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**PART III**

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**Chapter 4**

**INTEGRATED APPROACHES  
TO CHILD DEVELOPMENT**

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## I. Introduction

**A**nalysis of the child health situation must necessarily begin with mortality and morbidity statistics, which have already been presented and analyzed in other chapters of this publication. Nevertheless, the presence of important risk factors should also be noted, and the status and use of available services for this population group should be examined (1).

With regard to risk factors, one of the critical factors for ensuring normal child development is adequate nutrition. The importance of good nutrition has been amply documented, as has the positive impact of nutritional supplementation on children's future level of development, especially when it is accompanied by appropriate psychosocial stimulation. This points up the need for all programs aimed at promoting integrated care for children—with special emphasis on neuro-maturational aspects—to assign high priority to nutrition and related factors.

In Latin America and the Caribbean it is estimated that more than 7 million children under 5 years of age suffer from moderate or severe malnutrition (2). Nutritional problems, however, are not limited to protein-energy malnutrition. They also include deficiencies of micronutrients, especially iodine and iron, whose effects on neurological and intellectual development are widely recognized. These two deficiencies remain an important problem in numerous countries of the Region and, sadly, continue to have a detrimental effect on child development.

Severe and profound mental retardation occurs in approximately 3-5 per 1,000 live births, while moderate to mild retardation affects up to 11 per 1,000. A study conducted in Santiago, Chile, among families in lower socioeconomic brackets found deficits in psychomotor development in 16% of children under 2 and 40% of children aged 2-5 (3).

Based on available epidemiological data, it can be estimated that the prevalence of emotional, behavioral, and learning disorders among children under the age of 18 in the Region of the Americas ranges from 10% to 20%. Data from various other studies indicate that in Latin America and the Caribbean approximately 17 million children between 4 and 16 years of age have some degree of psychiatric disorder requiring treatment. Compounding this situation are neurological problems such as epilepsy and cerebral palsy, the prevalence of which remains high (around 10 per 1,000) (2).

Almost all these pathologies can be reduced through the application of intersectoral interventions that it is feasible to carry out at the local level. These include education of women, adequate spacing of births, good prenatal care, appropriate psychosocial stimulation of children, and prevention of specific nutritional deficiencies.

## II. Theoretical Framework for an Integrated Approach to Child Development

The development of a human being is too complex a process to be condensed into one or two anthropometric measurements or an index or scale of psychomotor development. Changes in the body and mind of a person who is experiencing overall growth can only be adequately interpreted through a holistic vision that takes account of the physical and psychological dimensions of the individual and the family and social atmosphere in which the development process takes place (4).

For many people, unfortunately, a child development project or program conjures up the image of 20 or 30 small children playing with brightly colored blocks or triangles in a preschool setting, under the supervision of a professional teacher (11). For others, it evokes only an examining room with scales and anthropometric instruments in a health center or hospital, where medical and nursing personnel weigh and measure children.

Both views are unfortunate because they limit the concept of biopsychosocial development in time and space. They imply a narrow institutional approach that relies on the existence of centers that compensate for elements lacking in the family environment and often exclude parents and members of the community (11). These images have stereotyped child development programs, limiting their scope of action and reducing their capacity to attract political support and intersectoral investment.

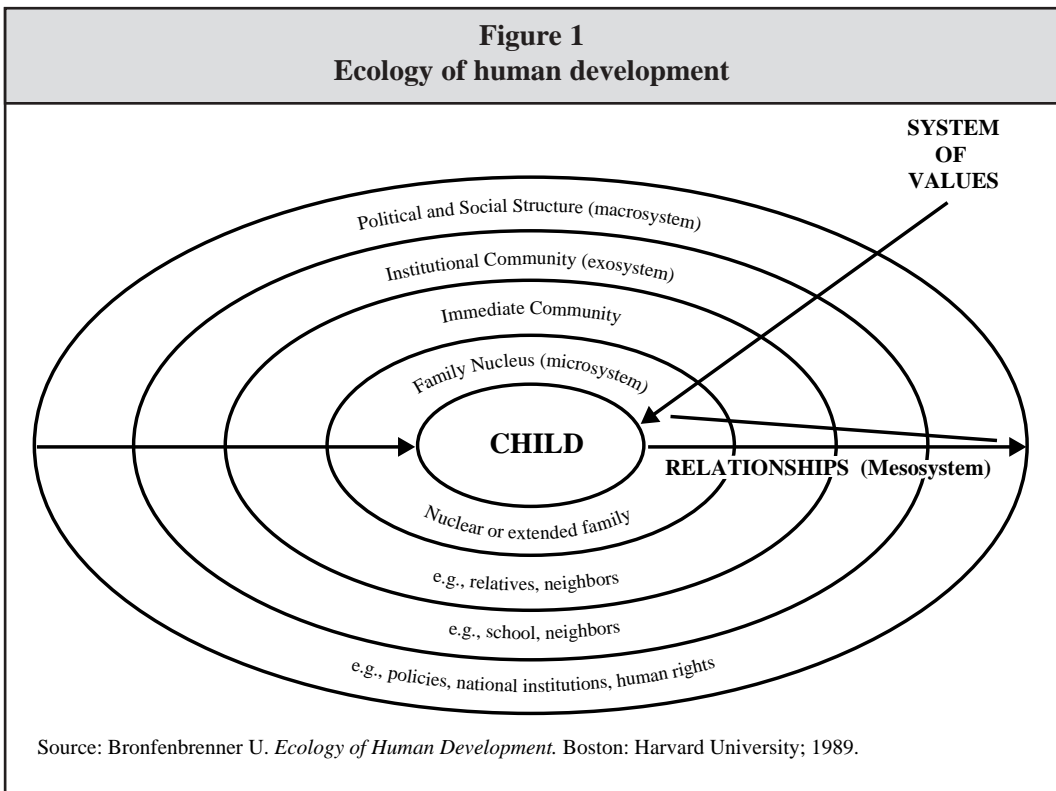
According to Bruner, development is not a matter of gradual growth in associations, nor is it a quantitative process of mere stimulus-response relationships, but rather a sequence of periods of effort and rest. These efforts are not related only to age, but also to environments and circumstances, which may or may not be conducive to development. Bruner's idea is important for child development programs, because according to him, it is not sufficient to have reached a certain age for a child to have achieved a certain level of mental development (6).

Bronfenbrenner introduced the concept of ecology in development and highlighted the phenomenon of interaction between the child, his immediate environment, and the social milieu (7). He hierarchized Lewin's classic equation, in which behavior is a function of this interplay between the person and the environment (9).

<b>LEWIN'S EQUATION</b>
<p><b>B = f (PE), where:</b></p> <p><b>B = Behavior, maturation</b>  <b>f = function of</b>  <b>P = Person (child)</b>  <b>E = Environment (psychosocial)</b></p>

This implies that equal emphasis should be given to both elements: the child and the environment, with special attention to the interaction between the two. However, in practice there is a marked asymmetry, a hypertrophy of interventions focusing on children, with little attention to their environment, their parents, and their caregivers.

Although Bronfenbrenner's ideas are too profound and complex to explore in depth here, of particular note is his incorporation of the concept of mesosystems, which comprise two or more inter-related settings, or microsystems, in which the developing individual participates actively. For a child, these microsystems are the home, the school, and the neighborhood; the relationships that exist among them constitute the mesosystem. The nature of these relationships and their degree of consistency and harmony are important variables affecting the psychosocial development of the child (Figure 1).



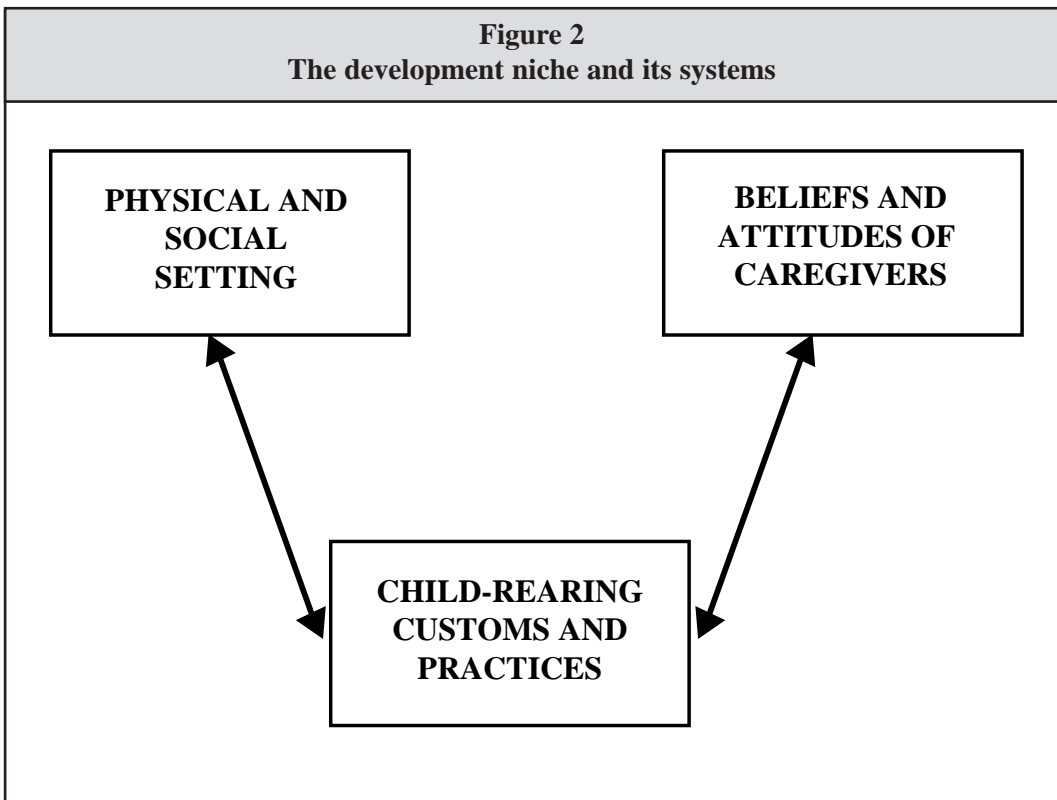
As the figure shows, the child is immersed in his family nucleus and from there moves out to new settings (school, neighborhood), each of which is a microsystem. The interconnections that occur between microsystems and between them and the child form a social network of tremendous importance for the psychosocial maturation of the individual (mesosystem).

Added to this is the framework created by the sociopolitical structure and other settings that do not involve the child as a participant, but in which events happen that affect him/her indirectly. These are known as the exosystem and the macrosystem. In this connection, it is well worth asking how child development may be affected by a political system in which repression and violation of human rights are daily occurrences.

Super and Harkness, from an anthropological perspective, originated the concept of "developmental niche," which they define in terms of three components or subsystems that are intimately related and exercise a constant reciprocal influence upon one another (8) (Figure 2).

What is important from the standpoint of the subject of this publication—programming of maternal and child health activities at the local level—is the contribution that these authors made by rejecting the idea of a "universal child" for which universal programs should be developed. Their emphasis on the interpretation of differences provides scientific and technological justification for decentralization and local programming (8).

These fundamental landmarks in the evolution of thinking about child development, together with others not mentioned in this article, have gradually led to the emergence of a new conception



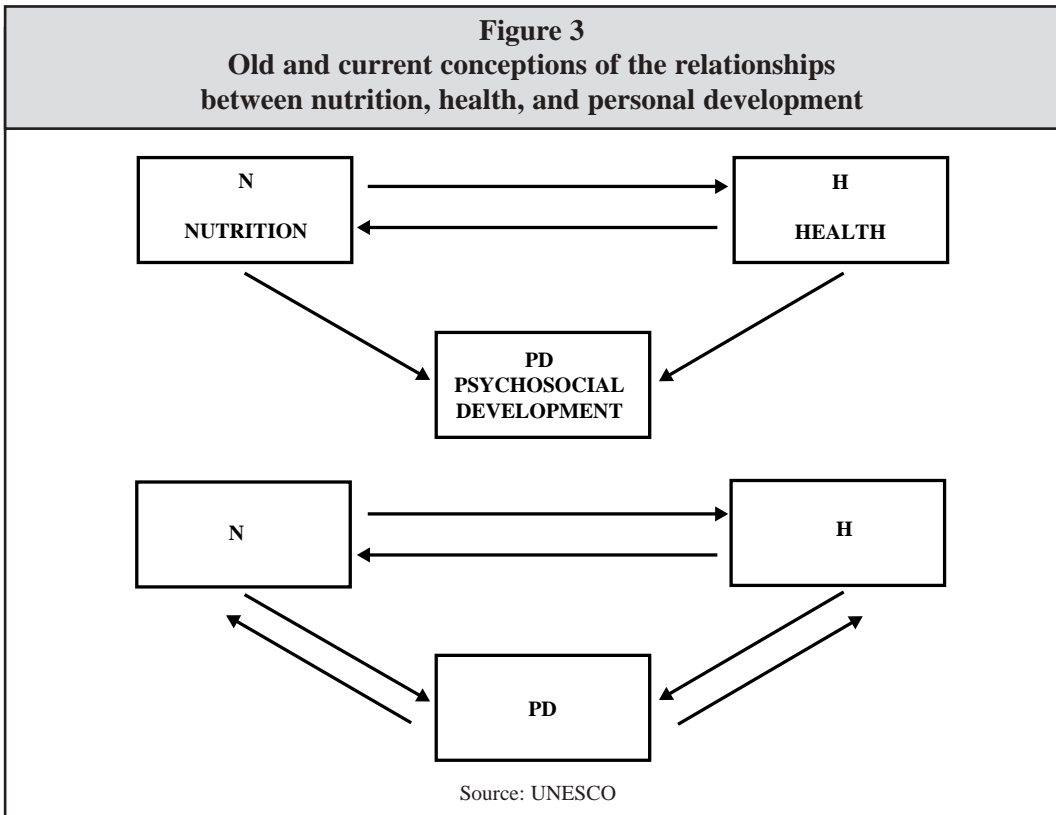
of the links between nutrition (N), health (H), and psychosocial development (PD) (Figure 3). Studies sponsored by PAHO since 1970 in Jamaica, Central America, Mexico, Colombia, and Chile were critical to the development of this updated concept of relationships.

Recently, Pollitt and associates compiled some of these studies and found that their long-term results, like those of other studies at the global level, show a remarkable reciprocity in the effects of interventions and, in particular, the importance of psychosocial factors in the nutrition and physical health of the child (10, 12).

As can be seen in the upper part of Figure 3, earlier conceptions recognized a two-way relationship between nutrition and health. However, the link between nutrition or health and psychosocial development was considered a one-way relationship from N or H to PD. The repercussions of physical health and nutrition problems on social and emotional development were recognized, but little importance was attached to the inverse relationship. It was rightly believed that nutritional interventions had an impact on the social development of children, but little merit was given to the idea that psychosocial development interventions could have an effect on nutritional status or growth.

As can be seen in the lower part of the figure, today the two-way relationships between psychosocial development, health, and nutrition are recognized, and it is therefore believed that specific interventions in these areas will ensure overall child development (5).

These ideas might seem obvious, but it suffices to analyze a few programs and projects, especially those managed by the sector health, to see that the bulk of international cooperation has been guided by the thinking represented in the upper part of the figure.



The acceptance of the current conception implies a transformation of programs and projects, which must now evince from the outset a vision of these interrelationships and express that vision in simultaneous action to strengthen all three components. To do this, it is necessary to have an administrative structure at the local level, or local governments with an adequate degree of organization, capable of coordinating the actions of various sectors locally (13).

To sum up, then, in accordance with current thinking, the formulation of integrated child development programs or projects should reflect the following trends and conceptual advances:

1. From the conception of growth and development as a sequence of stages to a conception that sees it as a multidimensional process, which includes biopsychosocial and cultural aspects;
2. From the emphasis on a single dimension and direction to a multidimensional and integrated view;
3. From one-way relationships (nutrition → health → development) to a perception of two-way interaction in which psychosocial factors also affect health and nutrition;
4. From the view of the child as a passive recipient of stimuli to one of the child as an active protagonist who influences the entire process and interacts with his/her environment;
5. From the idea of a "universal child" to a more culturally and locally defined concept;
6. Recognition of the fact that programs will not be effective if they act only on the child; interventions must also act on the child's environment or "ecological niche" (8);
7. Recognition of alternatives concerning the "gateway" for projects, which may be through

**Figure 4**  
**Concept of growth and development promotion**

1. WITHIN THE HEALTH SECTOR

Growth and development as the axis integrating strategic interventions in child health

- Specific actions

Growth { Breast-feeding  
Supplementation  
Education on food/nutrition  
Micronutrients

Development { Mother/child prenatal relationship  
Bonding  
Stimulation  
Resilience

- Community participation and social mobilization

2. INTERSECTORIAL

Activities with parents and teachers  
Mass media  
Training of caregivers

Education  
Recreation and sports  
Legal system and culture  
Public works and urban planning

- Community participation and social mobilization

various sectors (education, agriculture, health) or different age groups (prenatal, adolescent, school-age), as well as acceptance of alternatives with regard to leadership (NGOs, teachers, psychologists);

8. Modification of the concept of a system as the provider of health services to that of families as the producers of health, assigning roles to parents and other members of the family;
9. Recognition of the value of the institution of the "extended family" which, far from being a mark of underdevelopment, has been identified as a positive factor for the psychosocial well-being of the child (14);
10. Emphasis on strengthening positive factors in order to overcome adversity (resilience), both at the family level and in school and in other microsystems in which the child functions (14).

This "decalogue" of current principles for promoting the overall development of human beings can be used in programming actions at the local level, as well as in formulating objectives and setting goals. Some examples of the application of these principles are given below.

### **III. Basis for and Approaches to Programming of Integrated Child Development Activities at the Local Level**

The preceding paragraphs have attempted to summarize the current holistic conception of child development and have alluded to the programmatic implications of some of the theoretical knowledge that has come to be accepted in recent decades.

These advances in theory have resulted in successive adjustments in ideas relating to programming of activities in concrete situations. The concept of development promotion has thus emerged. This concept refers to the group of actions and interventions carried out by diverse sectors in specific centers or in the community and in homes, targeting children or their environment. These actions are aimed at enhancing the biopsychosocial maturation of children in order to help them grow into normal, mature, refined adults (15).

As was noted at the beginning, this concept goes far beyond the images that these programs generally evoke. Figure 4 shows the wide range of interventions that it encompasses, both within the health sector and in the intersectoral sphere. It should be accepted that many times the initial impetus for a program or its main component may come from outside the health sector—for example, the education sector (preschool centers), social action initiatives (child feeding centers), or recreational associations (sport clubs).

Programs may also originate within the community itself or may be initiatives of private enterprise, with no connection to the health sector. In all cases, however, the appropriate health agencies should cooperate in order to assure surveillance of nutritional status and detection of pathologies, immunization, and a minimum of monitoring, as well as stimulation of psychosocial development.

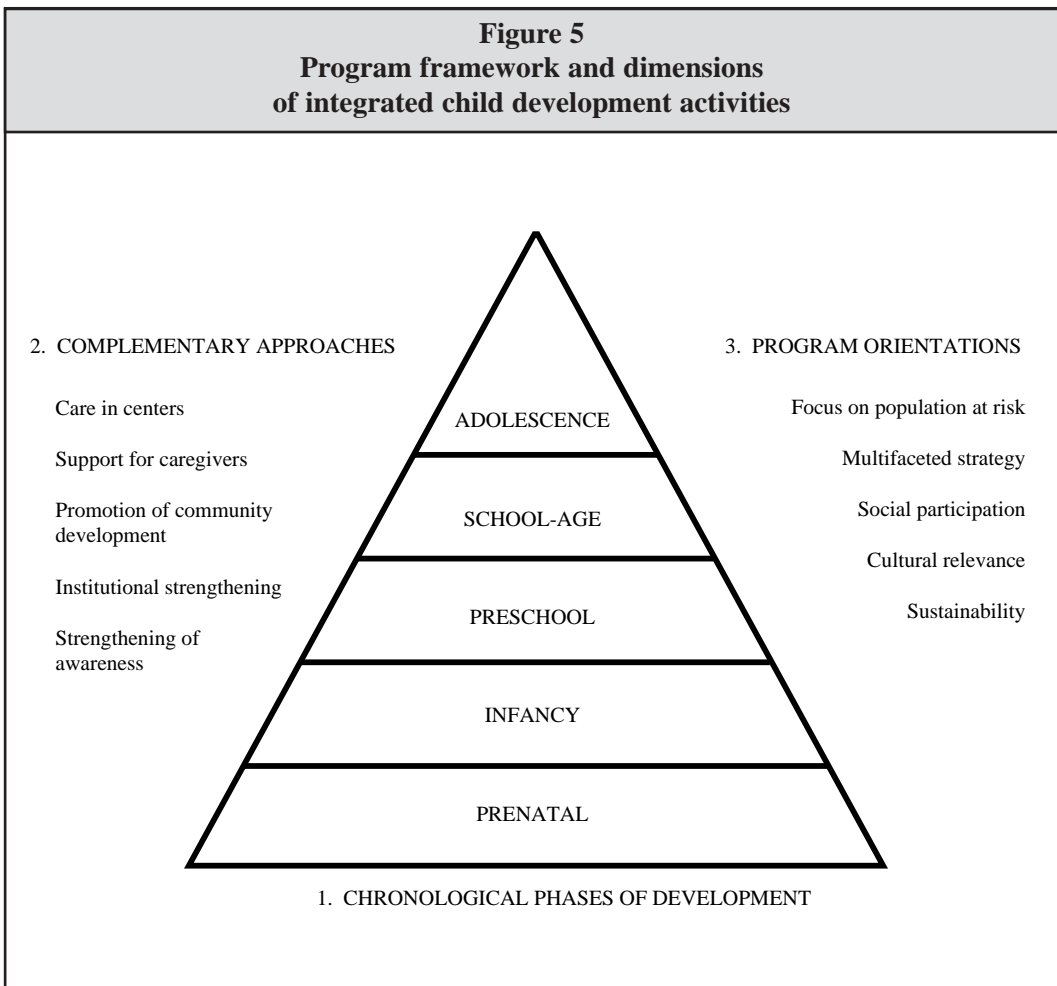
The type of approach described here does not seek to create a vertical superprogram in the specialty. Rather, it proposes the concept of human development as the core of interventions in child and adolescent health. Although the idea might seem somewhat excessive, this concept could also

serve as the guiding principle for an entire comprehensive health program within a local system, since growth and development do not cease during adulthood or old age (16).

Viewed in this way, growth and development would help to unify interventions which, especially in the area of child health, are frequently fragmented across multiple vertical programs. These programs no longer receive the priority that they once enjoyed at the local level in many places in Latin America.

This conception of integrated development provides flexibility for the incorporation of other priority components such as control of diarrheal diseases and immunization, as well as programs to address behavioral disorders and learning disabilities. It is also imperative to acknowledge the importance of preparing today's children to function competently in complex industrialized societies.

These ideas might be represented graphically in a programmatic framework for action at the



local level, such as that shown in Figure 5. This framework has three dimensions: the first is the *phase or level of development* of the population included in the program; the second comprises the *complementary approaches* applicable in each age group; and the third dimension includes relevant *program orientations* (5).

### **1. Chronological phases of development**

This first dimension is defined by the changes in development needs that occur during the various phases of evolution of the human being. These needs will be different during the prenatal period, infancy, and the moment at which the child leaves the restricted environment of the home to go to school and then into the vast external world.

In order to be complete, a development strategy must respond to changing needs throughout the process. It is not sufficient to be concerned about the development of a child only when the child reaches the age of 3 years, overlooking the importance of the previous stages. Neither is it enough to improve prenatal care and the conditions in which the child is born only to ignore his/her development needs later on.

Because human development follows a basic pattern (albeit with significant individual and, especially, cultural variations), it is possible to establish programs of appropriate activities for each of the chronological phases into which health programs have traditionally been grouped: the prenatal period, infancy, preschool, school-age, and adolescence (11).

Nevertheless, this division should not obscure the fact that development is a continuous process and that it requires continuous and coordinated attention. Every attempt should be made to resist the tendency to neglect psychosocial considerations before the age of 3 years or to consider that the child "belongs" to the education sector after that age.

It is important to counteract the tendency to limit programming in child development to a certain age group (for example, the preschool period). The simultaneous nature of child survival, growth, and development must be recognized. It is therefore necessary to make explicit, within an overarching framework, the need for programs that encompass various periods, taking into account the variations that human beings experience in the growth process (16).

### **2. Complementary approaches**

This dimension comprises actions that may be directed at a child in various environments, as well as the actions that occur in the social and family environment with which the child interacts constantly.

Interaction with the family, the community, institutions, and cultural values takes place at various distances from the child. Each one of these levels of the environment influences the initial development process, either by affecting the child directly or through the activities and beliefs of the people who care for him/her. A comprehensive strategy of programming for the care and development of children that seeks to bring about real improvements in child survival, growth, and development should be designed to have an impact on all these levels.

Something more than simply supplying a service directly to the child should be accomplished; it

is also necessary to strengthen and enhance the various environments in which he/she is developing. To this end, five complementary program approaches (18) might be postulated as the principal strategies to be implemented at the local level. Some of these contain health promotion elements that are central to an integrated approach to child development.

### ***2.1 Care in centers***

The immediate goal of this approach, which focuses directly on the child, is to enhance child development by attending to the immediate needs of children in centers outside the home. These centers are, to a certain extent, "alternative" environments to the family. They include health centers, recreation centers, childcare centers, feeding centers, and others.

### ***2.2 Support for caregivers***

This approach focuses on family members. Its purpose is to educate and train parents and other relatives. The ultimate objective is to improve the care of and interaction with the child and enrich the immediate environment in which development takes place, rather than offering an alternative to that environment.

### ***2.3 Promotion of child development at the community level***

In this case, action is aimed at changing conditions in the community that might negatively affect child development. This strategy emphasizes community initiative, organization, and participation in a variety of interrelated activities.

The objective is to try to improve the physical environment and enhance the knowledge and practices of community members, as well as to expand the organizational base so as to enable community action and improve negotiation and leadership skills (17).

### ***2.4 Strengthening of institutional resources and capabilities***

Many institutions are involved in applying the three aforementioned approaches. In order to be effective, they need financial, material, and human resources to be able to plan, organize, implement, and evaluate programs.

Programs designed to strengthen institutional capabilities must provide for the creation of institutions, as well as training, supply of materials, and the introduction of innovative techniques and models (upgrading the technology currently available in the institutions) (18).

At the local level (municipalities or districts), there may be numerous nongovernmental institutions that instigate activities and require only complementary support for their execution.

### ***2.5 Strengthening of awareness***

This approach emphasizes the dissemination of information to raise awareness of the importance of child development activities and create public demand for them. Awareness-raising efforts may also target policy-makers, who sometimes have a vague concern about the issue of child development but lack the necessary information to enable them to assign it the priority that it deserves within local government programs.

These approaches are intended to be complementary, which implies that they are carried out

jointly and strengthen one another. They are in no way mutually exclusive, and no single one alone can be considered better than the rest.

They should be combined strategically, in keeping with local conditions and the availability of resources in the municipalities, districts, or local systems in which the program is being implemented (18).

### **3. Program orientations**

In the design and execution of integrated development programs at the local level, it is important to be mindful of certain principles or criteria deriving from orientations and guidelines established at a more general level (19).

Several of these are particularly worthy of note, in light of the nature of integrated development processes and current knowledge and thinking about them.

These program orientations may correspond, to some extent, to the stages for implementation of the strategies described in the preceding section as complementary approaches. The stages can be implemented simultaneously in order to ensure complementarity of action.

#### ***3.1 Focus on high-risk populations***

All programming aimed at achieving equity must seek to reach the neediest populations, that is, those who are most vulnerable to developmental delays, whether in terms of physical growth or psychosocial maturation.

These risk factors have been widely studied, both in Latin America and in the industrialized countries, and it will not be difficult to apply the findings of these studies in each local system. The most frequently cited risk factors are low birthweight, malnutrition, recurrent illness, maternal illiteracy, adolescent pregnancy, multiparity, single-parent families, lack of support from the extended family, and lack of access to safe drinking water and sanitation services (20).

These risk factors, which lead to different maternal and child health impairments, vary in relative importance and weight, depending on the specific conditions in each local system. A specific focus on psychosocial development delays endows certain social variables, such as family and family makeup, with greater importance. Other significant factors include support systems, child-rearing beliefs and practices, and socioeconomic conditions in the neighborhood in which the child grows up (21).

#### ***3.2 Multiple and multifaceted action***

The right of each child to realize his/her genetic potential has been frequently mentioned as starting point for child development programs. But what it means for children to realize their potential varies from culture to culture, and the specific goals derived from this objective will therefore be different in different societies.

Hence, it is considered that the main objective of the development process, and therefore of child development programs, is to strengthen children's ability to adjust, behave appropriately, and transform their own environments.

In certain cultures this will mean emphasizing independence, while in others, the goal will be to

promote group solidarity. In some cases, physical prowess will be considered most important, whereas other cultures will place high value on abstract reasoning ability. Generally speaking, however, in all cultures, physical, intellectual, and social dimensions of development will be expressed as needs.

When these different needs are satisfied, the effect is an interaction and potentiation that enhances development more than a mere sum of impacts. It is because of this interactive aspect that programs should be multifaceted and integrated.

Unfortunately, in the health sector a tendency toward fragmented approaches has prevailed up to now, with programs targeting specific health or nutrition problems and giving little attention to issues such as stimulation or the interaction between caregivers and children.

On the other hand, programs developed in the education sector have often missed opportunities to complete immunizations, monitor growth and nutritional status, or address morbidity in general.

There must be a continual effort to combine these interventions, despite the acknowledged difficulty of trying to establish connections between separate bureaucracies, which do, nevertheless, converge within the same community.

The concepts of local health systems and healthy cities/communities may offer a means of applying such combined approaches, which are well-founded and in keeping with current scientific knowledge.

The strengthening of institutions should also be undertaken in an open and integrated way. Training of personnel in a health center or hospital should not be limited to training in the treatment and prevention of childhood illnesses. It should also include topics relating to child development and the promotion thereof.

At the same time, training of preschool teachers in the techniques of Piaget, which are related mainly to the process of cognitive development, should be enhanced by essential knowledge on nutrition and even the treatment of some illnesses.

### ***3.3 Social participation and community-based programs***

Frequently in projects and programs, a manipulation or limited use of the potential of the community has been observed.

A more complete approach to community participation in a program should include the mobilization and the direct participation of the community in all phases, from program design through execution and evaluation. This implies the existence and the enhancement of organizational mechanisms through which this participation can take place. It also means involving the entire community, not just some individuals, in a constant process of discussion and action.

The difference between a participatory perspective and one that is not participatory is reflected in the distinction between "transmitting messages about child development" and "discussing the issues involved in child development." Similarly, programs of community development and activities to strengthen institutions may be highly participatory and be locally controlled, but they may also be imposed from elsewhere and be almost totally lacking in community participation in the planning, financing, and execution phases.

Lastly, the process of raising awareness in the general public and among political authorities,

professionals, or leaders who influence public opinion can also be designed to be as participatory as possible. The people can not be told what they should value or what they should believe, but they can be helped to discover these things for themselves through participation (22).

### ***3.4 Cultural relevance***

Programs should be adapted to the cultural and social characteristics of each setting. There is abundant evidence that the so-called "universal child" does not exist, especially from a psychosocial perspective (8).

Programs are more likely to be effective and long-term if they are based on approaches and solutions tested at the local level, although all societies tend to place high value on the ability to work out problems and on innovative solutions born of need.

Nevertheless, it cannot be denied that "foreign experts" can sometimes play an important role in helping communities to consider and experiment with new methods for promoting child development.

Respect for autochthonous cultures and use of local methods can be viewed more as a "constructive" approach than a "compensatory" one. If there is true community participation, programming will be, by definition, constructive and will respect cultural conventions (23).

### ***3.5 Sustainability of projects and programs***

Programs should be financially viable and, to the extent possible, profitable. On one hand, they should be executable within budgetary limitations and should expend resources in accordance with the practices of the society in which the project takes place. From the outset, they should include mechanisms aimed at making them self-sustaining, at least in the medium term.

Often, initial external cooperation generates patterns of technology use that cannot be maintained after the donor withdraws. It is also common for a subsidized project to have technological facilities (fax and electronic mail, for example) amid institutional poverty, which leads to rejection and ensures that the project will be short-lived.

Hence, projects should be managed conservatively and in harmony with the surrounding environment. In addition to the ethical principles that this implies, conservative management practices increase the likelihood of long-term sustainability. Nevertheless, the aim is not so much to make programs "low-cost" as to reduce the costs as much as possible without sacrificing effectiveness. A low-cost project that produces no useful results is a waste of money.

It is important bear in mind that, at the local or municipal level, the decision to support and maintain a project will be made by authorities close to the site of the project (mayors, municipal councilmen, and others). An impression of prudent management and careful use of resources will be necessary in order to ensure the maintenance of projects.

In some instances today, private companies are contributing substantially to the financing of projects. In addition to any altruistic motives they may have, they often have specific corporate and commercial objectives, as is the case with companies that have many female staff members, where it has been seen that the establishment of an integrated child care and development project with a recreation center reduced absenteeism and increased worker productivity. Other forward-looking companies are concerned with child development as a means of creating a better-prepared labor

force for the future (24).

Clearly, it is at the local level that it is possible, with appropriate leadership, to carry out this type of joint effort, combining official resources, community effort, private-sector participation, and external cooperation.

These orientations for local programming are expressed as a proposal, in the spirit of generating discussion, promoting creativity, and contributing elements for the formulation of programs and projects that will include this holistic conception of child development as the cornerstone of human development (25).

## **IV. Objectives**

Presented below are some suggested objectives for integrated child development programs at the local level. These are tentative and might be used as a model. Actual objectives must be established on the basis of analysis of conditions in different situations, services, communities, age groups, and cultures.

### **1. General objectives**

- 1.1 To contribute to the improvement of child health conditions through strengthening of intra- and intersectoral action and social participation in the promotion of overall child development; and
- 1.2 To promote the integration of child health and development activities.

### **2. Specific objectives**

- 2.1 To promote increased coverage and improved quality of care in integrated child development activities;
- 2.2 To improve the training of health service personnel with regard to integrated approaches to child development, applying the participatory methodologies used in health education of the population;
- 2.3 To promote increased emphasis on overall child development in the curricula of schools that provide training in child health;
- 2.4 To promote the integration of instruction and in-service training in maternal and child care through the adoption of an integrated child development component as a cohesive force in both the academic and practical aspects;
- 2.5 To strengthen the formal health services infrastructure and the informal health care system in relation to integrated child development activities;
- 2.6 To promote social participation, with emphasis on the incorporation of the family and the community in analysis, decision-making, planning, execution, and evaluation of integrat-

- ed child development activities;
- 2.7 To generate, reproduce, and disseminate scientific and technical information on child development, involving the population targeted by the actions;
  - 2.8 To help improve the capacity of the services to address general child development problems;
  - 2.9 To support research aimed at increasing the efficiency, effectiveness, and equity of integrated child development activities;
  - 2.10 To strengthen child development information and monitoring systems in coordination with food and nutrition surveillance systems (SISVAN) (26).

## V. Targets

### 1. Service targets

- 1.1 To increase the coverage of growth monitoring for children and adolescents by an average of 20% by the year 2000 in relation to the available figures for 1995 for each age interval (1). This effort to increase coverage should take into account the minimum monitoring standards established by each country. The target to be achieved (the proposed percentage) is a regional objective, which may be adapted to the circumstances of each country.
- 1.2 To increase monitoring of overall child development (both growth and development) to a minimum of 6 monitoring visits in the first year of life, 2 visits per year between the ages of 1 and 4, and 1 visit per year for older children.
- 1.3 To apply referral and back-referral mechanisms for the most common child development disorders in 50% of communities or local levels by 1995 and 80% by the year 2000.
- 1.4 To increase the efficiency of primary care services and pediatric outpatient services 65% by 1995 and 80% by the year 2000.
- 1.5 To reduce missed opportunities for surveillance and monitoring of overall child development 50% by 1995 and 80% by the year 2000.
- 1.6 To incorporate child development monitoring in local programming in 50% of the communities or systems in which monitoring is occurring by 1995 and in 100% by the year 2000 (1).

### 2. Infrastructure targets

- 2.1 To strengthen primary care and pediatric outpatient care in accordance with the regional numeric targets.
- 2.2 To strengthen referrals in order to increase the capacity to address child development problems.
- 2.3 To increase the number of local-level detection and intervention systems that are functioning effectively and in coordination with referral services from an estimated 30% in 1995 to 50% by the year 2000 (1).

### **3. Education and research targets**

- 3.1 To provide decentralized training to 50% of all health workers at the primary care level by the year 2000.
- 3.2 To incorporate content relating to monitoring and evaluation of performance in integrated attention to child development in 100% of health personnel training plans by the year 2000.
- 3.3 To achieve broad access to current basic scientific information on integrated approaches to child development in 50% of local communities and 100% of reference centers and centers of technical excellence.
- 3.4 To incorporate instruction on overall child development into the curricula of 100% of health training institutions by the year 2000 (*I*).

### **4. Social participation targets**

- 4.1 To incorporate the targets for child development activities into community development plans.
- 4.2 To formulate healthy public policies that will contribute to overall child development and to the advancement of young people.
- 4.3 To increase health education efforts, especially with regard to child development, in various community groups and at events sponsored by grassroots organizations, parents' meetings, teacher training activities, union activities, and others, with a view to identifying and analyzing the conditions that lead to problems in the areas of growth and development, malnutrition, and social problems such as lack of green spaces and unemployment.
- 4.4 To coordinate with the communications media, including radio programs and others, the dissemination of messages aimed at informing and influencing the public agenda and mobilizing the society to address problems and promote health.

## **VI. Cost Estimates**

Estimates of the financial resources needed to carry out a plan of integrated child development activities at the local level should be made taking into account the following considerations:

1. Health services may already be carrying out some of the activities contemplated under the plan;
2. Some components of the plan might be undertaken in conjunction with other child and adolescent health interventions;
3. A separate infrastructure should not be created for these activities;
4. A greater number of interventions should be planned for the groups at highest biological and social risk;
5. The gap between existing and target levels of coverage should be quantified, and on the basis of this information the requirements for additional necessary resources (human and material) should be calculated;

6. Investment in the improvement of conditions that are conducive to efficiency is a means of increasing the productivity of services and reducing costs;
7. The minimum growth and development monitoring activities that should be carried out each time a child is seen by a health service at any level should be determined in accordance with the established standards of care. Decisions regarding additional activities should be made in accordance with risk criteria and the complexity of the services. These decisions will have repercussions on costs and coverage.

Taking into account these considerations, costs estimates for a specific period might be calculated in accordance with needs in the following areas:

- a) Adaptation of the infrastructure of services at the primary care level;
- b) Strengthening of the response capacity of the secondary level;
- c) Training of health services personnel;
- d) Health education and strengthening of community participation;
- e) Improvement of instruction in integrated approaches to child development at schools of medicine, nursing and nutrition, sports and education;
- f) Health services research and studies to determine psychological development milestones (1).

## VII. List of Available Technical Documents and Materials

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