Integrated Management of Childhood Illness (IMCI): an innovative vision for child health care

Atenção Integrada às Doenças Prevalentes da Infância (AIDPI): uma visão inovadora para os cuidados da saúde da criança

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Abstract *The Integrated Management of Childhood Illness (IMCI) strategy developed by the World Health Organization (WHO), Panamerican Health Organization (PAHO) and the United Nation Children's Fund (UNICEF), joint experiences of previous frequent diseases programs in children, with prevention and health promotion activities. In this new approach the family, the community and health workers have a leading role in health condition of the child. The strategy aims a reduction in Infant Mortality Rate, specially in those regions and countries in which it is high. Pneumonia, diarrhea, malnutrition and other preventable diseases are the main causes of deaths in this settings. Health workers can early recognized danger signs of severe diseases, as well as they can evaluate and treat the most frequent health problems. By enhancing prevention and health promotion activities, as better conditions of life, giving an holistic vision of the child and his family, and not only looking for the symptom that motivate the consultation.*

Key words *Child care, Infant mortality, Health education*

Resumo *A estratégia de Atenção Integrada às Doenças Prevalentes da Infância (AIDPI), desenvolvida pela Organização Mundial da Saúde (OMS), Organização Panamericana da Saúde (OPAS) e Fundo das Nações Unidas para à Infância (UNICEF), incorpora as experiências prévias de programas para tratar as principais doenças infantis, acrescentando aspectos preventivos e de promoção à saúde. Nesta nova visão, outorga papéis fundamentais à família, à comunidade e ao trabalhador de saúde que desenvolve o seu trabalho no primeiro nível de atenção. A estratégia visa principalmente diminuir as taxas de mortalidade infantil em países e regiões onde elas ainda são muito elevadas, com cifras acima de 40 por 1.000 nascidos vivos, situações em que as pneumonias, diarréias, desnutrição e outras doenças evitáveis são as principais causas de óbito. Pretende também mudar o perfil da demanda ambulatorial dando ênfase a atividades preventivas de alto impacto, como educação em saúde, imunizações e promoção ao aleitamento materno. Permite ainda ao trabalhador de saúde fazer a detecção precoce de sinais de perigo em doenças graves, assim como avaliar e tratar, de forma adequada, os problemas de saúde mais freqüentes, ao mesmo tempo que educa as famílias em relação aos cuidados a serem oferecidos em casa.*

Palavras-chave *Cuidado da criança, Mortalidade infantil, Educação em saúde*

Introduction

Health of infants has always been a priority expressed by most of the countries of the world. In recent years, and especially during the decade of the 90s, it has been present continuously in the international agenda.[1-6] The World Summit for Children[7] constitutes in this regard an obligatory reference. In addition to having made explicit concrete commitments in terms of reduction of mortality and morbidity, and improvement in child health conditions, it represented the starting point of a large number of initiatives to strengthen and extend measures to this end.

Within the framework of this renewed presence of child health as a priority issue, the presentation of the strategy of Integrated Management of Childhood Illness (IMCI), prepared jointly by the Pan American Health Organization (PAHO) and World Health Organization (WHO) and by the United Nations Children's Fund (UNICEF) represented an event of maximum importance.[8]

On the one hand, it made available a concrete tool for the achievement of the goals of the World Summit for Children that, taking advantage of the available strategies and the experience gained in their utilization, advanced toward a vision of health that was not only curative but included prevention and promotion to achieve better child health.[9] Additionally, it strengthened the process that will make it possible to advance, definitively, toward greater equity in child health conditions, putting once and for all at the disposal of every child the fruit of the knowledge and of technology that permits definitive disease control for health problems that can be avoided or reduced in their severity and consequences.[10]

The IMCI strategy advances the concept of the comprehensive nature of health care, providing a practical tool for its application, both in the health services and in the home. It takes maximum advantage of the concerns of the community and of health workers by responding to their needs, extending their capabilities and turning them into a vehicle for the promotion of a positive vision for the protection and health of the child. Thus, it returns to the health workers and to the community a leading role in the determination of the health conditions of the child, by putting at their disposal a tool for the progressive transformation of the family health and of community.[11]

Health care of the child: persistence of mortality and morbidity from communicable diseases

Although a downward trend has been observed in infant mortality, the levels of mortality and morbidity reached are not uniform among the countries and makes evident the differences among them in child health conditions.[12] The differences are concentrated in a limited number of diseases and health problems that do not have a large magnitude in the developed countries but are a frequent cause of disease and death of children under five in developing countries.[13]

Mortality

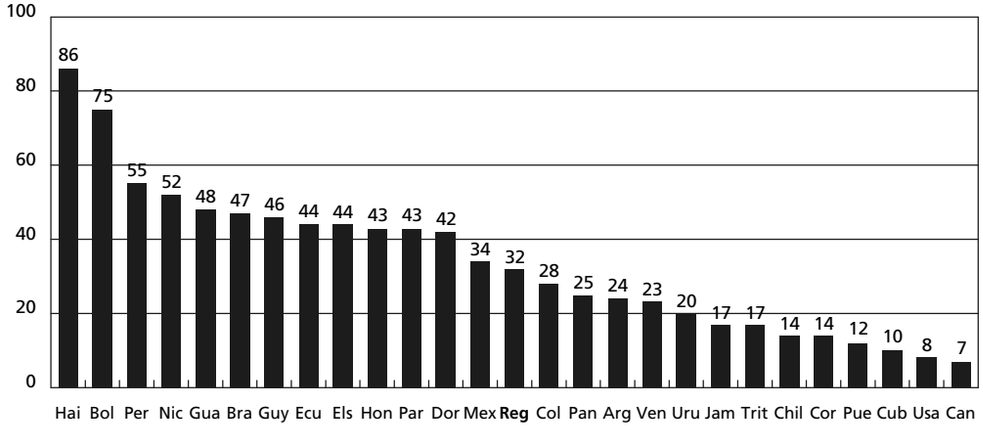
The average number of deaths that occur annually among children under five of the Region of the Americas was estimated, for 1995, at six hundred thousand. Eighty percent of these deaths occur in children under one year of age, so that every year, approximately half a million children die in the Region of the Americas before reaching their first birthday.

99,8% of deaths occur in 26 of the countries of the Region, characterized by having a number of annual births higher than 10.000,[14] but the internal distribution of the deaths in this group of countries shows large differences. In Canada and the United States, countries in which 27% of the births occur, only 7% of the deaths of children under one occur. In contrast, in four countries (Bolivia, Haiti, Nicaragua and Peru), in which only 8% of the births occur, 17% of deaths of children under one are registered.

The different situation of the infancy in the countries can be observed comparing the estimated Infant Mortality Rate (IMR) for the 5-year period 1990-1995, in this group of 26 countries (Figure 1).

Figure 1

Mortality in children under one year of age in countries of the Region of the Americas with more than 10.000 births per year. Rates per 1.000 live births. Estimates for 1990-1995.



Hai = Haiti, Bol = Bolívia, Per = Peru, Nic = Nicaragua, Gua = Guatemala, Bra = Brasil, Guy - Guiyana, Ecu = Ecuador, Els = El Salvador, Hon = Honduras, Par = Paraguay, Dor = Dominian Republic, Mex = Mexico, Reg = Region, Col = Colombia, Pan = Panama, Arg = Argentina, Ven = Venezuela, Uru = Uruguay, Jam = Jamaica, Trit = Trindade and Tabago, Chil = Chile, Cor = Costa Rica, Pur = Puerto Rico, Cub = Cuba, USA = United States of America, Can = Canada.

Source: Pan American Health Organization (PAHO), World Health Organization (WHO). Program on Health situation Analysis. Division of Health and Human Development. Washington, DC: PAHO, WHO; 1998.

While in some of them only seven out of 1.000 children born die before their first birthday, in others this proportion is at least ten times higher. Between both extremes lie the rest of the countries, showing that the existing differences are not only observed among the developing and the developed countries of the Region. For example, the infant mortality rate of Ecuador, El Salvador, Honduras, Paraguay, and the Dominican Republic, are more than twice that registered in Uruguay, more than three times that of Chile or Costa Rica, and more than four that of Cuba.

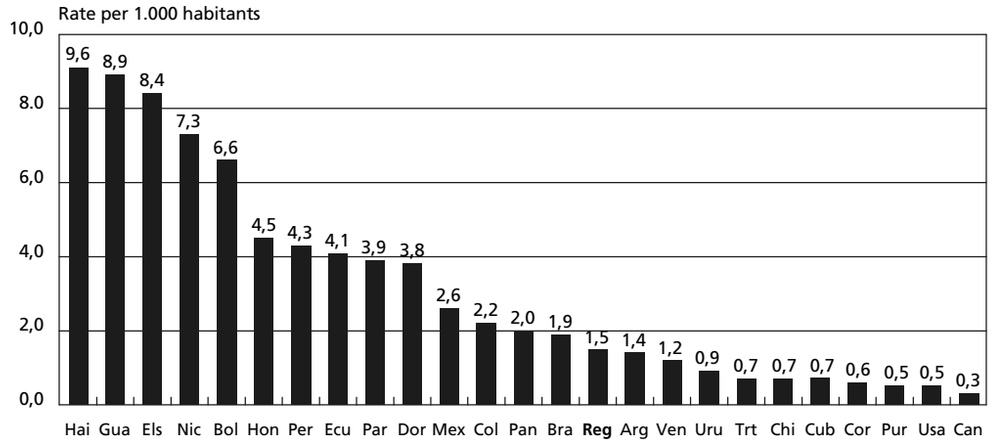
The differences between countries when mortality of children one to four years is compared are even greater (Figure 2). For example, the highest mortality is more than five times greater than the regional average, while among children under one, the highest IMR was 1,7 times higher than the regional average.

The difference in the situation for children from one to four years old between the developed and developing countries in the region are also much greater. The highest mortality is 31 times greater than the lowest (Figure 2).

The analysis of mortality by cause shows that in the countries with higher IMR, communicable diseases and nutritional disorders are responsible for a greater proportion of deaths than in the countries with smaller IMR (Figures 3 and 4). The proportion of deaths of children under one due to these causes is, for example, six times higher in the countries with IMR above than 40 per 1,000 live births than in the countries with IMR less than ten per 1.000 live births.

Figure 2

Mortality in children under one to four years of age in the Region of the Americas with more than 10.000 annual birth. Rate per 1.000. Estimates for 1990-1995.



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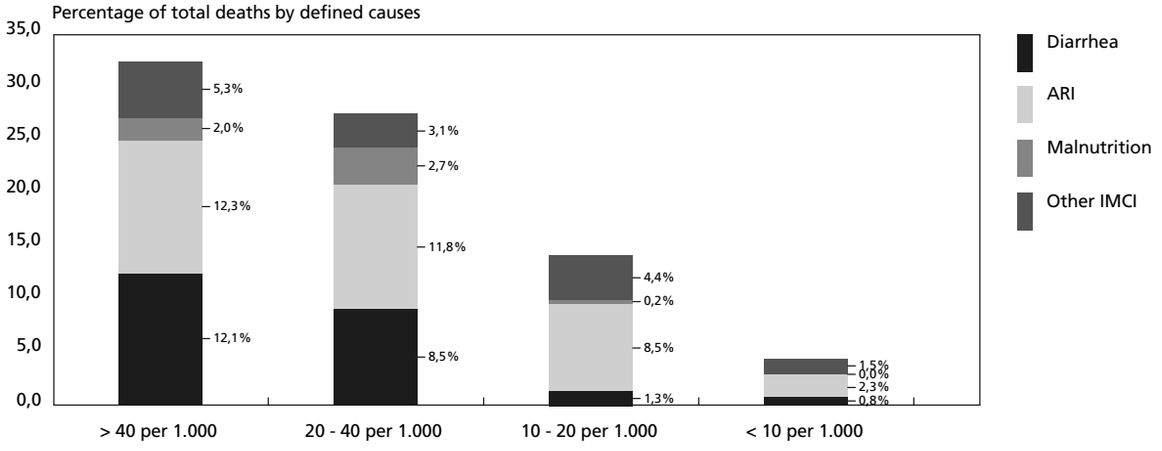
Source: Program on Health situation Analysis. Division of Health and Human Development, Washington, DC: PAHO, WHO; 1998.

Figure 3

Proportion of deaths in children under one year of age due to a few infectious diseases targeted by the IMCI strategy. Region of the Americas*. Circa 1995.

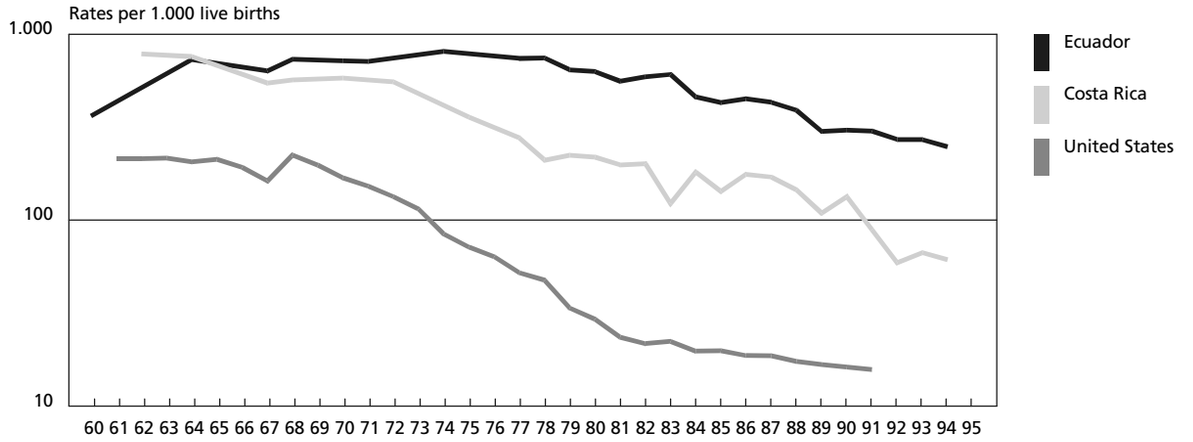


Includes only countries with a number of annual births above 10.000; IMCI = Integrated management of child Illness; ARI = Acute Respiratory Infection.

Source: Program on Health Situation Analysis. Division of Health and Human Development. Washington, DC: PAHO, WHO; 1998.

Figure 4

Tendency in mortality from pneumonia and influenza in children under one year of age. Costa Rica, Ecuador and United States, 1960-1995.



Source: Pan-American Health Organization (PAHO), World Health Organization (WHO). ARI/DD Database. Integrated Management of Childhood Illness Unit. Washington: Washington, DC: PAHO, WHO; 1996.

In the countries with IMR between 20 and 40 per 1.000 live births, communicable diseases and nutritional disorders are responsible for a quarter of deaths in children under one, and in the countries with IMR between ten and 20 per 1.000 live births, these causes are responsible for almost 15% of mortality in the group.

Acute respiratory infections (ARI), diarrhea, and malnutrition represent the leading causes of mortality within this group, and are responsible for anywhere from 3,1% of the total of deaths for causes defined in countries with lower IMR, to 26,4% in the countries with highest IMR. The burden of these diseases and health problems in infant mortality, is as a result eight times higher in some of the developing countries of the Region compared to the developed ones.

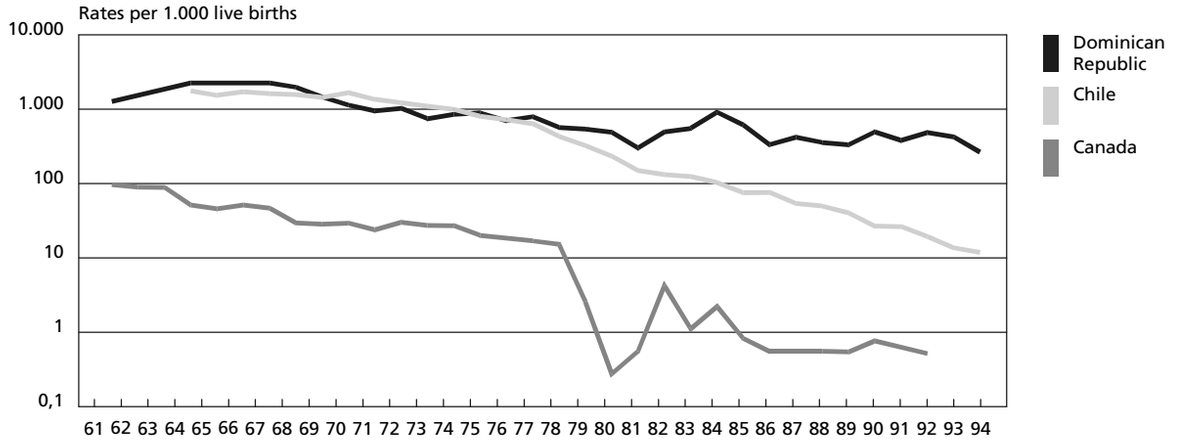
The three causes are as major in the countries with IMR higher than 40 per 1.000 live births as in those with IMR between 20 and 40 per 1.000 live births: 26% and 23% respectively. Only in the group of countries whose IMR is between 10 and 20 per 1.000 live births is the proportional burden of mortality from these causes almost three times less, although still three times higher than what is observed in the countries with the lowest IMR.

Thus, in the countries with IMR greater than 20 per 1,000 live births, this group of preventable diseases continues to be the cause of at least one out of four deaths.

The persistence of this problem can be observed upon comparing trends[15] of mortality from pneumonia and influenza and from diarrheal diseases (DD) in children under one in different countries, selected according to their IMR (Figures 4 and 5).

Figure 5

Tendency of mortality from diarrheal disease in children under one year of age. Canada, Chile and Dominican Republic, 1961 - 1994.



Source: Pan-American Health Organization (PAHO), World Health Organization (WHO). ARI/DD Database. Integrated management of Childhood Illness Unit. Washington, DC: PAHO, WHO; 1996.

Mortality from pneumonia and influenza in the United States, after having remained relatively stable between 1961 and 1968 (around 200 per 100.000 live births) began a decline that within 15 years brought the down by a factor of ten (Figure 4). In the same period between 1968 and 1983, in contrast, the mortality from these causes in Ecuador declined from 800 per 100.000 live births to 600 per 100.000 live births, a reduction of only 25%. Costa Rica, meanwhile, also in the same period, saw a fall in mortality from pneumonia and influenza from 600 per 100.000 live births under 200 per 100.000 live births, a factor of three.

The differences in the downward trend of the mortality from these causes makes Costa Rica's rate in 1994 similar to what was registered in the United States almost 20 years previous, in 1976. The mortality from these causes in this age group in Ecuador for 1994 only existed, in the United States, before the year 1960, which means that the situation is similar to which was observed there over 34 years ago.

When the trend of mortality from diarrhea is compared, the contrast is even greater (Figure 5). The mortality from this cause in children under one in Canada declined continuously between 1961 and 1992, going from 90 per 100.000 live births to 0,5 per 100.000 live births, a figure 180 times lower. In the same period, mortality in the Dominican Republic declined to a value only five times smaller. The decline in mortality from diarrhea in children under one in Chile, meanwhile, was close to that observed in Canada. Starting in 1964 with a mortality rate 20 times higher than that of Canada, the figure declined by 1994 by 150 times, to 10 per 100.000 live births. Despite this significant decline, the mortality from diarrhea in children under one in Chile in 1994 was 20 times higher than that of Canada in 1992, similar to that registered there 14 years previous.

Morbidity

Although the available data on morbidity are limited, information from various surveys and from registries of the health services show that acute respiratory infections, diarrhea, malnutrition, and other infectious diseases such as vaccine-preventable diseases, parasitic disease, etc., are among the most frequent causes of health problems in children. This group of diseases, whether individually or in combination, is one of the principal factors that endangers the general health of the child and constitutes a vicious circle of disease, deterioration in the health status of the child and generates new disease conditions of greater severity.

Information from surveys

In Table 1 information from various surveys conducted in developing countries of the Region of the Americas is presented in which the presence of diarrhea, and cough or difficult breathing was evaluated during the 15 days previous to the visit. The frequency with which the families reported the presence of cough or rapid breathing in children under five during the two previous weeks was between 18% and 24%. A similar percentage (between 17% and 30%) of families reported the presence of diarrhea in the last two weeks.

Table 1

Percentage of children under five with cough and rapid breathing or with diarrhea. Results of a number of surveys conducted in developing countries of the Region of the Americas between 1991 and 1995.

Age group in months	Cough or fast breathing				All types of diarrhea			
	Bolivia 1994	Colombia 1995	Peru 1991- 1992	Haiti 1994- 1995	Bolivia 1994	Colombia 1995	Peru 1991- 1992	Haiti 1994- 1995
All groups	18,0	24,3	23,4	20,2	29,9	16,7	18,4	27,4
0-5	12,7	22,7	22,8	26,0	17,3	14,8	18,6	29,5
6-11	24,5	29,9	34,1	25,9	33,3	27,6	30,7	48,7
12-23	18,0	28,6	28,7	18,1	39,4	25,3	30,3	42,8
24-35	17,1	24,7	24,0	16,7	24,3	16,9	17,9	28,4
36-47	*	22,9	18,9	15,4	*	9,5	11,6	13,2
48-59	*	18,0	17,4	20,2	*	9,1	8,7	12,2

* Data are not included for these age groups in the survey;
Source: National Demography and Health Surveys.

In both cases, the group from six to 11 months was most frequently sick, according to information from the parents, but the difference with the rest of the groups was greater in case of diarrhea, extending the elevated rates to the group from one to two years of age.

For example, in Bolivia, the proportion of children from six to 11 months old that experienced diarrhea in the two previous weeks was 33%, almost double the frequency with which this situation was found in the children less than six months (probably associated with the protective factor of breast-feeding, widely demonstrated by the bibliography, although the data was not cross analyzed in this particular study). In the group from one to two years old, the frequency of diarrhea reported was greater still: 39% of children of this age had the disease.

Based on these results, it can be stated that both diarrhea and respiratory infections affect health of children with high frequency. The data from the health services, in terms of the frequency of consultations for both causes, confirm this finding further.

Information from the health services

In Table 2 the distribution of outpatient consultations for children under five is presented for health services in two developing countries. In both, diarrhea and ARI represented at least 50% of the consultations of children under one and more than 40% of those of children from one to four years. When the total weight that these causes represent is analyzed together with vaccine-preventable diseases, malnutrition, and pa-rasitic diseases, some differences are observed, attributable probably to the way consultations for episodes of disease were reported compared to that of check-ups for healthy children. In both cases, however, this group of diseases is the cause of more of half of the consultations seen in the health services.

The information on hospitalizations also shows that diarrhea and ARI represent a high proportion of those (Figure 6). Data obtained from Ecuador show that nearly 30% of hospitalized children under one had a diagnosis of ARI; and that a similar proportion were hospitalized for diarrhea. Together, both diseases represented 60% of hospitalizations of children in this age group in 1993. If to these two causes are added malnutrition, malaria, vaccine-preventable diseases, and meningitis, almost 70% of the hospitalizations of children under one are represented.

Table 2

Proportion of consultations to the health services due to communicable diseases and malnutrition. Honduras, 1985; Peru, 1993- 1994

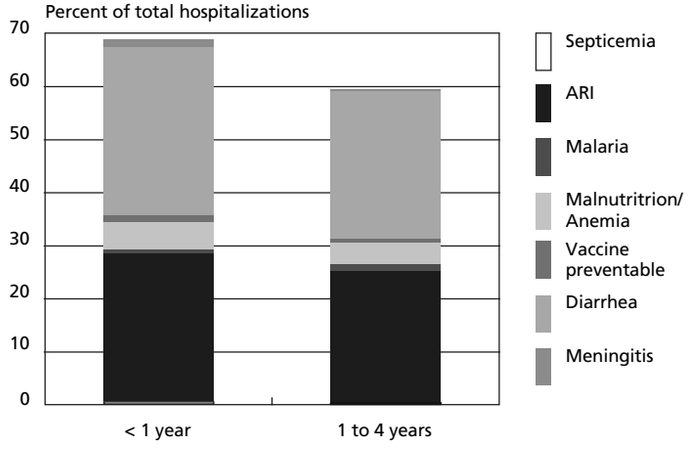
Reason for consultation	Honduras, 1985*		Peru, 1993-1994 **		
	< 1 year	1 to 4 years	< 6 months	6 to 11 months	1 to 4 years
Total	100,0	100,0	100,0	100,0	100,0
Diarrhea	22,4	13,3	26,3	34,0	30,8
ARI	29,5	26,1	69,3	59,9	57,0
Vaccine-preventable	*	*	0,5	1,1	1,2
Malnutrition	3,9	10,3		*	*
Parasitic disease	3,9	10,0		*	*
Skin infections	2,2	2,3		*	*
Others	38,1	38,0	3,9	5,0	11,0

* Of a total of 17.562 consultations for children under one year and of 27.192 for children from one to four years.
** Of a total of 93.599 consultations for less than six months, 125.161 for children from six to 11 months and 280.395 for children from one to four years.

Sources: Peru. National Institute of Statistics and Informatics. Statistical compendium 1993-1994. Lima; 1994.
General Health Directorate. Statistics of care ambulatoria. Bul Statist In Health [Honduras]; 1988.

Figure 6

Proporcion of hospitalizations of children under five years os age from infectious dieashes and other causes targeted by the Integrated Management of Childhood Illness strategy. Ecuador; 1993.



Source: National Institute of Statistics and Census (INEC). Vital statistics. Ecuador; 1994.

In children from one to four years, diarrhea, and ARI also together represent more than half of hospitalizations. Although the percentage of children hospita-lized for these causes is slightly less than in children under one (a little greater than 25% for each), if the other diseases mentioned above are added, they together account for about 60% of the hospitalizations in the age group.

Both the information on consultations and that for hospitalizations show that diarrhea, ARI, malnutrition, and other infectious diseases are the principal reasons for consultation to the health services and the leading cause of hospitalization of children under five in the developing countries.

Quality of care

As a result of the predominance of this group of diseases in determining the reason for consultation to the health services and hospitalizations, a great proportion of the time and work of health personnel, as well as most of the inputs, and resources for care are destined to their diagnosis and treatment. Judicious

use of these resources is thus a central focus for analysis, taking into account the need to respond effectively to avoid the worsening of cases and achieve recovery without excessive or improper use of diagnosis and treatment resources.

The analysis of quality of care in the health services of developing countries, however, is a subject that only in recent years has come to garner serious attention. For this reason, historical information on this subject has been limited.

Some studies conducted in developing countries on the use of and need for radiographic examinations showed excess in the recommendation and use of these examinations in children who consult for respiratory problems. In the city of Cañada de Gómez, province of Santa Fe, Argentina, 55% of the children who consulted the city Hospital for cough or difficult breathing were found to be administered a chest x-ray. The majority of these were unnecessary, taking into account that an appropriate therapeutic choices could be made based on clinical assessment following chest x-ray criteria charts in Standard Case Management (SCM) of ARI.[16] A similar situation, although with lower percentages, were observed in Pelotas, State of Rio Grande do Sul, Brazil.[17]

The risks of the unnecessary exposure to x-rays for diagnosis of ARI in the children are among the reasons why the SCM/ARI strategy was prepared by PAHO and WHO during the 1980s. The excessive and improper use of antibiotics for the management of cases of ARI that do not require them is another one of the problems that propelled this strategy, due to the risk of propagating bacterial resistance.

A large number of studies reveal the considerable proportion of cases of ARI treated with antibiotics among consultations to the health services. The prescription of antibiotics for cases of ARI in the health services of Talcahuano, in Chile, was almost 60%, and could be reduced to almost half (33%), based on the application of the SCM/ARI strategy.[18] The unnecessary administration of antibiotics for cases of ARI in children was also found in Havana, Cuba, where the use of these drugs went from 27% down to 8% of the cases after applying the strategy.[19] None of the reports found an association between this decline in the use of antibiotics with a greater frequency of complications or an increase in hospitalization or mortality from ARI.

Although information concerning the use of drugs for treatment of diarrhea is not available, antibiotics, antidiarrheals, and other contraindicated drugs, especially for children are frequently utilized in case management, both by the health workers and by parents or family.

The unnecessary use of radiology, and drugs are partly a consequence of the problems the health services have in providing adequate quality of care, such as evaluation and classification diagnosis that can rule out the presence of signs of disease that require further tests such as radiology or antimicrobial treatment.

Control of diseases that affect child health

The importance of ARI, diarrhea, and malnutrition for morbidity and mortality in children under five has guided the preparation of strategies for prevention and control; and their implementation has surely contributed, to a greater or lesser degree according to the case, to the reduction in mortality observed in many of the developing countries of the world. However, both the application of these strategies and their process of implementation have faced various obstacles, generally associated with the lack of an integrated approach that permits a global view of the health condition, treatment of diseases and health problems, and the prevention and promotion for child health.

Application of strategies for the control of childhood diseases and health problems

Although the strategies for specific disease control of common child health problems has improved both the quality of care outcomes in terms of prevention, cure, and avoidance of deterioration and death, the focus continued be the reactive to the current health problem.

Care of the child in the health services

The application of these strategies improved the capacity of health workers, especially at the first level of care, of evaluation, classification, and treatment of diseases. However, it continued to focus care on the motive for consultation expressed by the parents upon arriving at the health service. Thus, the incorporation of other components into care, directed to detect problems and diseases other than the motive for consultation, as well as the application of measures of disease prevention and health promotion, remained up to the individual health worker to integrate into the process of care.

Studies conducted on missed opportunities for vaccinations showed that usually the occasion of a

child's presence at the health service was not used to evaluate his or her vaccination status or update it by applying the appropriate doses or missing vaccines. The expansion of the concept of "missed opportunities" to the detection of other diseases and health problems made clear that normally the presence of further health problems were not evaluated if the parents did not cite them as the reason for their child's consultation.

Given the frequent overlap of signs and symptoms of disease, especially in young children, this lack in diagnosis was sometimes associated with a greater risk of a worsening in the health condition which could have been avoided if the identification and treatment of the problem had been carried out early on.

The definition of a basic set of signs and symptoms of disease, with the greatest predictive value, to be systematically evaluated in the children who are brought to health services, was thus regarded, as an intervention that could help to diminish the missed opportunities for early detection and treatment of diseases and health problems in children.

Similarly, the systematic evaluation of preventive measures such as vaccination, as well as the incorporation of basic material of education and health promotion, was considered vital in order to improve the knowledge, attitudes, and practices in the community and to strengthen the role of parents and families for improved care of children in the home whether ill or not.

Care of the child in the home

The educational contents of each specific strategy also helped to improve the knowledge, attitudes, and practices of the community. However, even in this case, their targeting towards the control of specific problems did not contribute to develop an integrated approach for the treatment and care of the child in the home. Some basic aspects of a more holistic approach, such as the application of vaccines, promotion of breast-feeding or, more broadly, nutrition, were not sufficiently strengthened, but were, rather, seen as complementary within the framework of each specific disease targeted by an intervention.

The need to have a basic set of general recommendations for improved child care at home, and to give parents the ability to identify danger signs that require prompt consultation regardless of the disease was also considered of great importance to reduce the possibilities for either lack of care or late care leading to complications, and to improve care at home.

Implementing strategies for child health

The differentiated implementation of strategies for the control of specific child health problems led to the multiplication of efforts and activities required to make available to the population interventions aimed at the reduction in mortality and morbidity.

The duplication of efforts and resources took place on many levels. For example, the training of health workers for the review, analysis and implementation of the proposed strategies, had to be carried out for each strategy. At times, specific systems of input acquisition and supply chains were separately set up for each control component; and the supervision of health workers to support them in the effective application of the strategies, when this was carried out, was directed to individual components, multiplying the number of visits without promoting the integration of activities in health services.

In view of the fact that health services personnel are generally responsible for health care in children (and often also of adults) regardless of the reason for consultation, the integration of all the components of child health control into a single strategy was considered appropriate in order to unify the implementation, monitoring, and evaluation of relevant activities.

The IMCI strategy

The IMCI strategy was designed by PAHO, WHO and UNICEF on the basis of available interventions for child disease prevention and control, taking into account the implementation experience accumulated by the countries. The starting point in its formulation was to try to maximize the utilization of each contact between the child and health services for early detection, classification and treatment of diseases and problems that affect child health, as well as for the application of preventive measures and for health promotion.

To this end, the strategy includes an ordered sequence of steps to, in the first place, rule out the presence of signs of immediate danger to the child, in order to proceed with rapid care and treatment. Secondly, the strategy includes steps for the systematic evaluation of signs and symptoms of diseases and problems that most frequently affect child health. On this basis, the corresponding classification is established and the necessary treatments are administered. In the third place the strategy also includes the evaluation of the child's vaccination and nutritional status; and it determines corresponding measures for the child and to provide to parents the

advisory services and support relevant to child nutrition. Finally, the strategy includes educational contents for the parents pertaining to the management of problems in the home: the identification of warning signs to which prompt immediate consultation, and general information on care that will help to improve child's health condition.

Taking into account that countries health conditions differ, the IMCI strategy was designed for its content to be adapted to the epidemiological and operational realities of each country. Following this, the strategy can include those diseases and health problems most prevalent in each location, and is adapted to both the needs of the population and the type of care that health services cover.

The advantages of the IMCI approach for child health care services are summarized in Box 1.

Box 1

Advantages of the strategy of Integrated Management of Childhood Illness.

Targets care of the child as a whole and not in the cause of the consultation
Ensures the early detection of critically sick children
Ensures the integrated treatment of all the prevalent illnesses the child may present
Includes the application of preventive measures together with treatment of illnesses and health pro-blems detected
Includes actions to improve the actions of the parents with regard to care of the child in the home
Can adapt to the local epidemiological situation

IMCI strategy interventions: expanding care to the home and the community

Through its integrated approach that focuses on the child's health condition in general, the IMCI strategy permits the early detection and treatment of diseases and health problems, while simultaneously strengthening prevention and promotion actions. Both aspects are included within the IMCI strategy through its specific components. These include strengthening health worker capacity to better respond to the needs the infant client population, as well as the capabilities of parents, family, and community to be alert to problems and take care of the child at home.

Box 2 summarizes some of the interventions included in the IMCI strategy both for the health services and the communities, as well as for disease prevention and health promotion, for diseases and health problems that most frequently affect children under five.

Box 2

Advantages of the strategy of Integrated Management of Childhood Illness (IMCI)

	Measures responding to illness	Measures of prevention of health promotion
At the health services level	Early detection Adequate treatment	Vaccination
	Complementary treatments (iron, vitamin A, iodine, anthelmintic) Evaluation of the vaccination status	Recommendations on nutrition and breast-feeding
	Evaluation of the nutritional status	Supplementation with micronutrients
At the household and community levels	Adequate measures of care of the sick child	Compliance with vaccination schedules
	Monitoring of warning signs for the early consultation	Periodic health check-ups
	Adequate care seeking	Adequate practices of feeding and care in the home
	Adequate treatment compliance	Specific preventive measures (diarrhea, malaria, parasitic disease)

IMCI strategy in health services

The application of the IMCI strategy in health services includes actions in response to the disease, as well as preventive and health promotion measures.

Measures for disease response

Since the child's contact with health workers is, at least initially, defined by the parents, who decide on when to search for care outside the home, the IMCI strategy like any health service addresses this immediate concern. It complements the response to the immediate problem however with evaluation, identification and treatment of other diseases and problems that may have not been detected or caused concern to the parents, but may deteriorate and endanger the child's health condition.

By applying the IMCI strategy, health services personnel guarantee the early detection of the main diseases and problems that affect child health. The IMCI strategy includes a sequence of evaluation of the state of health of the child that includes the search for signs and symptoms that have greatest predictive value to suspect the presence of diseases or health problems. Thus, it guarantees, in the first place, that they are identified even when they may not have been the leading cause of consultation. Secondly, the utilization of criteria that have the best combination of sensitivity and specificity, based on the latest available scientific information, maximizes early detection of problems.
Similarly, the IMCI strategy includes recommendations for appropriate treatment on the basis of the latest available scientific information, improving the chances of treatment success, and covering not only the administration of specific drugs, but complementary care (feeding, hydration, etc.), surveillance of warning signs for immediate consultation, control of the evolution of the case, as well as evaluation and decision-making in the control consultation.

The sequence of the application of the IMCI strategy, based on the evaluation of the child's health condition, also allows for the detection and execution of complementary treatments for general child health problems - for example inadequate nutritional *status*, anemia, or parasitic diseases that are not usually the main reason for consultation. In this way, the IMCI strategy provides elements to extend care and for early detection and treatment of health pro-blems that not only have a detrimental effect on child's health, but also can create complications and other disease prognosis, such as pneumonia in children with malnutrition.

The systematic evaluation of vaccination *status* that is included in the application of the IMCI strategy, makes it possible to take advantage of all instances of the child's contact with health workers, to identify any incomplete series of vaccinations and administer them in a timely way. Similarly, the evaluation of nutritional status, systematically included in the IMCI strategy clinical steps, facilitates the detection of nutritional disorders and micronutrient problems, and delivers support for the family to improve the child's nutritional *status*.

Preventive and health promotion measures

The application of the IMCI strategy includes the vaccination of all the children who are identified as having an incomplete vaccination schedule, thereby contributing to ensure that there are no missed opportunities for preventing diseases avoidable through a vaccine.

It also includes systematic recommendations on feeding and breast-feeding for parents, in order to promote exclusive breast-feeding practices during the first four to six months of child's life and for complementary breast-feeding until two years of age. Through nutritional recommendations, the strategy also improves the quality and quantity of the food the child receives, as well as the manner in which the child is fed. Thus, the application of the IMCI strategy helps to prevent malnutrition and promotes the appropriate diet for child and family.

The IMCI strategy also incorporates dietary micronutrient supplementation, based on the local epidemiological situation, especially with regard to vitamin A deficiencies, to strengthen disease prevention and healthy development and reduce the severity of disease episodes.

The IMCI strategy in the home and the community

Applying the IMCI strategy carries benefits that extend beyond the health care services. Components are deployed to help parents, families and communities care for their sick or well child. Improved responses to child illness and health problems, and preventative measures are both involved.

Measures to respond to illness

In view of the fact that the signs of disease perceived by the parents and reported to the health workers as reason for the consultation are what concern them, the IMCI strategy offers the families to take appro-

priate measures for care of the sick child. The capacity of the parents to respond to the needs of the sick child is strengthened, a crucial component for the evolution of the episode and recovery of health.

The IMCI strategy also provides to child caregivers recommendations for monitoring of warning signs for rapid consultation, thereby avoiding delays in care seeking when the administered treatment does not produce the hoped for effect. In view of the fact that administering a treatment can occasionally give a false feeling of security and slow down the identification of signs of worsening, an increased ability in the parents to recognize early of warning signs diminishes the risk of a late consultation.

The IMCI strategy also orients the parents and other caregivers of the child in their search for appropriate care outside the home. The challenge is to integrate the customs and habits of the community that do not endanger the health of the child, but discourage those practices that can be detrimental to the evolution of some diseases.

Taking into account the frequent lack of treatment adherence on the part of families, the IMCI strategy emphasizes the communication of the need for adequate treatment compliance in order to guarantee favorable progress of the diseases or health problems that are detected in the child, both to the administration of drugs and complimentary measures for care of the child in the home are involved.

Actions for disease prevention and health promotion

The application of the IMCI strategy contributes to a greater degree of completion of vaccination schedules by parents and families, strengthening timely and complete application for disease prevention. This strengthening is achieved not only through the educational contents of the IMCI strategy, but through the systematic evaluation of the vaccination status of all the children that are seen by health workers trained in IMCI.

IMCI application increases the number and frequency of periodic health check-ups. In view of the fact that the IMCI strategy includes a strong component of preventive and health promotion actions, its application emphasizes to parents the importance of check-ups, for the early detection of problems as well as for the continuous monitoring of nutritional *status* and development of the child.

The education of the parents contained in the IMCI strategy, as well as its recommendations, help to achieve adequate practices of feeding and care in the home, that make it possible to improve the general health condition of the child and to prevent the occurrence of diseases or their severity.

The application of the IMCI strategy also provides parents with knowledge and better practices on specific preventive measures (diarrhea, malaria, parasitic diseases) that reduce the chance of childhood diseases and that prevent the occurrence of serious disease episodes. In this way it is possible to increase the parents and families capabilities in order to reduce the amount of time a child is sick and thereby contribute to better growth and development.

The basic contents described are intended to improve the knowledge, attitudes, and practices of the community with regard to care of the child in the home, as well as to improve early detection of risk factors and prompt care-seeking. This gives the population at large a more proactive role in care for child health. The transfer of knowledge that the IMCI strategy proposes through the systematic incorporation of a strong education and health promotion component moves us toward the goal of people progressively acquiring knowledge which allows healthier development.

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