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### INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS (IMCI)

Acute respiratory infections (ARI), diarrheal diseases (DD) and nutritional deficiencies, together with other infectious diseases such as dengue, malaria, tuberculosis, and vaccine-preventable diseases, account for over 150,000 deaths per year in children under 5 years of age in the Region of the Americas. Morbidity due to these diseases is also significant, and some of them, such as ARI and DD, are the most common reason for parents seeking care in a health facility. Malnutrition, as a preexisting condition or as a consequence of repeated episodes of these diseases, usually contributes to deterioration in children's health status.

Existing strategies for prevention and control of these problems, although effective to reduce morbidity and mortality, showed a lack of impact in many countries and areas within countries. Lack of integration of interventions, especially at the local level, was considered partially responsible for these poor results.

PAHO/WHO and UNICEF jointly proposed the Integrated Management of Childhood Illness (IMCI) strategy to address this problem and to contribute to the prevention and control of these diseases. IMCI strategy includes actions not only for the early detection and treatment of common diseases that affect children, but also for preventive and promotional measures such as vaccination, breast-feeding, adequate nutrition, and counseling of parents to provide better child care at home.

Implementation of IMCI is considered the key intervention to achieve the World Summit for Children's goal to reduce by one-third childhood mortality in all countries of the Region. PAHO is committed to work with the Member States to provide universal access of the population to IMCI. This will contribute to sustaining the reduction in mortality and to preventing 100,000 deaths in children under 5 years in the period 1999-2002 in the Region of the Americas.

This document briefly presents the health situation of children in the Region and the main characteristics that make the IMCI strategy the most valuable intervention for improving equity in children's health conditions. It also describes advances in the implementation of IMCI and the main challenges to achieving the proposed goals.

The Executive Committee is requested to review this document and make recommendations to the Secretariat on how it can accelerate the implementation process of the IMCI strategy and tackle the main obstacles to achieving universal access to it.

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## **1. Introduction**

The Integrated Management of Childhood Illness (IMCI) strategy was developed by the Pan American Health Organization/World Health Organization (PAHO/WHO) and the United Nations Children's Fund (UNICEF) to reduce mortality and morbidity in children under 5 years of age and improve the quality of care for them in the health services and the home. Individual strategies already available for controlling illnesses and specific health problems were incorporated to permit the integrated evaluation of a child's health when he/she comes into contact with a health care provider, whether institutional or community-based. The IMCI strategy, moreover, includes disease prevention and health promotion activities, utilizing the consultation as an opportunity to improve knowledge, attitudes, and the practices related to caring for the child in the home. By integrating diagnosis and treatment of the most frequent illnesses, prevention measures, and health promotion into a single evaluation sequence, IMCI reduces missed opportunities for early detection and treatment of problems, for vaccination, for the detection of nutritional disorders, and for educating parents in the proper care of the child in the home and the early detection of warning signs that signal a need to seek help.

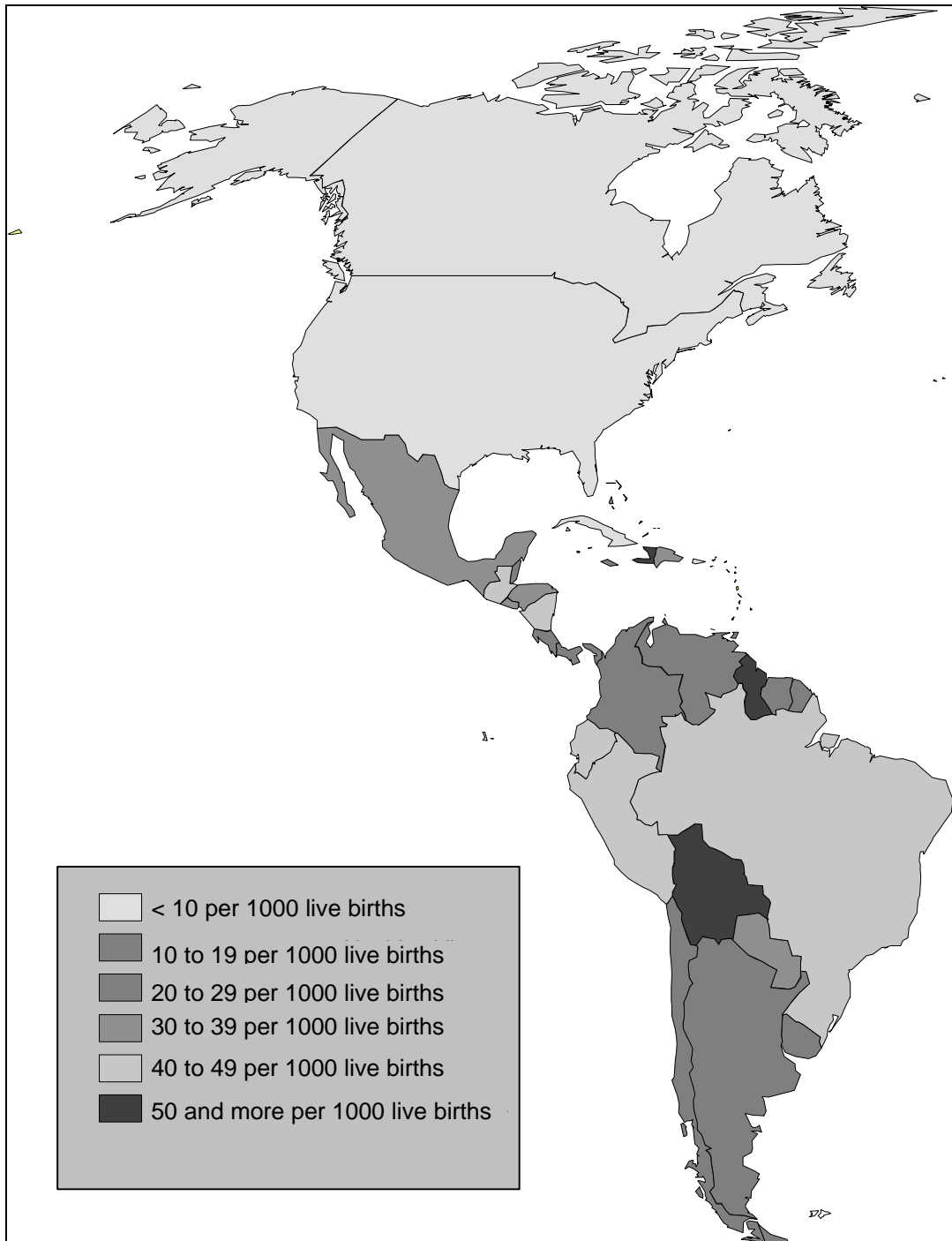
The application of the IMCI strategy in the health services and the home contributes to reducing the number of episodes and deaths due to communicable diseases in children under 5 years. Communicable diseases represent more than one-third of the deaths in this age group in the Region of the Americas.

PAHO is committed to work with Member States to save the lives of 25,000 children each year during the period 1999-2002 through the massive application of IMCI in the countries.

## **2. Child Health in the Region of the Americas**

Although the infant mortality rate (IMR) in the Region of the Americas has declined steadily, especially in the past decade, profound differences can still be seen among the countries. The IMR in some countries of the Region is still 10 times higher than that of the most developed countries in the Hemisphere (Figure 1), and in many countries (Bolivia, Brazil, Ecuador, Guatemala, Nicaragua, and Peru), at the twilight of the 20th century, the IMR is similar to what it was in the first half of this century in more developed countries. In addition, since the IMR reflects only the national average, it conceals the marked differences between populations within countries, whether grouped by geographical location, race, or income level.

**Figure 1: Infant Mortality in the Countries of the Americas  
Estimates 1995-2000**



The difference in the magnitude of the IMR is largely associated with the persistence of high mortality from infectious and parasitic diseases. In the developing countries, especially those with lower average annual incomes, mortality rates are more than 200 times those found in the developed countries of the Hemisphere. In the developing countries, acute respiratory infections (ARI), diarrhea, and malnutrition are the cause of most infant mortality, and together account for 40% to 60% of all deaths in children under 5 years; in the developed countries they are the cause of less than 6% of the deaths in this age group.

In addition to their importance as a cause of mortality, acute respiratory infections and diarrhea, together with malnutrition and other infectious diseases such as malaria, tuberculosis, dengue, Chagas' disease, vaccine-preventable diseases, and meningitis, constitute the highest burden of disease in the child population, accounting for more than 60% of visits to the health services and more than 40% of hospitalizations of children under 5 years. Every day considerable resources are invested in their diagnosis and treatment. In the case of antibiotics, this resource expenditure is often unnecessary since more than 50% of the children who are given these drugs do not need them. In addition, this practice leads to antimicrobial resistance, higher treatment costs, and frequent drug shortages in the health services, preventing many children who do need the drugs from receiving them.

The IMCI strategy is offered as the best option to achieve a health situation that is more equitable. It is compatible with the knowledge and technology available and can be put within reach of the population through health services and health workers at the first level of care. It not only focuses on controlling the leading causes of mortality and morbidity in children, but also is a vehicle for improving the quality of care in the health services and the home.

### **3. The IMCI Strategy and Child Health**

The following chart summarizes actions of the IMCI strategy for the care of children under 5 years by health care workers, and shows how it contributes to the knowledge, attitudes, and practices of the family and community in the care of the child in the home.

### **Actions Carried Out by Health Workers in the Application of the IMCI Strategy in Care of Children**

<b>Diagnosis and Treatment Actions</b>
<ul style="list-style-type: none"><li>• Rapid evaluation of nonspecific signs of serious disease (convulsions, somnolence, difficulty drinking) for referral to the hospital</li><li>• Sequential evaluation of signs and symptoms of the most frequent diseases for classification/diagnosis and specific treatment:<ul style="list-style-type: none"><li>• Cough or difficulty breathing</li><li>• Diarrhea</li><li>• Sore throat</li><li>• Earache</li><li>• Fever</li><li>• Other signs of common diseases (according to the adaptation based on the local epidemiological situation)</li></ul></li><li>• Evaluation of the nutritional status</li><li>• Evaluation of the vaccination status</li></ul>
<b>Prevention Actions</b>
<ul style="list-style-type: none"><li>• Vaccine administration</li><li>• Vitamin A administration</li></ul>
<b>Health and Promotion Education Actions</b>
<ul style="list-style-type: none"><li>• Education and support on proper breast-feeding technique</li><li>• Education and support for proper child nourishment</li><li>• Education on general measures of care of the child in the home</li><li>• Education on warning signs for timely consultation to the health service</li></ul>

#### **3.1 *Response to the Demands of the Population***

Focusing on the rapid detection and treatment of the illnesses that affect children and put them at risk of death, the IMCI strategy permits an immediate response to the main problem that brings the child to the health service. Thus, the IMCI strategy responds to the principal concerns of the population concerning child health.

#### **3.2 *Strengthening the Integrated Approach to Care of the Child***

Application of the IMCI strategy permits a thorough assessment of a child's health status, leading to the detection of other problems and illnesses, even when they are not the main reason for the consultation. In this way, the IMCI strategy reduces missed opportunities for the early detection and proper management of childhood illnesses, which often go untreated because they are not detected by health workers.

### **3.3 *Strengthening the Application of Prevention Measures***

The IMCI strategy also includes the systematic assessment of the vaccination and nutritional status of the child, as well as activities to promote disease prevention and reduce the prevalence of malnutrition, a very important risk factor that aggravates illness and increases infant mortality.

### **3.4 *Encouraging Health Promotion Activities***

By including specific educational components on caring for the child in the home, as well as disease prevention and the early detection of warning signs, the IMCI strategy helps to improve the knowledge, attitudes, and practices of the population with respect to child health. It thus becomes a vehicle for improving the family's ability to care for the child at home, thereby contributing to disease prevention and health promotion.

### **3.5 *Improving the Efficiency and Quality of Care***

The IMCI strategy facilitates detection of the main causes of illness in children through the application of a basic set of assessment, classification, and treatment activities, selected for their high predictive value for early detection and successful treatment. Thus, the IMCI strategy helps to provide the highest possible quality of care during a routine visit to the health services. By establishing a systematic sequence for assessment, classification, and treatment that includes the components of disease prevention and health promotion, application of the IMCI strategy promotes proper care for all children. It can improve equity in the access of everyone to the available knowledge and technologies for the prevention and treatment of illness.

## **4. *Implementing the IMCI Strategy***

### **4.1 *Adaptation to the Needs of Each Country***

Taking the different health situation of countries into account, implementation of IMCI involves the adaptation of the content and methodologies of the strategy to the epidemiological and operational situation in each country and in the different areas within the countries. Thus, the IMCI strategy can be targeted toward the leading causes of illness in each location, facilitating the speedy detection of serious problems, the appropriate corresponding outpatient treatment, and the application of disease prevention and health promotion measures for the child that are suited to each place.

#### **4.2 *Implementation Geared toward Improving Equity***

Application of the IMCI strategy in the health services improves equity in health care, since it facilitates access to a basic series of measures for the early detection and treatment of illness, disease prevention, and health promotion to all children. By introducing it first in the countries and areas with the highest IMR, PAHO/WHO is helping to reduce the existing gaps in the health status of children, thereby reducing the inequities between countries and between areas of the same country in terms of child mortality and morbidity, as well as access to adequate quality care. In countries with lower IMR (less than 40 per 1.000 live births), when IMCI is directed to the most vulnerable populations, access to the basic means of prevention and promotion for health, early diagnosis, and adequate treatment of the most frequent illnesses and health problems is improved

#### **4.3 *Strengthening the Decentralization Processes***

Implementation of the IMCI strategy also strengthens the decentralization processes, extends the coverage of measures to control childhood illness, and improves intersectoral coordination and the quality of referral and back-referral between the community, the first level of care, and the hospitals. By improving the problem-solving capability of the basic levels of care, including the family and the community, the strategy bolsters decentralization, which includes strengthening the decision-making capability of the peripheral levels to give them greater autonomy in organizing activities. The community component of IMCI is a useful tool for extending the coverage of care for the principal child health problems, by involving auxiliary personnel, community health workers, other volunteers, and the family itself in disease prevention and health promotion activities for children. Finally, implementation of the IMCI strategy strengthens the links between the different levels and sectors of care by establishing uniform criteria for assessment, classification, treatment, and monitoring of the progress of the illness, and by optimizing the use of all available resources, both public and private.

#### **4.4 *Strengthening Interaction and Links between Countries***

The implementation process is moving forward in the Region, stimulating a significant resource development in the countries. The formation of a critical mass of trained health workers for monitoring and evaluating activities and for conducting multicenter studies aimed at generating more in-depth knowledge about child health is making it possible to develop intercountry plans, share and complement experiences, and support national and local levels in the strategy's implementation. This process involves not only the ministries of health but also scientific societies, universities, and medical and



nursing schools. This contributes to the further dissemination of the IMCI strategy and its discussion in academic and scientific forums at the national and international level.

## **5. The International Context**

Child health has been the deserving object of profound and continuing interest in recent years, given the disparities in the health status of children in the different countries of the world. The goals issued by the World Summit for Children constitute one of the more important advances in this regard and are among the factors that moved PAHO/WHO and UNICEF to search for an integrated tool that would enable children to receive adequate care—care that would guarantee the early detection and proper management of all their health problems, not just those that precipitated the consultation, while incorporating disease prevention and health promotion activities. The IMCI strategy, the fruit of the joint effort by PAHO/WHO and UNICEF, is currently presented as a suitable alternative for improving the care of children under 5 years in both the health services and the home.

The potential of the IMCI strategy to achieve a significant reduction in child mortality and morbidity and to guarantee good quality health care for children was noted by the World Bank in its 1993 Report, which called it the most cost-effective intervention for reducing the burden of disease in the population. Implementing the IMCI in the health services is very important for improving the health conditions of the population. It is an integral part of health sector reform—a tool for decentralization, for improving the efficiency and quality of care in the health services, and for strengthening the State's role in developing health policies for intersectoral application.

In order to implement the strategy, PAHO/WHO and UNICEF joined forces through an interagency agreement signed in 1996 to assist national authorities in incorporating the IMCI strategy in the health services and the community. The agreement between PAHO/WHO and the United States Agency for International Development (USAID) to assist the countries in achieving universal access to the IMCI strategy by children under 5 years constitutes a framework for additional support. It strengthens the implementation of the IMCI strategy in the countries and pools the efforts of the various agencies working to improve the health conditions of children. Commitment at the national level has been essential for implementing the IMCI strategy. It began with the Declaration of Santa Cruz de la Sierra, drafted by the national authorities in charge of ARI and diarrheal disease control in the developing countries. In this Declaration they expressed their commitment to the efforts required to ensure that all children under the age of 5 in the Hemisphere have access to the IMCI strategy through the health services and health workers, as well as the community structures in each country, including various types of volunteer and community-based personnel. The commitment of technical

personnel has been accompanied in some countries of the Region of the Americas (Bolivia, Dominican Republic, Ecuador, and Peru.) by official adoption of the IMCI strategy as the basic health policy for securing a reduction in infant mortality.

Broad support for the IMCI strategy has helped to mobilize numerous governmental and nongovernmental resources, with a different degree of commitment in each country. The introduction of the IMCI strategy as the principal health care instrument for children is under way among some private health facilities in numerous institutions supported by nongovernmental organizations (NGOs) in Bolivia, the Dominican Republic, Ecuador, El Salvador, and Peru. In some countries implementation of the IMCI strategy is being fully coordinated with the health sector reform process, with the strategy constituting one of the essential elements in the basic package of services to be offered by the health system and a tool for improving the problem-solving capability of the system.

Cooperation among countries in the implementation process was facilitated from the regional level, permitting the sharing of experiences and support from countries in the areas in which they were strongest. There was also cooperation with the institutions responsible for educating health workers. The purpose was to incorporate teaching the IMCI strategy into the training process.

## **6. Progress in Implementing the IMCI Strategy in the Region**

### **6.1 *Implementation Priorities at the Regional Level***

Since its unveiling in 1996, 14 countries of the Region have begun implementation of IMCI, with priority given to the areas with the highest IMR, where the strategy can have the greatest impact in terms of reducing child mortality and morbidity. The IMCI strategy was adopted in Bolivia, Brazil, Dominican Republic, Ecuador, and Peru in 1996, and in El Salvador, Haiti, Honduras, and Nicaragua in 1997. In 1998 progress was made in presenting the IMCI strategy to other countries in the Region where its application has already begun, namely Argentina, Guatemala, Paraguay, and Venezuela. Activities are also programmed for adapting the IMCI strategy to the national policies of other countries, especially in Guyana.

### **6.2 *Training Health Workers***

All the countries that have already initiated the implementation process have held training courses for health workers. This activity began with the training of a critical mass to support the national effort, currently reaching the first-level health services, which are gradually incorporating the use of the IMCI strategy in the health care for children under 5 years. Over 5,000 people have been trained.

### **6.3 *Support and Follow-up for Effective Implementation***

Follow-up after training has demonstrated the feasibility and benefits of the IMCI strategy for improving the quality of health care for children, although it has not achieved the coverage necessary to guarantee that all trained staff receive assistance in introducing the IMCI strategy in the routine care provided by the health services. The implementation of this follow-up has revealed a significant sharing of experiences among the countries, which are providing mutual support to promote the effective application of the strategy in the health services.

### **6.4 *Increased Access through Intersectoral Coordination and Participation***

The implementation process has led to closer ties with the academic and scientific institutions of the countries, with NGOs working locally, and with the social security institutions. They are helping to incorporate the IMCI strategy in the different sectors of care and in the education of health workers. Through the development and testing of materials and tools designed to strengthen the community component of the IMCI strategy, progress has been made in including community health workers in order to increase access by people who cannot obtain timely care through the institutional health services and health workers. Training courses for auxiliary and support workers have also been designed to guarantee the early detection of critically ill children and improve interpersonal communication with mothers in order to instill the knowledge, attitudes, and practices necessary for improving childcare in the home.

### **6.5 *Epidemiological and Operations Research for Surveillance***

Finally, the implementation of simple protocols for the surveillance of childhood illness has begun for the purpose of conducting epidemiological and operations research to increase local knowledge about the health problems of children and to assess the impact of the IMCI strategy on these illnesses. Some of these studies, either completed or in progress, have already revealed the benefits of the IMCI strategy, i.e., a reduction in the unnecessary use of antibiotics and in the prescription of unsuitable drugs for case management, such as antidiarrheals and cough syrups.

The application of these studies also contributes to improving the quality of information available at the local level, and improves the knowledge of health personnel with respect to the magnitude, tendencies, and characteristics of morbidity and mortality in children. It guides the implementation of actions directed to the control of children's health problems.

## **6.6 *Adapting the Strategy to Countries with Lower IMR***

Actions directed to the incorporation of additional components to the IMCI strategy for its application in countries with lower IMR are being realized. A component for the control of obstructive respiratory problems (including asthma) was incorporated in some countries that had already adopted the strategy (Argentina, Venezuela). Additional components are being analyzed, such as the prevention of accidents in children (especially in those 1 to 4 years of age), the detection and management of problems of violence and child abuse or neglect, and the evaluation of problems of psychoaffective disorders.

The identification of links between the IMCI strategy and other health interventions such as the control of pregnancy to reduce perinatal problems is also advancing, in order to take advantage of the application of the strategy as a vehicle for the detection and treatment of other maternal and child health and family health problems. Incorporation of these additional components will strengthen the role of IMCI in responding to the main cause of disease and health problems in children. At the same time, it will provide access for children to a good quality of care both at health facilities and at home.

## **7. Challenges for Implementation**

PAHO has played a key role in regional and national efforts to improve the health conditions of the population in general and children in particular. Supporting and guiding activities in disease prevention and control, PAHO has contributed to the progress made by the countries in strengthening primary health care and achieving the goals of health for all by the year 2000. It has also helped in the effort to achieve the goals of the World Summit for Children to reduce mortality in children under 5 years by one-third and decrease the incidence of health problems.

The regional initiative for measles eradication currently under way and the maintenance of polio eradication have demonstrated the capacity of the Region of the Americas to confront challenges and have served as a guide for other regions. The reduction in mortality from infectious diseases in children under 5 years is a new challenge, which will have an important impact in reducing total childhood mortality.

Implementation of the IMCI strategy to permit universal access by children under 5 years to health services and health workers and to ensure that the population follows the recommendations on disease prevention and health promotion for children will make it possible to move toward the goal of reducing mortality. It will help to prevent more than 100,000 deaths in children under 5 years in the year 2002, based on the annual figures for 1995-2000.

Within this framework, efforts to strengthen implementation of the IMCI strategy will translate into better health conditions for the children of the Hemisphere, giving them equitable access to adequate health care through the health services as well as the family and community. Some of the obstacles to achieving implementation of the IMCI strategy are listed below:

- *Effective incorporation of the IMCI strategy in the health sector reform processes* currently under way in the countries is a high priority, not only to help implement the strategy in the health system but, especially, to guarantee equity and efficiency in health care for children throughout the country's health structure, both public and private. Application of the IMCI strategy in health care for children under 5 years guarantees them the same access to a series of measures for the early detection and proper management of illness, in addition to disease prevention and health promotion activities that are rarely part of a routine consultation, not only in the public health services but the private health services and social security institutions as well.
- *The commitment of the countries to support the implementation effort* is essential, bearing in mind the time that will be needed to ensure that all health services and health workers are in a position to apply the IMCI strategy. This requires training, the steady provision of the necessary supplies for conducting the activities (especially antibiotics and other drugs for treatment), periodic supervision to ensure the effective application of the strategy, and communication about the IMCI strategy in order to transfer knowledge and positive attitudes to the community responsible for the child. Effective incorporation of the implementation plans in the budgets of the ministries of health, an explicit commitment by the governments to achieve the goals of reducing mortality and morbidity, and improving the quality of health care for children, together with periodic reporting on progress, can serve as a tool for the mobilization of resources and participation by the population in caring for and protecting the health of children. In this regard, the example set by the Dominican Republic in adopting a National Integrated Management of Childhood Illness Day, in which the Government publicly reports on the progress made in the implementation of this strategy, can serve as a model for the adoption of similar mechanisms to encourage greater participation by the population in monitoring the actions and outcomes of health interventions.
- *Effective introduction of the IMCI strategy in the training of health workers* is a major challenge aimed at reducing the burden imposed by the ongoing training of staff in activities to control the most frequent illnesses and health problems that affect the community. Teaching the strategy in academic institutions will elicit greater support for its implementation, while reducing the workload and the

additional costs entailed by the training. It will shorten the timeframe for implementation and increase access in the health services manned by personnel from the universities, medical schools, and schools of nursing.

- *Bolstering the active participation of NGOs in the implementation* of the IMCI strategy will help to extend coverage for the population that can receive its benefits, especially through community workers who share in the planning and activities of these institutions. Thus, it will facilitate the transfer of the necessary knowledge and practices to the population, guaranteeing better health conditions for children.
- *Adaptation of the IMCI strategy for application to different epidemiological situations* that give priority to other components of child health, including the monitoring of growth and promotion of development and the prevention of accidents and child abuse, also poses a significant challenge for linking the health services with the reality of each locality. Incorporating the components that link the IMCI strategy with other components of family health care, such as perinatal care, reproductive health, women's health, and family health, will help to reduce missed opportunities for the early detection and treatment of problems, as well as enhance disease prevention and health promotion in the community.

## **8. Action Requested of the Executive Committee**

The Committee is asked to review the present document and make recommendations to the Secretariat on how it can accelerate the implementation process of the IMCI strategy in the Region of the Americas and overcome the main obstacles in achieving universal access to it.