomyelitis eradication initiative are conducted as part of the Global Programme for Vaccines and Immunization (GPV). Responsibilities for the initiative are distributed at national, regional and global levels in the same manner as the responsibilities for routine EPI.

The main responsibilities for planning, resource mobilization, donor coordination, training, implementation, monitoring, evaluation and research are at national level. WHO is collaborating in these activities through the offices of the WHO Representatives, and through the support from WHO/GPV staff and consultants assigned at country, intercountry, regional and interregional levels.

7.1 WHO regional offices:

- Provide technical support and coordination within the region;
- Update regional plans of action based on the results of assessments of national programmes;
- Support national managers in planning, donor coordination, training, monitoring and evaluation;
- Place special emphasis on AFP surveillance, including management of the regional laboratory network for the diagnosis of poliomyelitis and the characterization of the poliovirus isolates;
- Facilitate training of national laboratory staff;
- Engage in regional resource mobilization and coordination;
- Review progress at regional or sub-regional meetings of national EPI programme managers or at a regional technical advisory group meeting on at least an annual basis;
- Organize and support regional commissions for the certification of wild poliovirus eradication.

7.2 WHO headquarters

At the global level, through GPV, WHO will:

- Provide leadership in resource mobilization and donor coordination;
- Work with the regional offices to develop prototype training materials and technical support documents;
- Work with the regional offices to promote the development and application of improved disease surveillance and programme monitoring and evaluation techniques;
- Support regional offices and national programmes by providing technical assistance, expertise, assigning short- and long-term staff, strengthening donor coordination, assisting and supporting planning, training, supervision and evaluation;
- Evaluate the capacity for local production or bottling of bulk vaccine and ensure quality control of vaccine;
- Ensure sufficient quantities of high quality oral polio vaccine are available to all countries;
- Maintain a global network of poliomyelitis reference laboratories, for poliovirus characterization;
- Guide and promote operational research addressing programme priorities at the national level in collaboration with the regional offices;
- Establish and coordinate the process for global certification of poliomyelitis;
- Ensure an annual review of the Initiative for the Global Eradication of Poliomyelitis by a technical consultation and periodic review by the WHO Executive Board and the World Health Assembly.

8. Role of other agencies

8.1 UNICEF

UNICEF has played a critical role in the development of global immunization services through the provision of vaccine, cold chain equipment and logistic support and active participation in the management training of national and international staff. UNICEF has participated in meetings in which EPI policies have been developed and has played a key role at the regional and country level in helping translate these policies into effective action. In the late 1980s, UNICEF actively promoted and enabled the goal of Universal Childhood Immunization by 1990 and obtained the commitment of political leaders to this target at the highest level in the World Summit for Children.

Active participation in the eradication initiative is a logical extension of UNICEF's commitment to the promotion of child health and its investment in EPI. UNICEF's principal activities include:

- Participating in the process by which global, regional and national policies essential for poliomyelitis eradication are developed;
- Participating in the development of plans of action and needs assessments for polio eradication within general child health services at each level, and offering practical support in the implementation and monitoring of the progress towards eradication;
- Providing vaccine for routine and supplementary immunization, including strengthening of national capacity for sustained procurement and assessment of national needs;
- Developing materials for training and public information, participating in staff training in both existing management/EPI skills and new techniques required for polio eradication;
- Strengthening social mobilization to ensure political commitment and full community participation in EPI and polio eradication;
- Providing support for an effective cold chain for vaccine storage and transport;
- Developing disease surveillance as an integral part of primary health care services within countries.

8.2 Rotary International

Rotary International, through its PolioPlus programme, has been a key player in stimulating, developing and maintaining the global poliomyelitis eradication initiative. The Organization has used the strength of Rotary clubs and Rotarians around the world to raise awareness of the potential for polio eradication and its own commitment to the target. In addition, Rotary has purchased large quantities of vaccine (it is estimated that by 1995 more than one billion children had received vaccine purchased by Rotary), provided cold chain support, played a vital role in advocacy and social mobilization, sought political commitment at the national and local levels, supported WHO in establishing an international epidemiological team and assisted with research relevant to the eradication initiative.

The role of Rotary in the drive to polio eradication includes:

- Advocacy for global, regional, national and local leaders to become involved in and committed to polio eradication;
- Advocacy for the expansion of public and private sector cooperation to raise the additional resources that are required to strengthen management and evaluation of activities;
- Provision of vaccine, primarily for supplemental immunization activities;
- Assistance in the development of comprehensive AFP surveillance systems;
- Support for other activities aimed at the expansion of polio-free zones, through inter-agency coordination and local Rotarian involvement,
- Facilitation of training of laboratory personnel and health workers in the laboratory system responsible for surveillance;
- Direct involvement of Rotarians in the implementation of national and local activities aimed at polio eradication.

8.3 Centers for Disease Control and Prevention, USA

The role of the Centers for Disease Control and Prevention (CDC) in the global polio eradication initiative is to provide technological, laboratory and programmatic assistance and includes:

- Participation in the development of technical policies;
- Assistance in the development of global, regional and national plans of action;
- Support for implementation of the national plans of action and on-going evaluation of progress;
- Support for the development of technologies, materials and training for disease surveillance and practical support for implementing surveillance at the global, regional and national level;
- Investigation of epidemics, especially those occurring within or on the borders of polio-free zones;
- Participation in the development and monitoring of the laboratory network;

- Epidemiological, operational, and laboratory research to find solutions to existing or anticipated problems which will impede or delay progress towards global polio eradication;
- Provision of vaccine for supplementary immunization activities;
- Provision of long-term technical support at the national level in specific countries.

8.4 Bilateral agencies

There is a critical need for increased external support, especially among the low income countries, as global polio eradication approaches. Bilateral agencies of countries including Australia, Canada, Denmark, Japan, Germany, Sweden, United Kingdom and United States of America, have been involved at an early stage at the national level in the planning and development of activities leading to comprehensive immunization and effective surveillance including strengthening of laboratory capacity. Specifically, bilateral agencies:

- Participate in planning and needs assessment from the start of national polio eradication activities;
- Ensure the availability of sufficient resources to conduct supplementary immunization and implement AFP surveillance;
- Provide technical experts when appropriate;
- Support social mobilization, public information and training activities;
- Strengthen the laboratory capacity within countries and regions;
- Participate in review meetings and evaluations.

8.5 Nongovernmental organizations (NGOs)

Polio eradication is based on the development of national infrastructures and capacity to control disease, both through routine immunization and through effective disease control based on surveillance and supplementary immunization. NGOs have an important role in providing support, where needed, to achieve this double thrust. Their inputs may vary from provision of immunization services to provision of logistics or skills to supplement national capacities. Such inputs might include technical assistance, vaccine and cold chain equipment, management skills, participation in evaluations, support for social mobilization, public information, training and monitoring of progress. To maximize the effectiveness of their assistance in a particular country, NGOs should be aware of global, regional and national targets and plans of action, and be fully involved from the start in discussions on the initiative.

9. Other issues

9.1 Rehabilitation

The polio eradication initiative has sought to enhance rehabilitation services, both for children and adults with polio and for persons disabled by other diseases. Costs involved to achieve this include support for health staff training and production of simple orthopædic appliances. Planning of services should also ensure that the repair and replacement of appliances are available throughout the life of persons affected by polio.

9.2 Impact of polio eradication activities on routine EPI services

The Expanded Programme on Immunization and the polio eradication campaigns have made successful use of strategies that have benefited other health services in general. A new awareness about vaccines and immunization, and greater communication between health services staff and communities, have brought about a greater degree of trust. The initiative has also been successful in demonstrating the role of inter-agency and intersectoral cooperation strategies, media strategies, information systems and epidemiological surveillance.

Experience has also shown that within the context of planning a strategy for polio eradication in a country, the opportunity has been provided to evaluate and strengthen existing EPI services, revitalize health systems, facilitate surveillance, renew commitment to EPI, improve health worker morale, conduct social mobilization activities to increase awareness, and establish community co-management of health systems and community based health services.

9.3 Benefits of the Polio Eradication Initiative

The benefits of eradicating polio can be measured in several ways. The immediate benefit will be a decrease in the worldwide burden of disease and disability. The net benefits will be seen initially in the industrialized countries, where treatment for polio victims is expensive and the annual costs of the polio vaccination programmes are high. In the developing countries, there will be improvements in primary health care and in the long term, after polio is eradicated and vaccination is stopped, resources will be redirected to the prevention and control of other diseases.

10. Resource Requirements and Budget

The cost requirements for routine and supplemental OPV immunization activities for the period 1996-2000 are based on regional plans of action, country and regional budgets where available, reported costs, and experience. Constant updating of the polio eradication budget will be necessary to reflect real local costs, revisions in plans and strategies, and changing prices.

Projected costs are based on the following assumptions: for NID vaccine costs, annual newborn populations for each country were multiplied by five for the target population; the cost of vaccine was estimated using the 1996 UNICEF price (7.25 US cents per dose) times two NID rounds, with a 25% vaccine wastage factor, 15% shipping costs, and a 5% per year inflation rate. Vaccinating during NIDs is estimated to cost between US$0.67 and US$1.21 per child (in the least developed countries, the cost of immunizing a child during a NID has been shown to be higher than for developing countries). The number of years that NIDs will be held in a country will be based on the stage of that country's progress towards polio eradication.

The following table presents the most recent estimates of the annual costs of polio eradication activities for the period 1996-2005.

Table: Estimated total cost of polio eradication; 1996-2005 (millions of US dollars)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Totals
Routine	53	56	59	62	65	69	72	76	79	83	676
NIDs	360	415	365	297	158	81	8	0	0	0	1 684
Surveillance - AFP	29	11	10	11	26	7	8	5	5	5	115
Surveillance - Laboratory	5	3	3	3	3	4	3	3	3	3	36
Certification	0	1	1	1	1	1	1	1	1	1	9
Coordination	1	1	1	1	1	1	1	1	1	1	9
Totals	**449**	**488**	**440**	**376**	**255**	**163**	**93**	**86**	**89**	**93**	**2 529**

Note:
"Routine" refers only to the vaccine costs associated with EPI.
All totals are subject to rounding errors.

The greatest proportion (approximately two-thirds) of the total cost is associated with supplementary activities (NIDs and mopping-up). It is estimated that the majority of polio eradication costs will continue to be provided by local sources. The least developed countries bear between 50% and 75% of the costs while developing countries pay about 90%. The estimated total amount of external resources still required to achieve and certify global eradication will be US $600-800 million.

The resource requirements for polio eradication are updated on an on-going basis as further progress is made and additional funding and costing information becomes available.

The **Global Programme for Vaccines and Immunization**, established by the World Health Organization in 1994, defines its goal as "a world in which all people at risk are protected against vaccine-preventable diseases". The Programme comprises three units:

Expanded Programme on Immunization
Vaccine Research and Development
Vaccine Supply and Quality

The **Expanded Programme on Immunization** focuses on the prevention of selected childhood diseases and, through support to national immunization programmes, aims to achieve 90% immunization coverage of children born each year. Its goals are to eradicate poliomyelitis from the world by the year 2000, reduce measles deaths and incidence, eliminate neonatal tetanus as a public health problem and introduce hepatitis B vaccine in all countries.

Vaccine Research and Development supports and promotes research and development associated with the introduction of new vaccines into the Expanded Programme on Immunization. This includes research and development of new vaccines, improvement of immunization procedures and support to epidemiogical studies.

Vaccine Supply and Quality ensures adequate quantities of high quality, affordable vaccines for all the world's children, supports the efforts of governments to become self-reliant as regards their vaccine needs, and assists in the rapid introduction of new vaccines.

The **Global Programme for Vaccines and Immunization** produces a range of documents, audiovisual materials and software packages to disseminate information on its activities, programme policies, guidelines and recommendations. It also provides materials for group and/or individual training on topics ranging from repair of health centre equipment to curricula guidelines for medical schools, nursing colleges and training of vaccine quality control personnel.

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