52nd SESSION OF THE REGIONAL COMMITTEE

Washington, D.C., 25-29 September 2000

Provisional Agenda Item 4.4

CD42/8 (Eng.) 24 July 2000 ORIGINAL: ENGLISH

VACCINES AND IMMUNIZATION

The following report updates the Directing Council on the progress towards the goal of measles eradication by the year 2000. The report commends Member States for their commitment to the measles eradication initiative and urges them to take the necessary steps to lead the Region of the Americas to successfully achieve this goal. Resources are needed to maintain adequate surveillance and to implement timely *follow-up* measles vaccination campaigns aimed at children 1-4 years of age.

The report notes the significant improvements made in 1999 by most Member States in complying with the four indicators for acute flaccid paralysis (AFP). The steady decline of regional tetanus cases in the Region is highlighted, and recommendations are presented to target vaccination efforts to areas and population groups at highest risk within high-risk municipalities.

A special call is made in the report to every country to continue developing strategies to reach population groups still lacking the full benefits of basic vaccination.

An update is given on the remarkable changes taking place in national routine immunization programs in the Americas with the introduction of new vaccines. The report also notes the control strategies being implemented for some of these new target diseases. PAHO's partnership with Member States to ensure that quality vaccines are used in national immunization programs is reviewed.

During its discussion of the subject, the Executive Committee, at its 126th Session, reiterated its support for the eradication of indigenous transmission of measles virus in the Americas by the year 2000, and took note of the need to redouble the ongoing efforts in each country to reach this goal. In support of the global certification of poliomyelitis eradication, the Committee suggested that containment activities be initiated of wild poliovirus specimens still being kept in laboratories in the Region. The Committee also highlighted the possible impact of the processes of health reform on immunization programs and requested that in lieu of these changes the trends in immunization be monitored closely.

The Executive Committee reviewed the document and made recommendations to the Secretariat to provide full support to the successful completion of the measles eradication initiative and to the sustainable and widespread introduction of new vaccines in routine immunization programs. It adopted a resolution for the consideration of the Directing Council (see CE126.R4, annexed).

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Annex: Resolution CE126.R4

1. Vaccination Coverage

Data for 1999 show that vaccination coverage in the Americas remains at levels over 80% for all antigens (Table 1), with few exceptions, and with increases for measles and DPT, when compared to data of the previous three years. These figures show that a great majority of children are being immunized through routine vaccination services, but they also point to groups of people within countries still lacking the benefits of basic vaccination. PAHO has called for increased efforts to reach persons living in remote areas, as well as the urban poor who often underutilize routine immunization services. The challenge ahead is to implement appropriate initiatives that are sensitive to each country's situation in order to effectively reach these groups. Member States should continue monitoring vaccination coverage and disease occurrence by municipality to aid in the development and implementation of a national strategy that effectively reaches unvaccinated children.

Overall regional DPT vaccine coverage in 1999 was 95%; 19 out of 35 reporting countries (54%) had coverage of \geq 90%. Two countries reported DPT3 coverage less than 80%: Venezuela (79%) and Paraguay (77%).

Overall regional OPV3 vaccine coverage in 1999 was 87%; 20 out of 35 reporting countries (57%) had coverage of \geq 90%. Three countries reported OPV3 coverage less than 80%: Ecuador (70%), Colombia (75%), and Paraguay (74%).

Overall regional BCG vaccine coverage in 1999 was 97%; 23 out of 31 reporting countries (74%) had coverage of \geq 90%. Three countries reported coverage less than 80%: Colombia (79%), Peru (73%), and El Salvador (72%).

Overall regional measles vaccine coverage in 1999 was 91%; 24 out of 35 reporting countries (69%) had coverage of \geq 90%. Countries reporting under 80% were Colombia (76%), El Salvador (75%) and Paraguay (75%).

2. Measles Eradication

The Region of the Americas is approaching the deadline for indigenous eradication of measles transmission by the end of the year 2000, approved unanimously at the 24th Pan American Sanitary Conference in 1994. Subsequently, at least two additional years of intense surveillance will be required before formal certification of eradication takes place. Member States are to be commended for their commitment and efforts to the hemispheric measles eradication goal during the past five years. This

Table 1. Coverage Rates: DPT3, OPV3, Measles and BCG, Region of the Americas, 1999

Region/Country	DPT	OPV	Measles	BCG
Andean				
Bolivia	96	89	99	95
Colombia	81	75	76	79
Ecuador	80	70	99	99
Peru	98	96	92	73
Venezuela	79	82	79	96
Brazil	83	84	90	99
Central America				
Belize	87	84	82	96
Costa Rica	93	93	92	83
El Salvador	94	93	75	72
Guatemala	86	86	93	91
Honduras	95	95	98	93
Nicaragua	83	93	97	99
Panama	92	96	90	99
English-Speaking Caribbean				
Anguilla	96	99	99	99
Antigua and Barbuda	99	99	99	n/a
Bahamas				
Barbados	87	86	86	n/a
Cayman Islands	94	94	90	92
Dominica	99	99	99	99
Grenada	88	87	94	n/a
Guyana	83	83	87	91
Jamaica	81	80	82	85
Montserrat	99	99	99	99
St. Christopher and Nevis	99	99	99	99
St. Lucia	89	89	95	99
St. Vincent and Grenadines	95	99	87	99
Suriname				
Trinidad and Tobago	90	90	88	n/a
Turks and Caicos				
British Virgin Islands	90	92	92	99
Latin Caribbean				
Cuba	94	96	99	99
Dominican Republic	83	84	94	90
Haiti	59	58	85	58
North America				
Bermuda				
Canada				n/a
Mexico	96	96	94	99
Southern Cone				
Argentina	88	91	97	99
Chile	94	95	95	94
Paraguay	77	74	70	87
Uruguay	93	93	92	99

⁻ Provisional total based on countries reporting, excluding Canada $\ensuremath{\text{n/a}}$ - Data not applicable

^{...} Data not available
Date updated: 19 July 2000

support has enabled countries to report significant progress in reducing the burden of measles throughout the Americas. Countries that have followed the vaccination strategy for measles eradication recommended by PAHO in full and on a timely basis, are successfully controlling the disease and preventing the occurrence of measles outbreaks.

During 1999 there were 3,102 confirmed measles cases in the Americas, a decline of 94% from a high of 53,683 cases in 1997. These cases occurred in 11 countries, of which only Argentina, Bolivia, Brazil, and the Dominican Republic had indigenous transmission of measles (Figure 1): Bolivia reported 1,441 cases (46% of the Region's total), Brazil 808 (26%), Argentina 313 (10%), and Dominican Republic 274 (9%).

PAHO is emphasizing heightened national and international coordination in these priority countries to prevent the spread of measles into other areas. Health authorities in the four priority countries have pledged their full support for the successful conclusion of the regional measles eradication goal. The implementation of a dual strategy of intensive measles vaccination of municipalities that fail to reach ≥ 95 coverage (mop-up), combined with bimonthly active searches for measles cases, is being carried out in countries with measles transmission.

450 400 350 300 250 200 150 100 50 0 ARG BOL BRA DOR

Figure 1. Number of confirmed measles cases in priority countries* by quarter, 1999

Progress is evident in *Argentina*, which reported the majority of cases in 1998. A provisional total of 789 measles cases were confirmed in 1999, compared to 2,930 confirmed measles cases in 1998. The age group most affected in 1999 was children under 1 year of age, followed by children 1 year of age, and 2-5 year olds. As of mid-March 2000, four measles cases had been confirmed, compared to 113 during the same

^{*} Argentina, Bolivia, Brazil and Dominican Republic

period in 1999. An Emergency Plan was developed and four additional national epidemiologists were hired to collaborate with Argentine health authorities in the eradication efforts.

Bolivia was the country most affected by measles, with 46% (1,441 confirmed cases) of all 1999 confirmed cases in the Region, because of large areas with under-immunized populations. The majority of these cases has affected children under five years of age, followed by school-age children (5-19 years) and young adults (20-29 years). Measles virus transmission initially clustered in urban centers and subsequently moved to some rural regions. A Plan of Action was launched by the Bolivian Ministry of Health to stop the outbreak and interrupt virus transmission. The Plan mobilized technical and financial support from the Government of Bolivia and PAHO, as well as financial assistance from the World Bank, the Inter-American Development Bank, UNICEF, and local nongovernmental organizations. The Ministry of Health further issued a Ministerial Resolution supporting the implementation of a comprehensive national vaccination campaign that was carried out in November and December 1999. In the year 2000, Bolivia has so far confirmed 37 cases of measles; the last confirmed case was reported on 26 February.

Brazil reported 2,781 cases in 1998. Thanks to special vaccination and surveillance efforts initiated in 1999, including intense surveillance activities by 27 additional epidemiologists hired as part of a special task force for measles eradication, measles circulation decreased during 1999 (808 cases) and the first semester of 2000. By mid-2000 there were a total of 34 confirmed cases in five States. Most of these originated in São Paulo (15 cases) and Acre (15 cases) and occurred among the unvaccinated. A follow-up measles campaign took place in some states in June 2000, with preliminary reports indicating that high coverage was obtained.

In the *Dominican Republic*, a measles outbreak began in a tourist area as a result of an importation from South America in 1997. Despite two vaccination efforts in 1998, the virus continued to circulate and subsequently spread throughout the country in 1999. Over 50% of the cases were reported from the Santo Domingo metropolitan area, where pockets of unimmunized children, from overcrowding in urban areas with low coverage rates from previous *follow-up* campaigns allowed the disease to spread. Similar to outbreaks in Bolivia and other areas in the Region, the majority of cases were found in children under 1 year of age, followed by children ages 1-4 years and young adults between the ages 20-29 years. The country's health authorities and PAHO have organized a task force to ensure the implementation of effective control measures. Active searches for suspected measles cases and *mop-up* vaccination in areas where the virus is circulating are also being conducted. In February 2000, a five—year Plan of Action for immunization developed by the Ministry of Health with PAHO's technical collaboration

received funding in the amount of US\$ 13 million from the World Bank, the United States Agency for International Development, the Japanese International Development Agency, and PAHO.

PAHO urges Member States to continue supporting periodic and intensive, active searches for measles cases in order to find remaining chains of transmission, particularly in municipalities at high risk for measles outbreaks. At this stage, the implementation of intensive measles vaccination (*mop-up*) in municipalities with disease transmission and in those failing to reach 95% measles vaccination coverage is a critical component. Sustained efforts will also be needed to ensure thorough investigation of all outbreaks and the implementation of appropriate public health responses.

3. Diseases

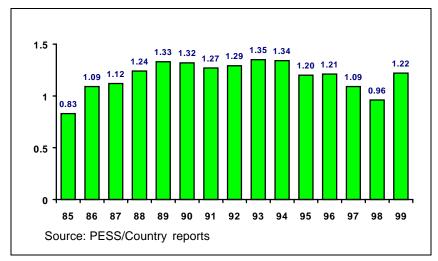
3.1 *Poliomyelitis*

The extraordinary efforts made by all countries worldwide to eradicate poliomyelitis by the end of the year 2000 are bearing fruit. At that stage countries in the Americas will join the world in carrying out extensive reviews of surveillance information, which are part of the certification process, to document the absence of circulating wild poliovirus globally. This process will be an opportunity to show that the Region continues to maintain a quality surveillance system, capable of detecting any importation in a timely fashion.

Due to the commendable efforts in several countries, as seen in Figure 2, the indicator of at least one case of acute flaccid paralysis (AFP) per 100,000 for children under 15 years of age shows significant improvement. The latter indicator is critical because it monitors the frequency of AFP cases being detected and entered into the surveillance system. PAHO urges those Member States that still maintain a rate of AFP cases under 1 to take the necessary steps to improve the sensitivity of their surveillance system for AFP.

Maintenance and improvement, where needed, of these surveillance indicators is key for the Americas to retain its certification of eradication status. Member States should also commence a comprehensive inventory of laboratories that may still store stool samples from the time the virus was circulating in the Americas, to determine the presence or absence of wild poliovirus, so that the appropriate containment of any virus found can be implemented.

Figure 2. AFP rate per 100,000 children under 15 years of age, Region of the Americas, 1990-1999



3.2 Neonatal Tetanus

The total number of cases of neonatal tetanus (NNT) continues to decline as seen in Figure 3. In 1999, the Americas reported 154 cases. The control strategy has been that of vaccinating women of child-bearing age who live in districts classified as high-risk for the disease. Following the notable reduction in cases during the past decade, the 16 countries where NNT is endemic have initiated a new phase of targeting vaccination efforts on areas and population groups at highest risk within those high-risk municipalities that still report isolated NNT cases. For this purpose, PAHO is recommending that countries carry out national evaluations to determine the number of municipalities remaining in the Attack Phase (intensive vaccination required), and those that have graduated to the Maintenance Phase (vaccination through routine programs). Furthermore, countries should also look into epidemiological and social conditions associated with these remaining cases (migration, lack of vaccination, and marginality, among others), in order to target vaccination toward those groups or areas at greatest risk within high-risk municipalities.

3.3 Rubella

In 1999 information obtained on rubella through PAHO's regional measles eradication surveillance system showed that 57,763 cases had been reported, of which 8,657 (26%) were confirmed as rubella. Mexico, Venezuela, Brazil, and Argentina accounted for 80% of these cases.

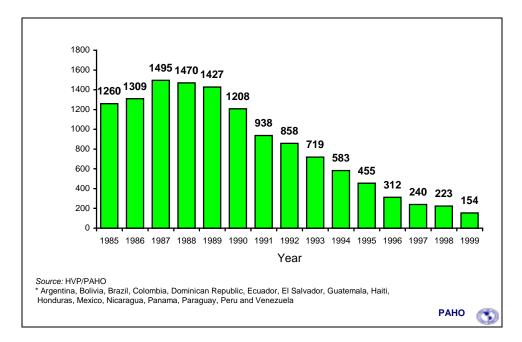


Figure 3. Neonatal tetanus cases per year in selected countries,* 1985-1999

PAHO's technical cooperation in the control of rubella focused on ensuring widespread rubella vaccination through routine immunization programs, reducing the number of rubella-susceptible women of childbearing age, and supporting countries in the development of integrated surveillance systems for measles and rubella.

In 1996 there were 22 countries that had introduced the measles-mumps-rubella vaccine in the national immunization schedule—15 from the English-speaking Caribbean, the United States, and Canada, as well as Chile, Costa Rica, Cuba, Panama, and Uruguay in Latin America. By June 2000, 42 of the 47 countries in the Region had introduced MMR vaccine.

Information obtained through PAHO's regional measles eradication surveillance system showed that by June 2000, of 16,765 laboratory analyses performed on samples of suspected measles cases, 3,874 (23%) were confirmed as rubella. Brazil, Dominican Republic, Ecuador, Honduras, and Peru reported 91% of these cases.

Vaccination strategies have already been brought forward to the Member States for either rapidly controlling rubella or for preventing cases of congenital rubella syndrome (CRS). For those countries wishing to rapidly prevent and control CRS, a one-time mass campaign has been recommended, aimed at women between 5-39 years of age,

using measles and rubella-containing vaccine. Countries wishing to control both rubella and CRS need to conduct a mass campaign targeted to the entire population 5-39 years of age with measles and rubella-containing vaccine.

The implementation of integrated measles and rubella surveillance systems will facilitate the task of Member States in determining the exact location of virus circulation, allow for timely detection of cases to ensure adequate outbreak control and CRS prevention measures, and provide the tools to assess the magnitude of disease burden and the impact of various interventions. So far, the initial initiatives towards the integration of measles and rubella surveillance are already contributing to increased sensitivity in measles surveillance allowing for the detection of all suspected measles cases that could possibly occur. This is critical at this stage of the eradication goal. A Regionwide standardized surveillance system for rubella and CRS should be developed and implemented.

Chile has carried out a preventive rubella vaccination campaign to prevent the occurrence of CRS, targeting women 10-29 years of age. The campaign achieved 98% vaccination coverage, due in part to the strength of the national immunization program and a highly successful social mobilization campaign. Health authorities have implemented a surveillance system that will provide information on the effectiveness of the campaign and policies, measure the campaign's impact on the occurrence of rubella and CRS, and identify groups of people or geographical areas in need of additional control efforts. The second phase of the campaign, which sought to vaccinate all postpartum women (6%) that were not vaccinated during the first phase of the campaign, was successfully completed.

Costa Rica also carried out a vaccination campaign following a rubella outbreak in 1999 in which over 250 cases were reported. The measles-mumps-rubella vaccination campaign in the country targeted children 1-14 years of age. Selective adult vaccination among risk groups (health workers, personnel at educational establishments, tourist workers, and migrants) with MMR vaccine was also carried out. The rubella outbreak in Costa Rica highlighted the need for all countries to adjust their surveillance system for suspected measles cases to include rubella. This outbreak also signaled an increase in rubella activity in almost all Central American countries. That region is moving towards integration of measles and rubella surveillance.

Rubella mass vaccination campaigns have been completed in 5 of the 19 English-speaking Caribbean countries and territories (Bahamas, Dominica, Guyana, Montserrat, and Trinidad and Tobago), achieving vaccination coverage between 67% and 90%. Of the total target population of 2.2 million for all countries, 1,138,454 (52%) have already been vaccinated. *Mop-up* activities are still taking place in those countries. These campaigns

have targeted persons of both sexes up to 40 years of age in some countries. The most frequent age group has been 20-40 years of age, up to 44 years of age in two of the five countries. In 1991 the *catch-up* measles vaccination campaign with MMR vaccine achieved over 90% vaccination coverage in the targeted cohort. This prompted some countries to concentrate on the older age groups.

3.4 Yellow Fever

The risk of urbanization of yellow fever in the Americas remains a public health concern, due to the wide and ongoing dissemination of *Aedes aegypti* in the 11 countries located inside the enzootic area (Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Panama, Peru, Suriname, Trinidad and Tobago, and Venezuela). In 1999, 207 confirmed cases of the selvatic form were reported with 100 deaths, the majority occurring in Bolivia, Brazil, and Peru. The growing movement of people, among them those in the viremic phase, from enzootic areas, either by road or air, facilitates the introduction of yellow fever into urban areas, which currently have high rates of infestation with *A. aegypti*.

PAHO is working with Member States to improve epidemiological surveillance and to inform health professionals in high-risk areas about the disease. Bolivia, Brazil, and Peru have in place routine epidemiological investigations for yellow fever whenever a suspected case is identified. The majority of cases reported in 1999 were laboratory confirmed. So far, only Trinidad and Tobago, Guyana, and French Guiana have introduced a universal vaccination strategy for children. Brazil initiated the implementation of a similar strategy in 17 of its 27 states, and Ecuador in its eastern provinces. Bolivia, Peru, and Venezuela are also aiming to introduce nationwide yellow fever vaccination in children's basic vaccination schedules by 2000-2001. Vaccination campaigns for other age groups in areas considered at greater risk also have been launched in Bolivia, Brazil, Ecuador, Guyana, Peru, and Venezuela. Brazil has vaccinated over 35 million people in all age groups over the past two years.

The implementation of strategies to control and prevent yellow fever remains a critical issue. PAHO has recommended that all individuals living in enzootic areas and nearby urban areas infested with *A. aegypti* be vaccinated against yellow fever. Coverage of at least 80% is necessary to prevent disease outbreaks in urban areas. The incorporation of widespread yellow fever vaccination in routine childhood immunization programs will be instrumental in achieving high vaccination coverage and in reducing the number of cases and outbreaks in endemic areas. Improved yellow fever surveillance is also critical to effective and timely case identification and outbreak control. The Organization has recommended that a comprehensive vector control program be established by countries to lower the density of *A. aegypti* in urban environments.

4. Quality Control of Vaccines

Key to the success and effectiveness of national immunization programs, besides the availability of adequate infrastructure, logistics, and human resources, is the utilization of quality vaccines. The use of a vaccine of low potency or unknown safety will jeopardize all other efforts and resources invested in achieving high vaccination coverage. PAHO is, therefore, placing high priority on establishing and strengthening the mechanisms that will allow countries to guarantee the utilization of quality vaccines.

Efforts have been directed towards strengthening the national regulatory authorities in the Region to ensure compliance with the six regulatory functions of: (a) licensing of all vaccines used in the country; (b) clinical evaluations of vaccines; (c) release of every vaccine lot to be used in the country; (d) access to a laboratory that can perform vaccine testing; (e) inspections of manufacturers to evaluate compliance with Good Manufacturing Practices (GMP); and (f) implementation of a post-marketing surveillance system.

In the area of national regulatory authorities, the Organization collaborated with Member States in the harmonization of regulatory activities for the licensing of vaccines in non-producing countries, particularly in the Central American countries and in the Dominican Republic. A generic document with harmonized procedures for vaccine licensing was developed and is currently in use in several countries. In order to strengthen the regulatory functions in these countries, workshops were developed and carried out on topics surrounding the process of vaccine licensing, lot release, and GMP. Computers and access to Internet were provided to improve communication and to implement the database systems for registering circulating vaccine lots.

Efforts in the area of quality control were also directed toward assisting the national control laboratories of Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, and Venezuela in achieving levels of proficiency and qualification. This task seeks to standardize laboratory methodologies, production and distribution of reference reagents, training in control of new vaccines, validation of alternative *in vitro* potency tests, and improvement in communication and exchange of information among participating laboratories. A certification program to assess the proficiency and performance of laboratories in the regional network was developed and implemented in order to guarantee access to vaccine testing at qualified laboratories, either by PAHO or by a national regulatory authority in the Region. A database developed for the registration of all vaccine lots released and circulating in the Region was improved and is currently being evaluated by selected national regulatory authorities and laboratories.

Several countries in the Region are currently manufacturing some of the vaccines used in regular immunization programs, while others are seeking to initiate local production. This underscores the need for current and prospective producers to comply with international requirements and GMP. PAHO has previously emphasized the importance of strong political commitment to ensure the availability of resources that will enable producers to carry out improvements of existing facilities, as well as needed changes in managerial, administrative, and organizational areas. The Organization continues to promote technical and economic feasibility studies of vaccine producers in the Region which, once conducted, provide information that can justify the continuation or termination of production activities. Mexico carried out such as study, and Brazil has requested assistance to perform a similar study. Peru concluded a pre-factibility study of local yellow fever production. Recommendations on carrying out these studies have been provided to Colombia, Ecuador, and Venezuela.

The Organization is also collaborating with WHO in promoting the inclusion of local vaccine manufacturers in WHO's assessment process. If passed, vaccine producers in the Americas could become vaccine suppliers to United Nations agencies. Cuba has initiated this process for hepatitis B vaccine and Biomanguinhos, of Brazil, for yellow fever vaccine. PAHO is also providing technical advice to the recently formed Global Alliance on Vaccines and Immunization (GAVI), especially to its research and development pre-task force. Initial steps include developing an inventory of pilot lots and contacting manufacturing facilities in the Region to locate potential facilities that could be useful in the various stages of development of "orphan" vaccines of public health importance.

Annex

126th SESSION OF THE EXECUTIVE COMMITTEE

Washington, D.C., 26-30 June 2000

CD42/8 (Eng.) Annex

RESOLUTION

CE126.R4

VACCINES AND IMMUNIZATION

THE 126th SESSION OF THE EXECUTIVE COMMITTEE,

Having considered the report of the Director on vaccines and immunization (Document CE126/10); and

Taking into account the progress being made by all countries in the control of vaccine-preventable diseases and their efforts to complete the eradication of measles by the year 2000, and in the introduction of new vaccines into their national immunization programs,

RESOLVES:

To recommend to the Directing Council the adoption of a resolution along the following lines:

THE 42nd DIRECTING COUNCIL.

Having considered the report of the Director on vaccines and immunization (Document CD42/8) and taking note of the progress being made by all countries in the control of vaccine-preventable diseases;

Taking into account that there is still a considerable number of children who are not receiving the benefits of immunization;

Cognizant of the fact that major efforts are needed to achieve the goal of measles eradication by the end of the year 2000; and

Considering that the sustainability of immunization programs and control/eradication of vaccine-preventable diseases require a permanent effort by the health sector at all levels,

RESOLVES:

- 1. To urge Member States to:
- (a) maintain a high degree of priority in the financing of their national immunization programs, including the costs related to the introduction of new vaccines;
- (b) target a 95% vaccination coverage for all antigens in every district of the country as the national goal;
- (c) ensure that all measures necessary to interrupt the transmission of measles are put in place, including those related to mop-up operations and strengthening of surveillance and complete case investigation;
- (d) initiate activities related to the containment of any laboratory material that may harbor specimens of wild poliovirus, to ensure that global certification of eradication is eventually accomplished;
- (e) implement periodic multidisciplinary evaluations of their national immunization programs to identify any constraints that may hamper the equitable access to measures aimed at the control of vaccine-preventable diseases;
- (f) ensure that all vaccines used in national immunization programs comply with national and international standards.
- 2. Request the Director to:
- (a) collaborate with Member States in the containment of biological material that may harbor the wild poliovirus;
- (b) support the networks of national control authorities and national control laboratories to ensure that vaccines of reliable quality are used in all countries;

- support the national program evaluations in coordination with other collaborating partners;
- (d) assist the relevant Member States in benefiting maximally from the Global Alliance for Vaccines and Immunization.

(Fourth meeting, 27 June 2000)