

PEDIATRIC TRAINING IN MEDICAL SCHOOLS OF LATIN AMERICA

Dr. Teodoro F. Puga
Dr. Yehuda Benguigui
Editors



**Pan American
Health
Organization**



*Regional Office of the
World Health Organization*

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CHILD AND ADOLESCENT HEALTH
FAMILY AND COMMUNITY HEALTH
FCH/CA



Latin American Pediatrics Association

PAHO HQ Library Cataloguing-in-Publication

Puga, Teodoro F. - ed

Pediatric training in medical schools of Latin America, ALAPE-IMCI

Washington, D.C.: PAHO, © 2006.

(Serie OPS/FCH/CA/05.58.I)

ISBN 92 75 12400 0

I. Title II. Series

III. Benguigui, Yehuda - ed.

1. PEDIATRICS - education
2. EDUCATION, MEDICAL
3. SCHOOLS, MEDICAL
4. LATIN AMERICA

NLM WS 18

PAHO/FCH/CA/05.58.I

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Pan-American Health Organization
525 Twenty-third Street, N.W.
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Preface by the Latin American Pediatrics Association (ALAPE)

As we embark upon this 21st century, the health and well-being of the children of Latin America continue to be impaired by problems which must be addressed now. Given the current level of knowledge, the ready availability of resources, and the possibilities for training human resources, there can be no reason for delaying the solution of these problems any longer. Alarming high mortality indicators and failure to stop easily preventable diseases, coupled with, in many cases, lack of commitment on the part of organizers of both activities and human resources, make it imperative to find new ways of strengthening coordination and joint work among organizations that have a genuine interest in the health of children.

The pediatrics societies of the Latin American countries and of Italy, Portugal, and Spain have come together to form the Latin American Pediatrics Association (Asociación Latinoamericana de Pediatría – ALAPE). The Association's aim is to examine the problems affecting children, parting from the premise that, although the problems may vary owing to differences between geographic regions or levels of development, they should be addressed through an integrated approach, encompassing not only the child but also his/her family and environment as a subject of study from conception through adolescence. From that perspective, ALAPE shares the strategic approaches and objectives of the Pan American Health Organization (PAHO), which since its inception as the Pan American Sanitary Bureau in 1902 and its subsequent designation as the Regional Office of the World Health Organization in 1948, has been striving and working actively to improve the health of the children of the Americas.

ALAPE has been a constant presence at all the national conferences of pediatrics societies, many of which have been supported by PAHO, working with national society executives to offer pediatric events that afford an opportunity to analyze and devise solutions to the common health problems of childhood.

The close alignment of the purposes and objectives of ALAPE and PAHO was evidenced in 1991 with the publication of the first joint study undertaken by the two institutions: *Análisis de la situación actual de la enseñanza del crecimiento y desarrollo en América Latina, 1991* (Analysis of the Current Situation of Instruction in Growth and Development in Latin America, 1991).

This new study we which are now making available to readers concerned with issues relating to pediatrics and health in Latin America is also a reflection of the cooperative spirit of joint work between the two institutions. The report on the study of **Pediatric Training in Medical Schools of Latin America** presented here is intended to provide the most complete information possible on the teaching of pediatrics in Latin America, as well as to suggest some future directions.

Raising new concerns is the best tribute that ALAPE's 25 national member societies and their 100,000 member pediatricians can pay to PAHO as it celebrates 100 years of dedication to the health of children and their families in Latin America. To do so is to continue along the path laid out in November 1989 with the adoption of the Convention on the Rights of the Child—and to move towards its fulfillment.

The development of human resources in the medical profession takes place in schools of medicine, which educate and train over 300,000 students who will eventually become responsible for shaping and guiding community health programs. Mindful of the role that these future professionals will play in health development, and aware of the responsibility of pediatrics societies, and of ALAPE, in safeguarding the health of children and in training medical students in the region, some national societies have begun to consider forming committees or task forces on medical education—following the 25-year example of the Medical Education Committee (COEME) of the Pediatrics Society of Argentina—in order to offer guidance and organize conferences on topics related to the teaching of pediatrics in Latin America.

PAHO/WHO has been promoting the strategy of Integrated Management of Childhood Illness (IMCI), an approach oriented towards rational management of child health, with emphasis on prevention. A number of studies on the use of this strategy have documented its positive results, both regionally and worldwide. The pediatrics societies and pediatrics instructors that form part of ALAPE cannot and should not fail to offer their support in promoting the IMCI strategy. In this context, it is crucially important to continue strengthening the ties between PAHO and ALAPE in order to realize synergies that will certainly result in the enhancement of professional capacity to address the problems of child morbidity and mortality and foster the healthy growth and development of the children of our Region.

Dr. Teodoro F. Puga
Past President
Latin American Pediatrics Association
(Asociación Latinoamericana de Pediatría, ALAPE)

Preface by the Pan American Health Organization (PAHO)

Because we currently have the knowledge and technology needed to effectively prevent and treat numerous diseases, it becomes less and less acceptable that the same diseases continue making people sick and even killing them. Analysis of this situation reveals two main problems. One is that a large proportion of the population lacks access to measures for the prevention and treatment of illness and to information on practices that would help them avoid contracting diseases or would reduce their severity and accelerate their cure. The other problem is failure to use these measures effectively, which means that, even when they are available, many people are not benefiting from them.

In the case of infants and children, the continued existence of cases of disease and deaths from those diseases, when measures to prevent and treat them are easily available, is even more unacceptable.

Each year, close to half a million boys and girls in the Region of the Americas die before reaching their fifth birthday, and approximately one in four of these deaths is due to infectious diseases such as pneumonia or diarrhea or to nutritional disorders. The majority of these child deaths could be avoided if all boys and girls had access to basic prevention and treatment measures and if their parents made use of those measures and also applied simple care practices in the home that can help reduce the risk of contracting an illness.

In response to this situation, in 1996 the Pan American Health Organization/World Health Organization (PAHO/WHO) and the United Nations Children's Fund (UNICEF) designed the strategy of Integrated Management of Childhood Illness (IMCI). This strategy applies the available prevention and treatment measures in an ordered sequence of steps that makes it possible to take advantage of every contact with the child to detect the main diseases and health problems that may affect children. The strategy also includes a set of preventive measures to be used, together with health promotion measures, to improve parents' ability to provide care and treatment for their children in the home.

The IMCI strategy thus avoids missed opportunities for the early detection and treatment of diseases and health problems and for health promotion and disease and injury prevention. IMCI provides a means of utilizing each contact with a child to maximum advantage, and helps not only to prevent deaths and serious cases of illness, but also to promote healthy growth and development during the early years of life.

With a view to making the IMCI strategy available to all families, PAHO/WHO and all the countries in the Americas are putting forth a major effort to promote its use, both in health services and in communities and homes. Health personnel have a key role to play in this effort, as they provide care for thousands of children every day. The application of the IMCI strategy in their work can help to avoid missed opportunities for prevention, early treatment, and health promotion. An important part of the work of PAHO/WHO and its member countries has therefore been to conduct workshops and courses to inform health personnel about IMCI procedures and practices and to explore how to adapt and apply them at the various levels of the health care system.

Schools of medicine and scientific societies in the countries have been actively involved in this process, thereby enabling an ongoing exchange of experiences and knowledge that not only has

helped—and continues to help—enhance the strategy, but has also afforded the opportunity to consider how the strategy could be incorporated effectively into medical education. Especially important in this endeavor has been the participation of the Latin American Pediatrics Association (ALAPE), which has collaborated in various activities in pursuit of the common objective of improving the situation of infants and children in the countries of the Americas.

This survey on pediatrics instruction in schools of medicine in Latin America and the Caribbean is one of several activities undertaken jointly by the Regional IMCI Unit of PAHO/WHO and ALAPE during the year 2000. The survey provided a situation assessment of the teaching of pediatrics in medical education, which, in turn, made it possible to identify mechanisms for incorporating instruction in the IMCI strategy into undergraduate and graduate training in medical schools.

The incorporation of IMCI training into the curricula of medical schools is considered vitally important because these institutions play a key role in determining the kind of health care that will be provided to infants and children, both by health professionals and by parents and the community. In addition, the IMCI strategy will thus become a part of the care provided by university health facilities in both ambulatory and inpatient settings. Teaching the IMCI strategy during basic medical training will also ensure that students performing their year of social service or rural practice at the end of their program of studies will have the skills needed to provide access to the IMCI strategy for the populations they serve—populations which are generally among the most vulnerable groups.

At the same time, with the introduction of IMCI in schools of medicine, educators and researchers will be engaged in the process of continually improving knowledge of the diseases and problems that affect the health of infants and children and in adapting and designing measures for their control. They will thus, through their participation in epidemiological and operations research at the various levels of the health care system, be able to enhance both the frame of reference for the IMCI strategy and the results of its application.

This survey thus opens up a broad spectrum of options and initiatives, which PAHO/WHO and ALAPE will be designing and implementing with the aim of continuing the expansion of the IMCI strategy, in terms not only of progressively increasing its coverage, but also of broadening the range of childhood diseases and health problems that it targets.

This process will contribute to the achievement of the objectives of the initiative Healthy Children: Goal 2002, launched by PAHO/WHO with the aim of reducing deaths of children under 5 by 100,000 between 1999 and 2002, by extending access to IMCI to the entire population, in particular to the most vulnerable groups. The involvement of schools of medicine in this process, including the teaching of IMCI as part of medical education, will play an essential part in rapidly increasing the number of professionals with the knowledge needed to apply the strategy and thus improve the health of the children of Latin America and the Caribbean.

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Acknowledgements

Carrying out this study required the collaboration of a number of individuals and institutions in the countries of the region. The editors wish to express their appreciation, in particular, to the following professionals, who assisted in analyzing the data and in drafting this report:

- Dr. Marcos Cusminsky and Dr. María Angélica Flores, of the Latin American Pediatrics Association (ALAPE).
- Dr. Ana María Ferrari (Montevideo, Uruguay); Dr. Antonio José Alves da Cunha (Rio de Janeiro, Brazil); Dr. Giuseppe Sperotto (Campinas, Sao Paulo, Brazil); Dr. Luis Jaime Gaete (Temuco, Chile); Dr. Eduardo Zárraga (Cochabamba, Bolivia); Dr. Juan Carlos Bossio (Santa Fe, Argentina); Dr. René Salgado, and Mr. Walter González (Washington DC, Unites States) consultants to the Pan American Health Organization (PAHO).
- Dr. Sergio Arias, of the Emilio Coni National Institute of Respiratory Diseases (INER) in Santa Fe, Argentina, who also coordinated both the collection and processing of data and the analysis of the information from the survey.

We also wish to thank the following institutions and their personnel, who played an active role in conducting the study:

ARGENTINE PEDIATRICS SOCIETY

Dr. Marcos Cusminsky
Special Professor of Pediatrics
Universidad Nacional de la Plata.

Dr. Juan José Reboiras
Professor of Pediatrics
Universidad de Buenos Aires.

BOLIVIAN PEDIATRICS SOCIETY

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BRAZILIAN PEDIATRICS SOCIETY

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COLOMBIAN PEDIATRICS SOCIETY

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COSTA RICAN PEDIATRICS SOCIETY

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Universidad de Ciencias Médicas Dr. Andrés Vesalio Guzmán.

CUBAN PEDIATRICS SOCIETY

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CHILEAN PEDIATRICS SOCIETY

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DOMINICAN PEDIATRICS SOCIETY

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Dr. José Domínguez Garabito

Chief, Ambulatory Medicine

Hospital Robert Reid Cabral.

ECUADORIAN PEDIATRICS CONFEDERATION

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PERUVIAN PEDIATRICS SOCIETY
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URUGUAYAN PEDIATRICS SOCIETY
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VENEZUELAN SOCIETY OF PEDIATRICS AND CHILD HEALTH CARE

Dr. Humberto José Gutiérrez Rodríguez
 Chief, Department of Pediatrics
 Central University of Venezuela.

Thanks are also due to the following consultants based at PAHO/WHO country offices, who provided support for the data collection phase of the study during the period 1999–2000:

Argentina: Ms. Rosa María Borrell.
 Bolivia: Dr. Martha Mejía.
 Brazil: Dr. Javier Espíndola.
 Colombia: Dr. Celsa Sampson and Dr. José Félix Jaulín.
 Costa Rica: Dr. Ariel Depetris.
 Cuba: Ms. Josefina Ferrer.
 Dominican Republic: Dr. Oscar Suriel.
 Ecuador: Dr. Hugo Noboa.
 El Salvador: Dr. Mauricio Romero.
 Guatemala: Dr. Patricia Ruiz.
 Honduras: Dr. Luis Gerardo Castellanos.
 Mexico: Dr. Elenice Ferraz.
 Nicaragua: Dr. Lesbia Altamirano.
 Panama: Dr. Federico Hernández.
 Paraguay: Dr. Marcia Moreira and Dr. Zonia Rosas Huacho.
 Peru: Dr. Miguel Dávila Dávila.
 Uruguay: Dr. Nilton Arnt.
 Venezuela: Mrs. Soledad Pérez Évora.

Finally, we wish to express our gratitude to the following professors for their collaboration: Dr. Fernando Chavarría Valdivieso (Ecuador), Dr. Miguel Roberto Majano (El Salvador), Dr. Carlos Vargas Reyes (Guatemala), and Dr. José Gamboa Marruffo (Mexico).

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Acronyms and Abbreviations

ALAPE	Asociación Latinoamericana de Pediatría (Latin American Pediatrics Association).
ASCOFAME	Asociación Colombiana de Escuelas de Medicina (Colombian Association of Schools of Medicine).
CA	Child and Adolescent Health.
CSM	Colleges and schools of medicine.
EPI	Expanded Program on Immunizations.
FCH	Family and Community Health.
FEPAFEM	Federación Panamericana de Facultades y Escuelas de Medicina (Pan American Federation of Colleges and Schools of Medicine).
IMCI	Integrated Management of Childhood Illness.
INER	Instituto Nacional de Enfermedades Respiratorias "Emilio Coni" (Emilio Coni National Institute of Respiratory Diseases, Argentina).
ARI	Acute respiratory infections.
ORS	Oral rehydration salts.
PAHO	Pan American Health Organization.
PALTEX	Expanded Textbook and Instructional Materials Program [PAHO].
PHC	Primary health care.
CSM	Standard case management.
TACRO	The Americas and Caribbean Regional Office [UNICEF].
WHA	World Health Assembly.
WHO	World Health Organization.
WONCA	World Organization of Family Doctors.

Executive Summary

As the effort to reduce child mortality takes on growing importance each day, it also become increasingly important to make available to the population tools that are better suited to the task (such as the IMCI strategy). Aware of the central role played in this process by institutions that train health personnel, especially colleges and schools of medicine, PAHO/WHO and ALAPE joined forces to undertake a study of the teaching of key aspects of pediatrics in undergraduate medical education.

A survey was developed and sent to colleges and schools of medicine (CSMs) in the countries of Latin America, and the information obtained was subsequently processed. A total of 253 responses were obtained from 194 CSMs. Processing of the results yielded a portrait of the colleges and schools of medicine in the Region and an analysis of the content of their curricula in certain areas of child health, the teaching methods and the modalities of practical training employed, the bibliographical materials utilized, and the means by which students are assessed.

The results reveal diversity among CSMs in terms of organization and structure, but less variation in what they teach. All the CSMs surveyed offer instruction in prevalent childhood illnesses and in prevention and health promotion topics relating to health care for children. This instruction takes place primarily in departments of pediatrics.

With regard to teaching methods and whether or not CSMs have incorporated current trends in medical education methodology, further research is needed.

The CSMs surveyed do include practical activities as part of pediatrics teaching, but in general the focus is on clinical and hospital activities, not on practice at the primary care level or on activities relating to disease prevention and health promotion and education. However, there is a growing trend to increase the amount of practical training experience that students receive in ambulatory and community settings and to begin such training during the first years of medical education and include it as part of the basis for student assessment.

The discussion of the survey results concludes with some thoughts on the importance, for both CSMs and health services, of beginning the process of incorporating instruction in the IMCI strategy in undergraduate medical training. It is considered that the necessary conditions for doing so already exist, but that there is a need to initiate or accelerate, depending on the circumstances, the actions and timetables for moving the process forward. This should be a priority item for discussion on the agendas of institutions, governments, and agencies.

Introduction

The growing demand from communities for better living conditions, the changing epidemiological profile of the diseases that affect them, the recognition of risk factors and new diseases, both physiological and psychosocial, and the development of increasingly sophisticated, high-cost technologies—these are some of the problems confronting health care personnel today.

In recent decades, the international community has shown growing interest in the health situation of children in general and of those in the developing world in particular.

As we move into this new millennium, mortality among children under 5 years of age in the Americas – estimated at 500,000 children per year at the end of the 20th century –remains unacceptably high. The differences in mortality between countries and between regions within the same country are evidence of inequalities, most of which are linked to economic and social problems.

Many deaths of under-5 children are due to diseases that could be avoided, as effective measures exist for their prevention, early detection, and successful treatment.

It is these same diseases that create the bulk of the demand on health care facilities, which every day see thousands of children suffering from acute respiratory infections, diarrheal diseases, malnutrition, meningitis, measles, sepsis, or malaria. These disease account for 50% to 70% of health care visits and 30% to 60% of hospital admissions.

The vaccines included in the Expanded Program on Immunization (EPI), oral rehydration salts (ORS) and oral rehydration therapy (ORT), together with the rules for standard case management (SCM) of diarrheal diseases and acute respiratory infections (ARI), have been and continue to be excellent examples of tools which, when made available to the majority of the population, have a decisive impact in reducing both morbidity and mortality among children under 5 in developing countries.

However, in practice, when children and their families have come to health services, the care provided has generally focused on the specific reason for the visit, and opportunities for carrying out other prevention and health promotion activities, such as those mentioned above, have been missed.

The strategy of Integrated Management of Childhood Illnesses (IMCI) provides an approach that integrates a whole set of child health care activities. It serves as a guide for health personnel in systematically evaluating the warning signs for the principal diseases and health problems that affect children, and it incorporates the basic preventive and educational interventions that should be a component of every pediatric visit.

In order to implement the IMCI strategy, however, health personnel must be trained in its use. University colleges and schools of medicine have done a good job of providing a theoretical grounding in the diseases targeted by the strategy. Medical students study their epidemiology, etiopathogenesis, physiopathology, diagnosis, and treatment, but there is less emphasis on topics related to prevention and probably less still on those related to health promotion. In many cases, knowledge of disease prevention and health promotion is acquired in a fragmented way, in different courses and at different times during medical education.

Typically, medical students begin to apply their knowledge in the practice of health care

for children under 5 during the final stages of their training, and they do so mainly in hospital settings. They gain very little practical experience in the field and have little contact with communities.

The massive influx of students to some schools of medicine in Latin America, coupled with the maintenance of curricula and teaching methodologies that are not aligned with new concepts of medical education and health, could mean that many medical school graduates will not be equipped to meet the real needs of the populations they will be serving.

It is therefore essential to engage pediatrics departments at the medical colleges and schools in the countries of the Americas in the process of implementing the IMCI strategy.

In the space of very few years, the teaching of pediatrics has taken on a complexity that calls for a rethinking not only of the subject matter to be taught and the skills and abilities to be learned, but also of the very health care philosophy that future doctors will need to adopt. As a result, many educational institutions in Latin America are currently revising their curricula.

Among the various fields of clinical medicine, pediatrics holds a special place, because the focus of attention—children and adolescents—is constantly evolving, and these changes occur in environments that are also variable.

In addition, during the early stages of a child's growth and development, the doctor-patient relationship is profoundly influenced by the mother, whose inseparable bond with the child is expressed not only by means of language but through multiple other forms of communication.

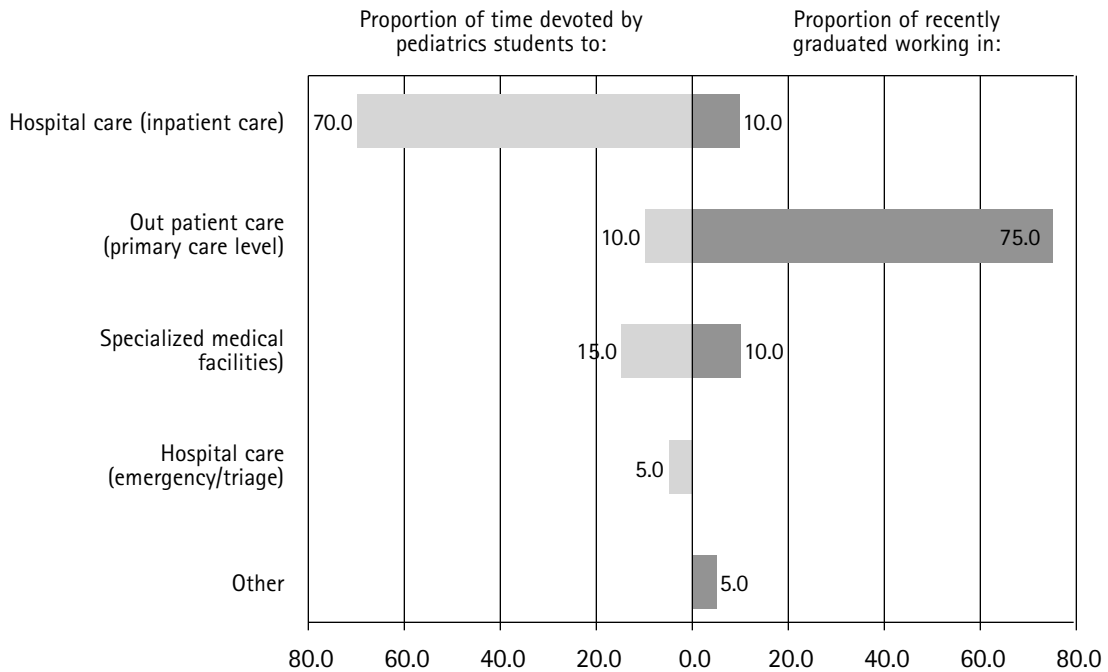
A child's environment in the earliest years of life consists of his/her mother and immediate family. Hence, knowledge of the economic, social, and psychological factors that characterize the child's home life is needed. This environment later expands to encompass the community to which the child belongs, with its aspirations and problems, and the schools the child attends, which transmit not only knowledge but also forms of behavior and patterns of conduct.

The diseases that are prevalent among children and adolescents differ at various stages of the growth and development process, with the highest degree of vulnerability to illness occurring among the youngest children: those under 5 and, especially, those under 1 year of age.

In 1988, PAHO and ALAPE carried out a joint study on instruction in the topic of growth and development in schools of medicine and nursing in 11 countries of Latin America, and in 1994-1995, the Regional IMCI Unit of PAHO, in collaboration with ALAPE, conducted a pilot study on pediatrics instruction at the undergraduate level in 52 schools of medicine in 10 countries of the Region.

The latter study revealed a disconnect between the activities students performed as part of their clinical training in pediatrics and the activities that they most frequently carried out after graduation (Figure 1). During pediatrics courses, the largest proportion of clinical training time was spent on care in hospitals, where the children treated by students were suffering from serious and uncommon illnesses. A minimal percentage of time during their

FIGURE 1
 PROPORTION OF TIME DEVOTED TO VARIOUS ACTIVITIES DURING THE STUDY OF PEDIATRICS IN SCHOOLS OF MEDICINE IN LATIN AMERICA, COMPARED TO TYPES OF WORK PERFORMED BY MEDICAL SCHOOL GRADUATES



study of pediatrics was devoted to ambulatory care in primary care facilities, which is where the pathologies that most frequently affect children are seen and where prevention and health promotion interventions are carried out. However, the majority of medical school graduates end up working in such facilities, where conditions are vastly different from those that existed in the hospitals where they received their clinical training and where access to specialized diagnostic technologies and therapies is limited or nonexistent.

In light of the need to update the information derived from these earlier studies and to obtain more representative data, ALAPE and PAHO agreed to undertake a new study of departments of pediatrics in public and private medical schools throughout the Region.

Study Objectives

GENERAL OBJECTIVE

To examine the situation of pediatrics instruction in colleges and schools of medicine (CSMs) in Latin America with a view to suggesting possible improvements.

SPECIFIC OBJECTIVES

Specifically, the study will seek to:

- a. identify various structural characteristics of the colleges and schools of medicine
- b. determine whether medical education includes the child health care content that forms part of the IMCI strategy and ascertain in which courses that content is taught during undergraduate medical training
- c. identify various features of the teaching methodology used in the teaching of pediatrics
- d. determine whether instruction in pediatrics includes practice in carrying for children and identify various characteristics of that practical training
- e. ascertain what textbooks and other bibliographic materials are used in the teaching of pediatrics
- f. determine how students are assessed in pediatrics

Methodology

Type of study

A survey was conducted among pediatrics departments at colleges and schools of medicine in countries of Latin America.

Study population

The population of interest for the survey comprised all teaching units that have responsibility for providing training in pediatrics at the undergraduate level.

The target population consisted of pediatrics teaching units in the colleges and schools of medicine included in the database of the Pan American Federation of Colleges and Schools of Medicine (FEPAFEM).

Variables

The variables studied related to the following:

1. description, characteristics, and identifying data of the colleges and schools of medicine
2. content of the instruction provided on various aspects of pediatric health care
3. the teaching methodology employed
4. modalities of clinical training
5. teaching materials used
6. means of assessment used

The variables correspond to the questions on the survey (Annex 1).

Data collection instruments

A survey consisting of 13 open, semi-open, and closed questions was developed (Annex 1). With the assistance of six professors of pediatrics from different countries, the instrument was tested to verify that the terminology was clear and that the questionnaire was easy to complete. The survey was then translated to French and Portuguese for application in non-Spanish-speaking countries. Instructions for completing the questionnaire were also prepared (Annex 2).

Data collection

The period of data collection extended from January 1999 to July 2000. Surveys were sent to colleges and schools of medicine through specially designated national focal points within national pediatrics societies, who were responsible for contacting the teaching units to be surveyed, sending out the surveys, carrying out follow-up, and collecting and sending the surveys to ALAPE. In some cases, surveys were sent out directly from ALAPE headquarters to colleges and schools of medicine, and in others they were sent by the PAHO country focal points for IMCI or by the Regional IMCI Unit in Washington.

Data processing and analysis

The surveys were processed at the Emilio Coni National Institute of Respiratory Diseases in Santa Fe, Argentina. The data were cleaned and analyzed for consistency; individual forms were examined when necessary. The data were then processed using Epi Info, version 6.04. Microsoft Excel 2000 was used to create the tables and figures.

Frequency tables and measures of central tendency and dispersion, where applicable, were calculated using the same processing software.

For the achievement of the first specific objective (characterization of the CSMs), the information was processed and consolidated by school or college of medicine. The general unit of analysis for the remaining specific objectives was the "pediatrics teaching unit" (pediatrics school, department, clinic, service, etc.).

Results

General information

Information from 253 surveys, received from 194 CSMs in 19 countries of Latin America, was analyzed (Table 1). Eighty-seven of the 253 surveys were answered by pediatrics schools/departments or teaching units, and 86% of the respondents identified themselves as instructors.

TABLE 1
COLLEGES OR SCHOOLS OF MEDICINE (CSMs) AND SURVEYS BY COUNTRY
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

COUNTRY	CSMs	TIPO			SURVEYS
		PUBLIC	PRIVATE	NO INFO.	
ARGENTINA (ARG)	10	6	4	0	40
BOLIVIA (BOL)	8	3	5	0	8
BRAZIL (BRA)	56	37	18	1	58
CHILE (CHI)	10	4	6	0	14
COLOMBIA (COL)	15	9	5	1	15
COSTA RICA (COR)	3	1	2	0	3
CUBA (CUB)	21	21	0	0	21
DOMINICAN REP (DOM)	7	2	5	0	10
ECUADOR (ECU)	1	1	0	0	1
EL SALVADOR (ELS)	5	1	4	0	5
GUATEMALA (GUT)	2	1	1	0	3
HAITI (HAI)	3	1	2	0	3
MEXICO (MEX)	31	19	8	4	40
NICARAGUA (NIC)	2	1	1	0	3
PANAMA (PAN)	2	1	1	0	3
PARAGUAY (PAR)	2	2	0	0	3
PERU (PER)	12	8	4	0	13
URUGUAY (URU)	1	1	0	0	3
VENEZUELA (VEN)	3	3	0	0	7
TOTAL	194	122	66	6	253

The surveys received represent about 50% of the total number of colleges and schools of medicine affiliated with FEPAFEM.

The largest number of responses came from Brazil, Mexico, Argentina, and Cuba. The cases of Argentina and Cuba are worthy of special mention for the following reasons: In Argentina, the University of Buenos Aires distributes pediatrics students among 36 teaching units, of which 28 answered the survey. This explains why 40 surveys were received from Argentina, when only 10 universities participated in the study. In the case of Cuba, only one survey was completed, but it was explained that the data applied to all the CSMs in the country.

Hence, the number of surveys does not match the number of CSMs, since some schools submitted more than one survey.

TABLE 2
DURATION OF MEDICAL EDUCATION
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

DURATION IN YEARS	No. OF SCHOOLS	%
FOUR	3	1.5
FIVE	8	4.1
SIX	141	72.7
SEVEN	35	18.0
EIGHT	5	2.6
NO INFORMATION	2	1.0
TOTAL	194	100.00

At the majority of colleges and schools of medicine (72.7%), the course of study lasts 6 years, with the duration ranging from 4 to 8 years (Table 2).

The CSMs at the lower end of the range (4 years) are at the following universities: Universidad del Nordeste (MEX), Universidad Iberoamericana (DOM), and Universidad Tecnológica de Santiago (DOM). Those with the longest medical education programs (8 years) are: Universidad de la República (URU), Universidad Cayetano Heredia (PER), Universidad Santa Ana (ELS), and Universidad Nacional (ELS).

TABLE 3
DURATION OF STUDY IN PEDIATRICS⁽¹⁾
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

DURATION IN WEEKS ⁽²⁾	SURVEYS	
	No.	%
5 - 11	54	33.5
21 - 30	35	21.7
31 - 40	26	16.1
TOTAL	161	100.0

(1) Surveys that indicated a duration of fewer than 5 weeks (or 100 hours) or more than 40 weeks (or 800 hours) were excluded. A total of 31 surveys with information outside the ranges specified were excluded, as were 61 surveys for which no information on duration of pediatrics study was given.

(2) Responses given in hours were converted to weeks at a rate of 20 hours per week.

The duration of study in pediatrics ranges widely (Table 3), with a median duration of 20 weeks.

The analysis excluded surveys that indicated a duration of fewer than 5 weeks or more than 40 weeks.

TABLE 4
COLLEGES AND SCHOOLS OF MEDICINE BY NUMBER OF GRADUATES PER YEAR
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

GRADUATES	No. CSMs	Total No Graduates	Total % ⁽¹⁾
50 or fewer	47	1698	8.6
51-150	89	8325	42.4
151-500	20	4805	24.5
More than 500 ⁽²⁾	4	4821	24.5
TOTAL	160	19649	100.0

N = 194. The analysis excluded 34 CSMs for which no information on graduates was provided.

(1) Percentage of the subtotal of schools with information on graduates

(2) All the universities of Cuba were counted as a single university

Fifty percent (50%) of the graduates were concentrated in the 24 CSMs that reported more than 150 graduates per year (Table 4).

TABLE 5
SUBJECT AREAS IN WHICH CONTENT AND SKILLS RELATING TO
HEALTH PROBLEMS OF UNDER-5 CHILDREN ARE TAUGHT
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

	Pediatrics		Clinical Medicine		Infectology		Prev. & Commun		No Information		TOTAL
	No.	% ⁽¹⁾	No.	% ⁽¹⁾	No.	% ⁽¹⁾	No.	% ⁽¹⁾	No.	% ⁽¹⁾	
SEPSIS	171	81.0	48	22.7	122	57.8	6	2.8	42	16.6	253
MENINGITIS	172	79.6	31	14.4	124	57.4	8	3.7	37	14.6	253
ACUTE RESP. INF.	170	79.8	30	14.1	66	31.0	28	13.1	40	15.8	253
DIARRHEAL DISEASE	173	82.0	26	12.3	57	27.0	27	12.8	42	16.6	253
DEHYDRATION	173	85.2	22	10.8	14	6.9	21	10.3	50	19.8	253
MALARIA	100	49.5	28	13.9	139	68.8	28	13.9	51	20.2	253
MEASLES	168	78.1	16	7.4	119	55.3	32	14.9	38	15.0	253
MALNUTRITION	174	87.9	23	11.6	6	3.0	25	12.6	55	21.7	253
ANEMIA	167	78.4	47	22.1	5	2.3	10	4.7	40	15.8	253
NONSPECIFIC FEBRILE SYNDROME	166	80.6	46	22.3	69	33.5	8	3.9	47	18.6	253

(1) Percentage of total number of responses (total number of surveys minus surveys which provided no information on this question)

(2) Percentage of total number of surveys (n=253)

Note: The subject areas shown are those that were mentioned most frequently by survey respondents.

All the colleges and schools of medicine surveyed teach content relating to child health and the diseases targeted by the IMCI strategy. Close to 80% of the surveys indicated that instruction on those diseases, with the exception of malaria, occurs in pediatrics courses. Most teaching on sepsis, meningitis, diarrheal diseases, malaria, measles, and nonspecific febrile syndrome, on the other hand, occurs in the area of infectology (Table 5).

TABLE 6
COURSES IN WHICH CONTENT AND SKILLS RELATING TO
DISEASE PREVENTION AND HEALTH PROMOTION AMONG UNDER-5 CHILDREN ARE TAUGHT
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

	Pediatrics		Prev. & Commun		Other		No. Info.		TOTAL
	No.	% ⁽¹⁾	No.	% ⁽¹⁾	No.	% ⁽¹⁾	No.	% ⁽¹⁾	
BREASTFEEDING	203	94.4	38	17.7	83	38.6	38	15.0	253
NUTRITIONAL ASSESSMENT	199	94.3	30	14.2	77	36.5	42	16.6	253
GROWTH ASSESSMENT	204	95.3	27	12.6	54	25.2	39	15.4	253
DEVELOPMENT ASSESSMENT	207	96.7	22	10.3	51	23.8	39	15.4	253
IMMUNIZATION	196	91.2	65	30.2	86	40.0	38	15.0	253

Prev. & Commun: Includes preventive medicine, environmental sanitation, epidemiology, community medicine, basic health care activities, public health, primary health care, health and society, social medicine, and family medicine.

(1) Percentage of total number of responses (total number of surveys minus surveys which provided no information on this question)

(2) Percentage of total number of surveys

Processing of the surveys revealed that more than 90% of the health promotion and disease prevention topics included in the IMCI strategy are taught in pediatrics courses (Table 6).

TABLE 7
TEACHING METHODS USED IN THEORETICAL INSTRUCTION IN PEDIATRICS
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

TEACHING METHOD	No.	% ⁽¹⁾
PATIENT PRESENTATIONS	220	87.0
LECTURE CLASSES	213	84.0
DISCUSSION GROUPS	211	83.4
SEMINARS	181	71.5
ANALYSIS OF SCIENTIFIC STUDIES	138	54.5
OTHER	99	39.1

(1) Percentage of total number of surveys (253)
 n= 253 surveys

Respondents indicated that they had used most of the methods mentioned in the survey as theoretical teaching techniques, the most common ones being patient presentations, lecture classes, discussion groups, and analysis of scientific studies (Table 7).

TABLE 8
TEACHING MATERIALS USED IN PEDIATRICS INSTRUCTION
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

TEACHING METHOD	No.	% ⁽¹⁾
SLIDES	233	92.1
VIDEOS	192	75.9
MANNEQUINS	80	31.6
GAMES	47	18.6
PHOTO COLLECTIONS	33	13.0
OTHER	139	54.9

(1) Percentage of total number of surveys (253)
n= 253 surveys

The teaching materials mentioned most frequently were slides, videos, and, to a lesser extent, mannequins and games (Table 8).

TABLE 9
MODALITIES OF CLINICAL TRAINING IN PEDIATRICS
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

CLINICAL TRAINING MODALITY	No.	% (1)
<i>SURVEYS WITH INFORMATION</i>	230	100.0
GROUP TRAINING	102	44.3
INDIVIDUAL TRAINING	66	28.7
GROUP AND INDIVIDUAL	62	27.0
<i>SURVEYS WITHOUT INFORMATION</i>	23	—
TOTAL	253	—

(1) Percentage of total number of surveys containing information on this question

All the respondents reported that students in pediatrics engage in some sort of clinical training that involves caring for children. The various modalities of clinical training are shown in Table 9.

Fifty-four percent of respondents mentioned the use of guidelines or checklists for supervision of students' clinical training.

TABLE 10
STUDENT-INSTRUCTOR RATIO IN GROUP WORK
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

STUDENT-TEACHER RATIO	No. SURVEYS	% ⁽¹⁾
<i>SURVEYS WITH INFORMATION</i>	209	100.0
STUDENTS NOT DIVIDED IN GROUPS	6	2.9
<5 STUDENTS/INSTRUCTOR	67	32.1
5-9 STUDENTS/INSTRUCTOR	106	50.7
10 OR MORE STUDENTS/INSTRUCTOR	30	14.4
<i>SURVEYS WITHOUT INFORMATION</i>	44	—
TOTAL	253	—

(1) Percentage of subtotal containing information on this question

More than 90% of respondents reported that students are divided into groups or teams for their clinical training. A total of 209 surveys contained information on the student-instructor ratio in the groups. The median number was 5 students per instructor, with a range of 1 to 25. It is worth noting that 14.4% of the respondents indicated a student-instructor ratio of 10 or more (Table 10).

TABLE 11
ACTIVITIES PERFORMED BY PEDIATRICS STUDENTS IN TREATING ILLNESS
DURING CLINICAL TRAINING IN PATIENT CARE
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

ACTIVITIES	TOTAL	
	No	% ⁽¹⁾
<i>TREATMENT OF ILLNESS</i>		
PATIENT INTERVIEW AND BASIC MEDICAL HISTORY	224	88.5
CLINICAL EXAMINATION	226	89.3
INITIAL DIAGNOSIS	220	87.0
FORMULATION OF TREATMENT PLAN	212	83.8
INSTRUCTION ON TREATMENT	189	74.7
INFORMATION ON THE EVOLUTION OF THE ILLNESS	167	66.0
INFORMATION ON COMPLICATIONS OF THE ILLNESS	157	62.1
INFORMATION TO PARENTS ON FOLLOW-UP CARE	159	62.8

(1) Percentage of total number of surveys
n = 253

The most frequently mentioned activities performed by students during their clinical training in treating illness were patient interviews, clinical examination, initial diagnosis,

and formulation of treatment plans (all mentioned by more than 80% of respondents) and, to a lesser extent, other treatment activities, including providing recommendations to mothers or other caregivers (Table 11).

TABLE 12
ACTIVITIES PERFORMED BY PEDIATRICS STUDENTS IN EDUCATION ON PREVENTION AND HEALTH PROMOTION DURING CLINICAL TRAINING
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

ACTIVITIES	TOTAL	
	No	% ⁽¹⁾
EDUCATION ON PREVENTION AND HEALTH PROMOTION		
CHILD FEEDING	212	83.8
IMMUNIZATION	213	84.2
GROWTH MONITORING	199	78.7
EARLY CHILDHOOD STIMULATION	174	68.8

(2) Percentage of total number of surveys
n = 253

With regard to education of mothers and other caregivers on various aspects of disease prevention and health promotion, the most frequently mentioned activities were education on feeding, vaccines, and growth monitoring; early childhood stimulation was mentioned by fewer respondents (Table 12).

Although the responses provided an overview of students' activities in caring for children during clinical training, it is not possible to determine from this survey whether all or any of the activities were performed in all cases.

TABLE 13
SETTING IN WHICH PEDIATRICS STUDENTS CARRY OUT THEIR CLINICAL TRAINING
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

CLINICAL TRAINING SETTING	No.	% ⁽¹⁾
HOSPITAL	244	96.4
EMERGENCY/CASUALTY	197	77.9
HEALTH CENTER	147	58.1
HEALTH POST	32	12.6

(3) Percentage of total number of surveys
n = 253

Hospitals were the most frequently mentioned settings for clinical training (Table 13). Within hospitals, inpatient wards were mentioned as the site of clinical training in more than 95% of cases.

TABLE 14
SETTING FOR CLINICAL TRAINING BY TYPE OF TRAINING
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

TYPE OF TRAINING	TOTAL	CLINICAL TRAINING SETTING					
		NO INFORMATION		HOSPITAL		PHC FACILITY	
		No.	% ⁽¹⁾	No.	% ⁽²⁾	No.	% ⁽²⁾
CLERKSHIP/CLINICAL ATTACHMENT	198	27	15.8	138	80.7	33	19.3
OTHER	17	0	0.0	6	35.3	11	64.7
TOTAL	215	27	14.4	144	76.6	44	23.4

(1) Percentage of the "Total" column

(2) Percentage of the total number of surveys containing information on this question ("Total" column minus "No Information" column)

n = 253

The majority (93%) of the CSMs surveyed reported that students receive clinical training in caring for children under 5 prior to graduation while they are completing the program of study in pediatrics. According to the information provided by survey respondents, clerkships/clinical attachments are the most frequent form of undergraduate clinical training: 92% versus 8% for other forms of clinical training (Table 14).

Hospitals are the most frequent setting for clinical training (76.6%). Less often, clinical training occurs in primary health care (PHC) facilities or in a combination of hospital and primary health care settings (23.4%).

TABLE 15
BIBLIOGRAPHIC MATERIALS MOST OFTEN RECOMMENDED BY INSTRUCTORS FOR USE BY
STUDENTS IN PEDIATRICS SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

BIBLIOGRAPHIC MATERIALS	No.	% ⁽¹⁾
NELSON	175	69.2
MENEGHELLO	81	32.0
MARCONDES	38	15.0
MORANO	22	8.7
PEDIATRIC JOURNALS	39	15.4

(3) Percentage of total number of surveys

n = 253

The Nelson Textbook of Pediatrics is the book most commonly cited by professors when asked to identify recommended bibliographic materials (Table 15). It was mentioned by more than two thirds of respondents, including those in Brazil (the Nelson textbook is available in Spanish and Portuguese). Meneghello was the second most frequently cited textbook, mentioned by one third of respondents. However, if the surveys from Brazil are excluded (since Meneghello has not been translated to Portuguese), the proportion rises to 40%. The Marcondes textbook is a special case, as it is available only in Portuguese. Although it was mentioned by only 15% of respondents overall, if only the surveys from Brazil are considered, the proportion is 70%. The situation is similar with the Morano text, which is available only in Argentina. It was cited by only 9% of respondents overall, but it was mentioned by half of those in Argentina.

It is worthy of note that only 15% of respondents indicated that some pediatric journal is used as a bibliographic reference.

TABLE 16
ASSESSMENT OF STUDENTS IN PEDIATRICS BY TYPE OF EXAMINATION
SURVEY ON TEACHING OF PEDIATRICS. PAHO/ALAPE, 2000

TYPE OF EXAMINATION	No.	%
<i>PARTIAL EXAMINATIONS⁽¹⁾</i>	229	—
ORAL THEORETICAL EXAMS	103	45.0
ORAL PRACTICAL EXAMS WITH PATIENTS	147	64.2
WRITTEN EXAMS	223	97.4
WRITTEN WITH MULTIPLE-CHOICE QUESTIONS	188	82.1
WRITTEN WITH ESSAY QUESTIONS	130	56.8
WRITTEN WITH QUESTIONS ON CLINICAL CASES	172	75.1
OTHER	47	20.5
<i>FINAL EXAMINATIONS⁽²⁾</i>	225	—
ORAL THEORETICAL EXAMS	65	28.9
ORAL PRACTICAL EXAMS WITH PATIENTS	96	42.7
WRITTEN EXAMS	210	93.3
WRITTEN WITH MULTIPLE-CHOICE QUESTIONS	170	75.6
WRITTEN WITH ESSAY QUESTIONS	104	46.2
WRITTEN WITH QUESTIONS ON CLINICAL CASES	154	68.4
OTHER	30	13.3

(1) Percentage of total number of surveys with information on partial examinations

(2) Percentage of total number of surveys with information on final examinations

Almost all the surveys indicate that both partial and final examinations are administered; the most frequently cited form of assessment is the written exam (Table 16).

Discussion

Discussion of the survey results should be preceded by an explanation of the limitations that may affect their interpretation. Some of those limitations have to do with the respondents who received the survey and with the data collection methodology, while others have to do with the survey instrument itself.

Notable among the former is the impossibility of obtaining a complete list of the colleges and schools of medicine in Latin America, which, in turn, made it impossible to ensure that the responses were representative. Although the FEPAFEM list was available, it could not be guaranteed that it contained all CSMs in existence at the time the survey was conducted. In addition, the term "pediatrics teaching units," the target population for the survey, was interpreted in different ways by different CSMs, depending on their respective structures. Consequently, the term was not considered applicable to all CSMs, and it is therefore not certain that responses were received from all units of this type that exist in each CSM.

In addition, differences in respondents' understanding of some of the other terms used in the survey may have affected the comparability of their responses. For example, it proved impossible to process and analyze the questions relating to time devoted to pediatrics-related teaching (part of question 6, question 7, and part of question 8), precisely because of such differences in understanding.

Moreover, the fact that survey respondents were from pediatrics departments might be a limitation for drawing conclusions on matters relating to the functioning or characteristics of any instruction provided outside pediatrics teaching units.

The survey revealed considerable diversity among the colleges and schools of medicine in different countries: while the length of the program of study was 6 years in the majority of the CSMs surveyed, it ranged from 4 to 8 years. With regard to the duration of study specifically in pediatrics, the range was even greater: 5 to 40 weeks per year. The number of graduates per year also varied greatly. In some cases, these differences may be a reflection of local needs, while in others they might be explained by the random way in which higher education systems in the Region originated and have evolved. However, the variations diminish when aspects relating to actual teaching—content, methodology, clinical training, and others—are analyzed.

With regard to content, all the CSMs surveyed include instruction in prevalent childhood illnesses and in disease prevention and health promotion topics relevant to health care for children under 5. In both cases, this instruction takes place mainly in pediatrics courses.

The teaching methods that are most prevalent appear to be those that call for less active participation by the student. It would be very interesting to know whether the CSMs in the Region have begun adopting the current trends in medical education methodology, notably student-centered teaching, focusing on problem-solving and incorporating the principles of evidence-based medicine.

While practical training is a part of pediatrics instruction in the CSMs surveyed, there are still some schools in which the number of students per training group is far from ideal. In general, the focus is on training in clinical and hospital activities, not on practice at the primary care level and on activities relating to prevention and health promotion and

education. However, in order to adapt medical education to existing health care needs and, especially, in order to incorporate the IMCI strategy, there is a growing trend to increase the amount of practical training experience that students receive in ambulatory and community settings and to begin such training during the first years of medical education and include it as part of the basis for student assessment.

As to the possibilities for including teaching of the IMCI strategy in the curricula of the CSMs of the Region, several points are worth noting:

- ▶ Every year medical schools are turning out a significant number of graduates whose future practice as health care professionals could potentially be improved through training in IMCI.
- ▶ The contents of IMCI are already being taught by medical schools, which will facilitate inclusion of the strategy in medical education.
- ▶ Departments of pediatrics are the focal points to contact within CSMs for the incorporation of the IMCI strategy in undergraduate medical education.

The necessary conditions for incorporating the IMCI strategy in medical education already exist in Latin America. Teaching the strategy will benefit both CSMs and health systems.

There is a need to initiate or accelerate, depending on the circumstances, the actions and timetables for moving this process forward. This should be a priority item for discussion on the agendas of institutions, governments, and agencies.

The survey responses on use of textbooks and other bibliographic materials indicate that Nelson is the most frequently used text, but it is almost always supplemented by another book or books of local or regional origin, mainly Meneghello (for the Spanish-speaking countries) or Marcondes (for Brazil). Other materials, such as periodical publications, national program guidelines, or materials from the PAHO Paltex series, are used less frequently.

The use of a text of the scope and importance of Nelson alongside local texts is to the credit of pediatrics teaching units. Nevertheless, to improve the currency of content and incorporate the principles of evidence-based medicine, the availability of scholarly journals of national and international repute should be increased. In addition, in order to align medical education more closely with the local reality, greater use should be made of materials and guidelines produced by national ministries of health.

Finally, with regard to the assessment of medical students, almost all the CSMs surveyed use written examinations for both partial and final assessments. Oral exams with patients are used less often. Student assessments should increasingly be geared towards evaluating skills in patient care and in health promotion and disease prevention interventions, rather than just testing theoretical knowledge.

Recommendations

Several concrete recommendations and suggestions emerge from the discussion of the survey results.

In keeping with the objectives that guided this study, it is considered that two general and complementary recommendations can be made:

- ▶ **Efforts to strengthen and improve the training of undergraduate students enrolled in CSMs should be stepped up.**
- ▶ **The incorporation of IMCI in undergraduate medical education at CSMs should be encouraged and strengthened.**

To facilitate the implementation of these two general recommendations, several specific suggestions are made below. They are based on the analysis and discussion of the results of the survey and may prove useful in carrying out processes aimed at improving and incorporating the IMCI strategy in medical education:

- a. Improve the theoretical aspect of medical education, especially by encouraging the use of methods that are student-centered and that emphasize problem-solving and evidence-based medicine.
- b. Ensure an optimum student-instructor ratio, tailored to the needs and type of training, both in theory classes and in practical training, in order to make certain that students acquire the knowledge and skills that they will need in their future work.
- c. Increase the amount of time that students spend in practical training outside a hospital setting, including practice in social and community settings and in primary care facilities. In addition, increase the total amount of practical training time, incorporating practice into the first years of medical education. This approach will help students to learn about the health care process in an integrated manner, including prevention and health promotion interventions. It will also expose students to the reality in the community.
- d. Foster critical thinking in medical students, encouraging them to seek evidence (published by others or produced by the student him/herself) that supports what they are learning. Promoting critical analysis of documentation on the efficacy of the practices that students are performing and seeking literature that backs up what they are studying may be very helpful in this endeavor.
- e. Strengthen the integration between the contents taught and the methods used during basic medical training and those taught and applied during clinical training. This integration should be founded on prevention and treatment of the diseases that are most prevalent and the health promotion recommendations that are most appropriate in the case of each country.
- f. Encourage the use of current literature (publications, scientific journals, guidelines, consensuses, etc.) as a complement to pediatrics textbooks.
- g. Educate instructors in CSMs about the central features of the IMCI strategy. Assess, for

each CSM and each pediatrics teaching unit, how and when the IMCI strategy should be introduced into undergraduate medical training.

- h. Put in place mechanisms that will enable each pediatrics teaching unit to develop a work plan for introducing the IMCI strategy. The possibility of incorporating the strategy into the curricula of other teaching units or areas of CSMs that include contents related to IMCI should also be considered. Those who formulate such work plans should be encouraged to include defined objectives, specific activities, established timeframes for implementation, and clear goals to be achieved.

In addition to the foregoing suggestions—which arise from the analysis and discussion of the results of the survey and from the experience acquired in conducting it, as well as the discussions that have occurred and the opinions that have been voiced during the process—it is considered important to suggest some potential future directions for action. These lines of action will undoubtedly serve to strengthen the quality of instruction in pediatrics, not just from the standpoint of incorporating IMCI, but in general. The suggested future directions are:

- i. Deepen study and knowledge of the methodologies, content, and results of medical training, at both the undergraduate and graduate levels. To that end, new studies might be designed to collect information on training, including aspects such as the performance of graduates, the perceptions and interests of students, the interest of health personnel in continuing education methodologies, etc.
- j. Increase documentation on innovative change processes already occurring in the region in pediatrics training, including the process of incorporating the IMCI strategy. Documenting these processes may serve as a basis for the dissemination and exchange of information among CSMs, thus lending support to experiences already under way and encouraging the introduction of IMCI by schools that have not yet begun the process.
- k. Promote, in the framework of ALAPE, the creation of committees or task forces on medical education with participation by pediatrics teaching units from all member countries and by PAHO and national pediatrics societies. These groups will provide a propitious environment for furthering the exchanges mentioned above and will enable educators to stay abreast of the latest developments in their field.
- l. Enhance coordination between CSMs and ministries of health and education, the network of health care facilities located within the CSM's sphere of influence, and community organizations. Better coordination will help improve the education and practical training of future doctors, taking local needs into account.

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Annex 1

SURVEY ON TEACHING OF PEDIATRICS 1999

Identifying data

Country _____

University _____

School or department _____

First and last name of head of school or department

Address

Street _____

Street _____ State/Prov _____

Postal code _____ Country _____

Telephone _____ Fax _____

E-mail _____

Type of Institution Public Private

First and Last Name of the Person Answering the Survey:

Position _____

Address

Street _____

City _____ State/Prov _____

Postal code _____ Country _____

Telephone _____ Fax _____

E-mail _____

ALAPE/PAHO Survey on Teaching of Pediatrics

Question 1

1.1 What is the length of the program of study in medicine at your university?

(Please indicate duration in academic years)

1.2 What is the length of the program of study in pediatrics at your university?

(Please indicate number of weeks and/or course hours)

Question 2

2.1 How many students per year graduate with medical degrees at your university?

2.2 How many students per rotation study pediatrics in your department?

2.3 How many students per academic year study pediatrics in your department?

Question 3

3.1 A total of _____ students are enrolled in theory courses in your department?

3.2 Are students divided into groups for their clinical training?

Yes Não

If you answered "yes" to the above question:

3.3 What is the student-instructor ratio in these groups?

3.4 How do students provide health care for children during clinical training?

3.4 .1 Individually (each individual student provides care for 1 or more children)

3.4 .2 In groups (2 or more students provide care for 1 or more children)

3.4.2.1 How many students are there in each group? _____

Question 4

4.1 Please indicate in which course(s) during their medical education students acquire the knowledge and skills needed to treat the following pathologies or conditions in children under 5 (*enter answers in the following table*):

Pathology or Problem	Course	Course	Course
Sepsis			
Meningitis			
Acute respiratory infections*			
Acute diarrheal diseases			
Dehydration			
Malaria			
Measles			
Malnutrition			
Anemia			
Nonspecific febrile syndrome			

*Includes both upper and lower respiratory infections

4.2 Please indicate in which course(s) during their medical education students acquire the knowledge and skills needed to provide clinical care for children under 5 in relation to the following aspects of disease prevention and health promotion:

Intervention	Course	Course	Course
Breastfeeding			
Nutritional assessment			
Growth assessment			
Development assessment			
Immunization			

Question 5

5.1 What teaching method(s) are used in your department to teach theoretical content in pediatrics?

- 5.1.1 Lecture classes
- 5.1.2 Seminars
- 5.1.3 Discussion groups
- 5.1.4 Patient presentations
- 5.1.5 Analysis of scientific studies
- 5.1.6 Other

5.2 What teaching resources are used?

- 5.2.1 Videos
- 5.2.2 Slides
- 5.2.3 Photo collections
- 5.2.4 Mannequins
- 5.2.5 Games
- 5.2.6 Other

Question 6

Does the training of medical students at your institution include clerkships, clinical attachments, externships, or some other form of practical training in which students provide clinical care to children under 5? (Do not include practical training performed as part of the study of pediatrics)

Yes No

(If you answered "yes," please indicate the type of practical training in the following table.)

Type of practical training	Setting	Duration	% of total program of study
Externship			
Clerkship/clinical attachment			
Other			

Question 7

Please indicate how much time is devoted during the study of pediatrics to theoretical instruction in each of the topics listed below, by type of teaching activity.

Topic	Lecture classes	Individual or group work	Other	Total time devoted
Sepsis				
Meningitis				
Acute respiratory infections				
Acute diarrheal diseases				
Dehydration				
Malaria				
Measles				
Malnutrition				
Anemia				
Nonspecific febrile syndrome				
Breastfeeding				
Feeding				
Growth assessment				
Development assessment				
Immunization				

Question 8

Where do students carry out their practical training in pediatric care and how many hours are devoted to such training?

- 8.1 Hospital
 - 8.1.1 Inpatient ward _____ hours
 - 8.1.2 Ambulatory facility _____ hours
 - 8.1.2.1 General pediatrics clinic _____ hours
 - 8.1.2.2 Pediatrics subspecialty _____ hours
- 8.2 Emergency/casualty _____ hours
- 8.3 Health center _____ hours
- 8.4 Health post _____ hours
- 8.5 Other (Specify) _____ hours

Question 9

9.1 Are students supervised when they are providing care for children?

Yes No

If you answered "yes:

9.2 Who supervises them? _____
(Indicate instructor's position)

9.3 Is some kind of checklist used in supervision?

Yes No

(If you answered "yes," please attach a copy of the checklist)

Question 10

Please indicate which activities students perform during their clinical training in patient care.

- 10.1 Patient interview and basic medical history
- 10.2 Clinical examination
- 10.3 Initial diagnosis
- 10.4 Formulation of treatment plan
- 10.5 Instructions to the mother on treatment
- 10.6 Information to parents on
 - 10.6.1 Evolution of the illness
 - 10.6.2 Complications of the illness
 - 10.6.3 Follow-up care
 - 10.6.4 Other (specify)
- 10.7 Education of parents on prevention and health promotion measures
 - 10.7.1 Child feeding
 - 10.7.2 Vaccines
 - 10.7.3 Growth monitoring
 - 10.7.4 Stimulation
 - 10.7.5 Other (specify) _____

Question 11

On average, in each practice session, how many patients does each student see:

- 11.1 Inpatient setting
 - 11.1.1 _____ working individually
 - 11.1.2 _____ working in groups
- 11.2 Ambulatory setting
 - 11.2.1 _____ working individually
 - 11.2.2 _____ working in groups

Question 12

How are students assessed in pediatrics courses?

12.1 Partial examinations

- 12.1.1 Oral theoretical exams
- 12.1.2 Oral practical exams with patients
- 12.1.3 Written theoretical exams
 - 12.1.3.1 Structured written exams with multiple-choice questions
 - 12.1.3.2 Semi-structured written exams with essay questions
 - 12.1.3.3 Written exams with questions on clinical cases
 - 12.1.3.4 Other

Specify _____

12.2 Final examinations

- 12.2.1 Oral theoretical exams
- 12.2.2 Oral practical exams with patients
- 12.2.3 Written theoretical exams
 - 12.2.3.1 Structured written exams with multiple-choice questions
 - 12.2.3.2 Semi-structured written exams with essay questions
 - 12.2.3.3 Written exams with questions on clinical cases
 - 12.2.3.4 Other

Specify _____

Question 13

What textbooks and/or other bibliographic materials do pediatrics students use?

Annex 2

INSTRUCTIONS FOR ANSWERING THE SURVEY

SURVEY ON TEACHING OF PEDIATRICS ALAPE/PAHO 2000

INSTRUCTIONS

Identifying data

In the event that the person answering the survey is not the head of the pediatrics department, please indicate the name and contact information of the professional who provides the information requested.

Question 1

- 1.1 Please indicate the number of academic years, excluding the time devoted to any induction or vestibule course.
- 1.2 If the program of study comprises more than one module or block, please indicate the time, in hours and/or weeks, devoted to each.

Question 2

- 2.1 Number of students who graduate per year.
- 2.2 Number of students in each rotation, if there is more than one rotation per year.
- 2.3 Number that results from multiplying the number of students per rotation by the number of rotations.

Question 3

- 3.1 Please indicate the number of students enrolled in each theory course, or an average of those numbers. This will make it possible to calculate the student-instructor ratio in theory courses.
- 3.2 It is assumed that students are divided into small groups or teams for clinical training in patient care.
- 3.3 Ratio: 1 instructor/ students
- 3.4 Clinical training modalities
 - 3.4.1 Individual
 - 3.4.2 Groups
 - 3.4.2.1 Indicate the number of students in each group

Question 4

- 4.1 and 4.2 The skills and knowledge needed to treat the pathologies and conditions listed in the table could be acquired in courses in departments other than pediatrics. Please indicate the courses in which such skills and knowledge are taught.

Question 5

Please indicate the methodologies and resources used, including details under "Other" if appropriate.

Question 6

The aim here is to collect information on all opportunities that students have for contact with child patients outside the pediatrics department.

Question 7

Please indicate how many hours are devoted to theoretical instruction in the topics listed in the table.

Question 8

The aim in this case is to obtain information on the settings in which students receive clinical training. The activities performed may include both clinical care and health promotion and disease prevention interventions in areas related to child health.

Question 9

This question is intended to elicit information on the supervision of students during clinical training and to determine whether such supervision entails the use of an established protocol or checklist of activities.

Question 10

Please indicate all activities performed. If the box beside an activity is not checked, it will be assumed that it is not performed by students during clinical training in patient care.

Question 11

This question concerns the type of clinical training that students receive; there may be one or two responses under both 11.1 and 11.2.

Question 12

If your institution uses a type of assessment that is not listed among those in the table, please provide details under "Other."

Question 13

Please provide a list of textbook(s), indicating author, publisher, and the edition used. Also list other references used, such as notes, photocopied materials, or offprints of scientific articles.

**LIST OF CSMs PARTICIPATING IN THE SURVEY
AND NUMBER OF SURVEYS COMPLETED**

COUNTRY	UNIVERSITY	TOTAL
ARG	U. CATÓLICA DE CÓRDOBA	1
ARG	U. DE BUENOS AIRES	28
ARG	U. DE CUYO (MENDOZA)	1
ARG	FAVALORO (BUENOS AIRES)	1
ARG	FUNDACIÓN BARCELO	1
ARG	U. HEBREA-ARGENTINA BAR ILAN (BUENOS AIRES)	1
ARG	LA PLATA	2
ARG	ROSARIO	2
ARG	TUCUMÁN	1
ARG	U. DEL NORDESTE (CORRIENTES)	2
BOL	U. CRISTIANA DE BOLIVIA	1
BOL	U. DEL VALLE (COCHABAMBA)	1
BOL	U. MAYOR DE SAN ANDRÉS (LA PAZ)	1
BOL	U. MAYOR DE SAN SIMÓN (COCHABAMBA)	1
BOL	U. MAYOR REAL Y PONTIFICIA SAN FRANCISCO XAVIER DE CHUQUISACA	1
BOL	NUUESTRA SEÑORA DE LA PAZ	1
BOL	U. PRIVADA ABIERTA LATINOAMERICANA "UPAL"	1
BOL	U. TÉCNICA PRIVADA COSMOS "UNITEPEC"	1
BRA	U. DO ESTADO DO RIO DE JANEIRO	1
BRA	UNIVERSITY NAME UNKNOWN (VOLTA REDONDA)	1
BRA	UNIVERSITY NAME UNKNOWN (CAXIAS DO SUL)	1
BRA	UNIVERSITY NAME UNKNOWN (LONDRINA)	1
BRA	UNIVERSITY NAME UNKNOWN (MINAS GERAIS)	1
BRA	UNIVERSITY NAME UNKNOWN (PASSO FUNDO)	1
BRA	CAMPOS (RÍO DE JANEIRO)	1
BRA	U. CATOLICA DE PORTO ALEGRE (RIO GRANDE DO SUL)	1
BRA	U. CATOLICA DE SÃO PAULO	1
BRA	U. CATOLICA DO PARANA	1
BRA	CIENCIAS MÉDICAS, UNICAMP	1
BRA	FACULDADE DE MEDICINA DE SÃO JOSE DO RIO PRETO	1
BRA	U. DE PASSO FUNDO	1
BRA	U. DE PELOTAS (RIO GRANDE DO SUL)	1
BRA	U. DE PERNAMBUCO	1
BRA	U. DE SAN FRANCISCO (SÃO PAULO)	1

COUNTRY	UNIVERSITY	TOTAL
BRA	U. DE SÃO PAULO (RIBERÃO PRETO)	1
BRA	U. DE SÃO PAULO (SÃO PAULO)	1
BRA	UNIVERSITY NAME UNKNOWN (CATANDUVA – SÃO PAULO)	1
BRA	UNIVERSITY NAME UNKNOWN (UBERABA – MINAS GERAIS)	1
BRA	ESCOLA DE CIENCIAS MEDICAS DE ALAGOAS	1
BRA	ESTADUAL DE MARINGA (PARANA)	1
BRA	ESTADUAL DE SÃO PAULO	1
BRA	ESTADUAL MONTES CLAROS (MINAS GERAIS)	1
BRA	FACULDADE DE CIENCIAS MEDICAS DA SANTA CASA DE SÃO PAULO	1
BRA	FACULDADE DE MEDICINA DE TAUBATE	1
BRA	FACULDADE DE MEDICINA DE VALÊNCIA	1
BRA	FACULDADE DE MEDICINA DE BLUMENAU	1
BRA	FACULDADE DE MEDICINA DE DE GAMA FILHO	1
BRA	FACULDADE DE MEDICINA DE DE MOGI DAS CRUZES	1
BRA	U. FEDERAL DA PARABIA	1
BRA	U. FEDERAL DE ALAGOAS	2
BRA	U. FEDERAL DE GOIAS	1
BRA	U. FEDERAL DE MARANHÃO	1
BRA	U. FEDERAL DE MATO GROSSO	1
BRA	U. FEDERAL DE MATO GROSSO DO SUL	1
BRA	U. FEDERAL DE MINAS GERAIS	1
BRA	U. FEDERAL DE PELOTAS	1
BRA	U. FEDERAL DE PERNAMBUCO	1
BRA	U. FEDERAL DE PORTO ALEGRE	1
BRA	U. FEDERAL DE SANTA CATARINA	1
BRA	U. FEDERAL DE SANTA MARIA (RIO GRANDE DO SUL)	1
BRA	U. FEDERAL DE SÃO PAULO	1
BRA	U. FEDERAL DE UBERLANDIA (MINAS GERAIS)	1
BRA	U. FEDERAL DO ESPIRITO SANTO	1
BRA	U. FEDERAL DO PARANA	1
BRA	U. FEDERAL DO PIANI	1
BRA	U. FEDERAL DO RIO DE JANEIRO	1
BRA	U. FEDERAL DO RIO GRANDE DO SUL	1
BRA	U. FEDERAL FLUMINENSE	1
BRA	U. FEDERAL SERGIPE	1
BRA	FUNDAÇÃO EDUCACIONAL SERRA DOS ORGÃOS	2
BRA	FUNDAÇÃO UNIVERSIDADE FEDERAL DO RIO GRANDE	1

COUNTRY	UNIVERSITY	TOTAL
BRA	HOSPITAL UNIVERSITARIO DE JUIZ DE FORA	1
BRA	U. MUNICIPAL DE JUNDAI (SÃO PAULO)	1
BRA	RIO GRANDE DO SUL	1
COL	ANTIOQUIA	1
COL	CALDAS	1
COL	U. COLEGIO MAYOR DE NUESTRA SEÑORA DEL ROSARIO (BOGOTA)	1
COL	U. COOPERATIVA DE COLOMBIA	1
COL	CARTEGENA	1
COL	U. DEL CAUCA	1
COL	U. DEL QUINDIO	1
COL	U. DEL VALLE	1
COL	U. INDUSTRIAL DE SANTANDER	1
COL	U. LIBRE-SECCIONAL ATLANTICA	1
COL	U. METROPOLITANA	1
COL	U. MILITAR "NUEVA GRANADA"	1
COL	U. PONTIFICIA BOLIVARIANA (MEDELLÍN)	1
COL	U. SURCOLOMBIANA	1
COR	U. AUTÓNOMA DE CENTRO AMÉRICA	1
COR	U. DE COSTA RICA	1
COR	U. LATINA DE COSTA RICA	1
CUB	FACULTAD DE CIENCIAS MÉDICAS "CMDT MANUEL FAJARDO RIVERO"	1
CUB	INST. SUPERIOR DE CIENCIAS MÉDICAS DE LA HABANA "10 DE OCTUBRE"	1
CUB	INST. SUP. CIENCIAS MÉD. DE LA HABANA "ENRIQUE CABRERA"	1
CUB	INST. SUP. CIENCIAS MÉD. DE LA HABANA "FINLAY-ALBARRAN"	1
CUB	INST. SUP. CIENCIAS MÉD.-ORIENTE (ICSM-ORIENTE) HOLGUÍN	1
CUB	INST. SUP. CIENCIAS MÉD. DE LA HABANA "SALVADOR ALLENDE"	1
CUB	INST. SUP. CIENCIAS MÉD. DE LA HABANA GEN. CALIXTO GARCIA	1
CUB	INST. SUP. CIENCIAS MÉDICAS-ORIENTE "SANTIAGO DE CUBA 1"	1
CUB	INST. SUP. CIENCIAS MÉDICAS -ORIENTE "GRANMA"	1
CUB	INST. SUP. CIENCIAS MÉD. DE LA HABANA "JULIO TRIGO"	1
CUB	INST. SUP. CIENCIAS MÉDICAS LA HABANA (ICSM-GUINES) FILIAL	1
CUB	INST. SUP. CIENCIAS MÉDICAS-ORIENTE "SANTIAGO DE CUBA 2"	1
CUB	INST. SUP. CIENCIAS MÉDICAS "DR. GUSTAVO ALDEREQUIA"	1
CUB	INST. SUP. CIENCIAS MÉDICAS (ICSM-ORIENTE) SANTI SPIRITUS	1
CUB	INST. SUP. CIENCIAS MÉDICAS LA HABANA "SANTA CLARA"	1
CUB	INST. SUP. CIENCIAS MÉDICAS LA HABANA "GEN. M. FAJARDO"	1
CUB	INST. SUP. CIENCIAS MÉDICAS LA HABANA "MATANZAS"	1

COUNTRY	UNIVERSITY	TOTAL
CUB	INST. SUP. CIENCIAS MÉD. LA HABANA "PINAR DEL RIO"	1
CUB	INST. SUP. CIENCIAS MÉD. LA HABANA (ICSM-CAMAGUEY)	1
CUB	INSTITUTO SUPERIOR DE CIENCIAS MÉDICAS (HAVANA)	1
CUB	INST. SUP. CIENCIAS MÉDICAS-ORIENTE "ZOILO MARINELLO"	1
CHI	U. AUSTRAL DE VALDIVIA	1
CHI	U. CATÓLICA DE CHILE	1
CHI	CONCEPCIÓN	1
CHI	U. DE CHILE (SANTIAGO)	5
CHI	U. DE LA FRONTERA (TEMUCO)	1
CHI	U. DE LOS ANDES (SANTIAGO)	1
CHI	U. MAYOR (SANTIAGO)	1
CHI	PONTIFICIA UNIVERSIDAD CATÓLICA (SANTIAGO)	1
CHI	U. DE SANTIAGO	1
CHI	U. DE VALPARAÍSO	1
DOM	U. AUTONOMA DE SANTO DOMINGO	1
DOM	U. AUTONOMA DE SANTO DOMINGO (UASD)	1
DOM	U. IBEROAMERICANA	1
DOM	INSTITUTO TECNOLÓGICO DE SANTO DOMINGO	1
DOM	INSTITUTO TECNOLÓGICO DE SANTO DOMINGO (INTEC)	1
DOM	U. NACIONAL PEDRO HENRIQUEZ UREÑA	2
DOM	PONTIFICIA UNIVERSIDAD CATÓLICA MADRE Y MAESTRA	1
DOM	U. TECNOLÓGICA DE SANTIAGO (UTESA)	1
DOM	UNIBE	1
ECU	U. CENTRAL DEL ECUADOR	1
ELS	ALBERTO MASFERRER	1
ELS	U. AUTÓNOMA DE SANTA ANA	1
ELS	U. EVANGÉLICA DE EL SALVADOR	1
ELS	JOSÉ MATÍAS DELGADO-FACULTAD DE CIENCIAS DE LA SALUD	1
ELS	U. NACIONAL DE EL SALVADOR	1
GUA	U. DE SAN CARLOS DE GUATEMALA	1
GUA	FRANCISCO MARROQUÍN	1
GUA	SAN CARLOS DE GUATEMALA	1
HAI	U. D'ETAT D'HAITI	1
HAI	NOTRE DAME D'HAITI	1
HAI	QUISQUEYA	1
MEX	ANAHUAC	1
MEX	U. AUTÓNOMA DE AGUASCALIENTES	1

COUNTRY	UNIVERSITY	TOTAL
MEX	AUTONOMA DE QUERETARO	1
MEX	U. AUTÓNOMA DE BAJA CALIFORNIA	1
MEX	U. AUTÓNOMA DE BAJA CALIFORNIA (TIJUANA CAMPUS)	2
MEX	U. AUTÓNOMA DE CAMPECHE	1
MEX	U. AUTÓNOMA DE CIUDAD JUÁREZ	1
MEX	U. AUTÓNOMA DE COAHUILA	1
MEX	U. AUTÓNOMA DE COAHUTLA	1
MEX	U. AUTÓNOMA DE GUADALAJARA	2
MEX	U. AUTÓNOMA DE NAYARIT	1
MEX	U. AUTÓNOMA DE NUEVO LEÓN	1
MEX	U. AUTÓNOMA DE QUERETARO	1
MEX	U. AUTÓNOMA DE SAN LUIS POTOSÍ	1
MEX	U. AUTÓNOMA METROPOLITANA (UAM)	1
MEX	BENEMERITA UNIVERSIDAD AUTÓNOMA DE PUEBLA	1
MEX	CENTRO DE ESTUDIOS UNIVERSITARIOS XOCHICALCO	1
MEX	COLIMA	1
MEX	U. DE COLIMA	1
MEX	U. DE MONTERREY	1
MEX	U. DEL NORESTE	1
MEX	U. DEL NORESTE (TAMPICO, TAMAULIPAS)	1
MEX	U. DEL TOLIMA	1
MEX	ESCUELA NACIONAL DE ESTUDIOS PROFESIONALES (IZTACALA CAMPUS)	1
MEX	ESCUELA NACIONAL DE MEDICINA Y HOMEOPATÍA (IPN)	1
MEX	ESCUELA SUPERIOR DE MEDICINA (IPN)	1
MEX	GUANAJUATO	1
MEX	INSTITUTO POLITÉCNICO NACIONAL (IPN)	1
MEX	INSTITUTO TEC. Y DE ESTUDIOS SUPERIORES DE MONTERREY	1
MEX	U. JUÁREZ AUTÓNOMA DE TABASCO	1
MEX	U. JUÁREZ DEL ESTADO DE DURANGO	2
MEX	LA SALLE	1
MEX	U. NACIONAL AUTÓNOMA DE MÉXICO	3
MEX	U. NACIONAL AUTÓNOMA DE MÉXICO ENEP-IZTACALA	1
MEX	U. NACIONAL AUTÓNOMA DE MÉXICO FACULTAD DE MEDICINA	1
MEX	U. POPULAR AUTÓNOMA DEL ESTADO DE PUEBLA (UPAEP)	1
MEX	U. REGIONAL DEL SURESTE (OAXACA)	1
NIC	U. AMERICANA	1
NIC	U. AUTÓNOMA DE NICARAGUA (LEÓN)	1

COUNTRY	UNIVERSITY	TOTAL
NIC	U. AUTÓNOMA DE NICARAGUA (MANAGUA)	1
PAN	U. DE PANAMA	2
PAN	U. LATINA	1
PAR	U. CATÓLICA (SEDE REGIONAL VILLARICA)	1
PAR	U. NACIONAL	1
PAR	U. NACIONAL DE ASUNCIÓN (UNA)	1
PER	U. CATÓLICA DE SANTA MARÍA (AREQUIPA)	1
PER	CAYETANO HEREDIA	2
PER	FEDERICO VILLARREAL	1
PER	U. NACIONAL DE PIURA	1
PER	U. NACIONAL DE SAN AGUSTÍN DE AREQUIPA	1
PER	U. NACIONAL DE TRUJILLO	1
PER	U. NACIONAL DEL CENTRO DEL PERÚ	1
PER	U. NACIONAL SAN ANTONIO ABAD DEL CUSCO	1
PER	U. PARTICULAR SAN MARTÍN DE PORRES	1
PER	PEDRO RUIZ GALLO	1
PER	U. PRIVADA ANTENOR ORREGO	1
PER	SAN LUIS GONZAGO DE ICA	1
URU	U. DE LA REPÚBLICA	3
VEN	CARABOBO	1
VEN	U. CENTRAL DE VENEZUELA	3
VEN	U. DEL ZULIA	1
VEN	ZULIA	2
	TOTAL	253



Pan American Health Organization



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World Health Organization

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Latin American Pediatrics Association