

Integrated Management of Childhood Illness: a summary of first experiences

T. Lambrechts,¹ J. Bryce,² & V. Orinda³

The strategy of Integrated Management of Childhood Illness (IMCI) aims to reduce child mortality and morbidity in developing countries by combining improved management of common childhood illnesses with proper nutrition and immunization. The strategy includes interventions to improve the skills of health workers, the health system, and family and community practices. This article describes the experience of the first countries to adopt and implement the IMCI interventions, the clinical guidelines dealing with the major causes of morbidity and mortality in children, and the training package on these guidelines for health workers in first-level health facilities. The most relevant lessons learned and how these lessons have served as a basis for developing a broader IMCI strategy are described.

Voir page 592 le résumé en français. En la página 593 figura un resumen en español.

Introduction

The strategy of Integrated Management of Childhood Illness (IMCI) is aimed at reducing child mortality and morbidity in developing countries. It combines improved management of common childhood illnesses (e.g. pneumonia, diarrhoea, malaria, measles, ear problems, and anaemia) with proper nutrition and immunization. In 1995, guidelines for the integrated management of childhood illnesses at first-level facilities^a were finalized in a collaborative effort, which was led by WHO and supported by a programme of research (1). WHO and UNICEF promoted a training course based on these guidelines in 1996, which was targeted at health workers in first-level facilities (2), and issued a joint statement on IMCI in July 1997 (3).

Following this training effort, a broad strategy was developed to encompass both preventive and curative interventions for promoting child health and development. The three components of these interventions were as follows:

- improving the skills of health workers;
- improving the health system to support IMCI; and
- improving family and community practices.

IMCI implementation in a country proceeds in three phases. In the first phase are activities for the

introduction of IMCI, which leads to a decision by the ministry of health on whether to move forward with further preparations and planning. The second phase is for *early implementation*, in which each country adapts the generic IMCI clinical guidelines to its own epidemiological and cultural characteristics and begins implementation in a limited number of areas (e.g. districts). This experience is carefully documented and analysed. The third phase, which is focused on *expansion*, draws on the experience gained during early implementation to introduce a broad range of IMCI activities and increase access to them. Fig. 1 shows the countries engaged in IMCI and their phase of implementation (as of December 1998).

This article, which draws on information from a number of sources, describes the experiences of several countries in implementing IMCI as well as WHO's recommendations that evolved from these experiences. WHO has documented the process of IMCI implementation in six countries — Indonesia, Nepal, Peru, Philippines, Uganda, and the United Republic of Tanzania (4). This involved completing detailed forms by WHO staff and consultants together with country personnel, in collaboration with UNICEF and other partners, which were used as the basis for interviews and document reviews. The results and preliminary conclusions reported here have been reviewed by WHO staff at all levels, as well as with country personnel implementing IMCI, to ensure that they are complete and correct. The experiences of additional countries are included where possible, drawing on reports from the staff in the ministry of health and other institutions implementing IMCI, and on presentations made at the First Global Review and Coordination Meeting on Integrated Management of Childhood Illness (5).

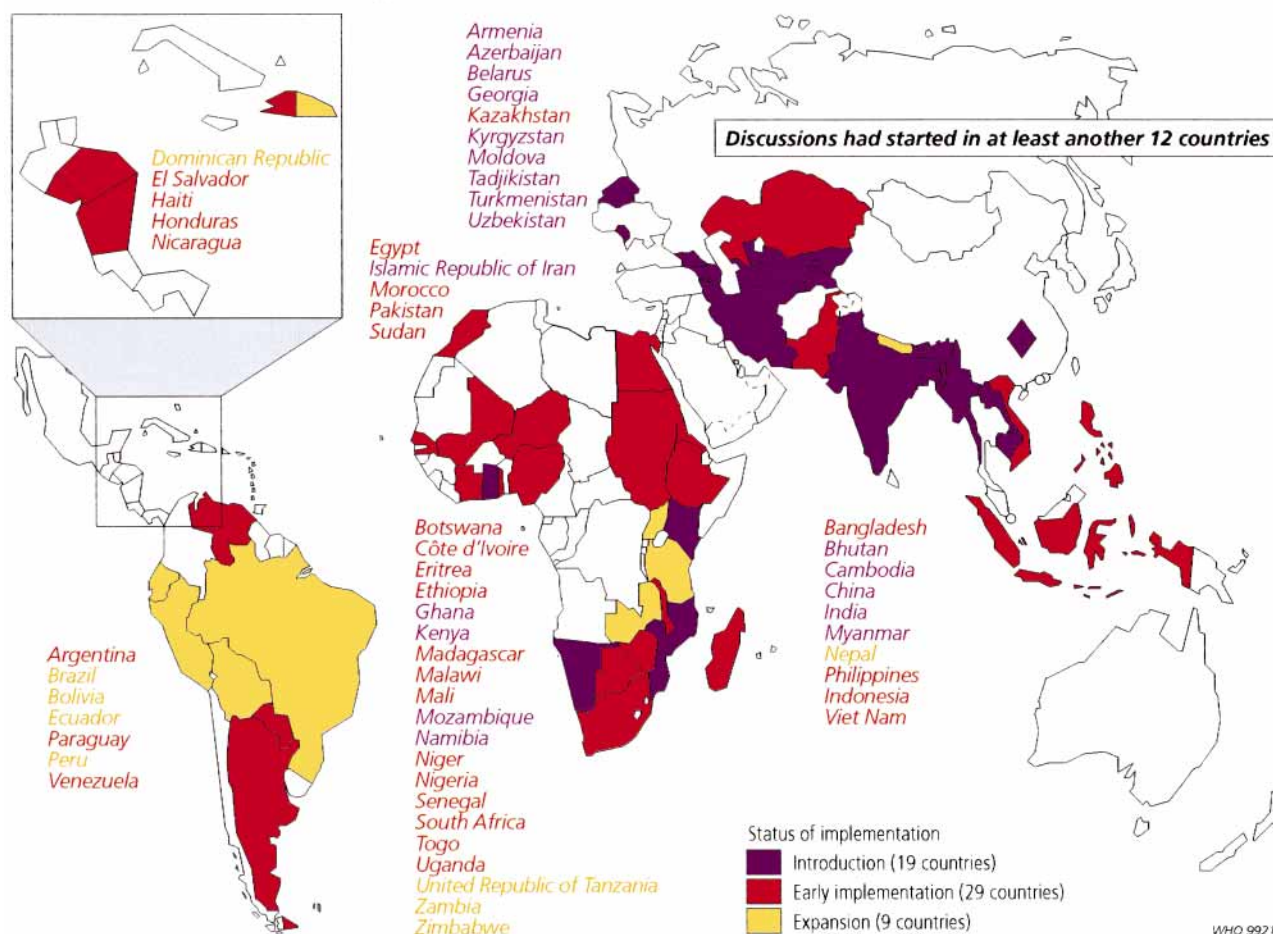
¹ Medical Officer, Child and Adolescent Health and Development, World Health Organization, 1211 Geneva 27, Switzerland. Requests for reprints should be addressed to this author.

² Scientist, Child and Adolescent Health and Development, World Health Organization, Geneva, Switzerland.

³ Senior Adviser, Child Health, UNICEF, New York.

^a "First-level" refers to a health facility which has a trained health professional who is recognized by the ministry of health as capable of providing outpatient care to children.

Fig. 1. Status of IMCI implementation, as of December 1998



This retrospective summary attempts to give an accurate report based on what was learned and the changes effected during the early period of IMCI implementation covered by this documentation effort (1995–97). When the first plans for implementation at country level were made 4 years ago (1995), it was not possible to anticipate the changes that would be made to the strategy as a result of what was learned during IMCI's progressive implementation in the countries and regular reviews by ministries of health. For example, the third component in the strategy (improving family and community practices) has recently been defined more clearly in terms of focus and approaches, but — despite ongoing programmes in most countries — there is very limited experience about how best to coordinate these activities within a broader IMCI strategy. It would therefore be misleading to apply the current conceptual framework for IMCI implementation to these early experiences. In consequence, we have tried to describe accurately the initial plans and how the experience gained led to modification of the IMCI strategy.

This article is divided into three sections. In the first, we highlight the process of introducing IMCI; the second describes the experiences gained during early implementation in countries, focusing on the three IMCI components; and the third highlights the issues and challenges in planning for the expansion phase of IMCI. Within each section, we describe the

initial plans, country experiences, and current recommendations for countries implementing IMCI.

First phase: introduction of IMCI at country level

For many countries, the introduction of IMCI provides an opportunity to review child health policies and to reorganize their services and interventions. The IMCI clinical guidelines are not entirely new; for example, the recommendations for case management of diarrhoeal diseases (CDD) and acute respiratory infections (ARI) are very close to those that have been promoted by WHO over the past 10 years. However, the integrated approach in health service delivery and community interventions for all the needs of each child and carer requires new levels of coordination and shared responsibility among those implementing specific disease programmes and the supporting services in most countries.

One objective of the introductory period in a country is to ensure that key personnel in the ministry of health understand the IMCI strategy and its implications as the basis for deciding whether to proceed with planning and preparations for its implementation. The activities to meet this objective were initially focused on an "orientation" meeting

Box 1. Current recommendations for IMCI implementation: the introduction of IMCI at country level

- Conduct several meetings, for individuals and groups, so that senior ministry of health officials, leading paediatricians, donors, and partner agencies will become well acquainted with IMCI as a basis for making an informed decision to move forward with IMCI planning and preparations.
- Expose key ministry of health personnel to IMCI training, planning and adaptation procedures.
- Establish a structure for planning and managing IMCI activities with representatives of existing specific disease programmes encompassed by IMCI, as well as programmes in nutrition, essential drugs, health education and health information systems.
- Ensure that high-level ministry of health officials are involved in IMCI planning and management.
- Develop coordination mechanisms with interested partner agencies to ensure that they are involved in and informed about IMCI planning and preparations.

designed to serve as a starting point for decision-making about IMCI. Experience has shown that various types of activities are needed to meet this objective, including one or more orientation meetings. In the six countries collaborating with WHO on documentation, national meetings were held in each country except in the Americas, where there was a regional orientation meeting organized for four countries, including Peru. Meetings varied in length from one to four days and, in three of the six countries, more than one national meeting was held. In all countries, formal orientation meetings were complemented by numerous smaller meetings and individual discussions with representatives of specific programmes or partner agencies.

The participation of key ministry of health staff and paediatricians in an IMCI training course at an early stage of the introductory period appeared to foster the ministry's commitment and realistic planning for IMCI. IMCI training and, where possible, participation in the adaptation process in a neighbouring country were identified as key interventions to achieve this objective of the introductory phase.

A second objective of the introductory phase is to establish a structure for planning and managing IMCI activities. The recommendation from WHO was to avoid major structural changes initially by creating an *ad hoc* working group. All countries implementing IMCI to date have defined a national-level working group to plan and coordinate the activities. In most countries, the group includes representatives of the programmes dealing with the major health conditions addressed by IMCI (diarrhoea, acute respiratory infections, malaria, immunization, and malnutrition). In addition, working groups in some countries included representatives of one or more of the following units: essential drugs, planning, medical training, supervision, health education and health information systems. Implementation and coordination of the strategy's activities appear to be more successful when the IMCI working group includes representatives of all the key units involved in programme implementation. In many countries, the IMCI working group is coordinated by a focal point, which is often the CDD, ARI or CDD/ARI programme. In instances where ministry of health officials having responsibilities above the level of individual programmes have been involved in IMCI

planning and management, the decisions have been implemented more readily.

A third objective for the introductory phase, which was defined through experience, is the early involvement of major partners and donors to allow them to make an informed decision about their role in (and level of support for) IMCI. In countries where international agencies were more actively recruited to participate in the introductory activities, their support appears to have been stronger and better coordinated with ministry of health's efforts. Current recommendations for the process of introducing IMCI at country level are shown in Box 1.

Second phase: early implementation

In the second phase, staff in the ministry of health plan and prepare for implementation and then carry out IMCI activities in a limited number of districts; this experience is carefully monitored as the basis for future planning.

Improving health workers' skills

Discussed below are adaptations of the IMCI guidelines, training of first-level health workers in case management, and referral care.

Adaptation of the IMCI guidelines. The IMCI guidelines for case management of childhood illness at first-level health facilities are generic, and must be adapted before use in countries. Step-by-step guidance is provided in the IMCI adaptation guide (6), which recommends that a subgroup be formed within the IMCI working group to carry out the adaptation steps in consultation with experienced advisers. All countries must complete the adaptations, including the identification of first- and second-line treatments for selected diseases and the selection of appropriate foods to be recommended for children of various ages. Countries are also expected to identify local terms to facilitate communication with carers, and are encouraged to develop a card for use by the health worker in counselling mothers. In addition to these essential steps, countries may decide to adapt the guidelines to reflect specific national policies, guidelines, or disease conditions. In the Philippines, for example, the guidelines were adapted to deal with dengue haemorrhagic fever. The adapted guidelines are then

used to modify the IMCI training materials for health workers in first-level facilities.

An important feature is the building of consensus on the IMCI clinical guidelines among managers of technical programmes and leading paediatricians. In cases where consensus was not achieved and existing national policies for disease-specific programmes were not updated, continuing discussions and negotiations were necessary to ensure full support for IMCI implementation. As of December 1998, 28 countries had completed the adaptation process. The estimated time needed for countries to complete this process is 6–12 months.

The generic IMCI guidelines led to considerable debate on two points. First, few countries to date have accepted the generic WHO recommendation to use co-trimoxazole (sulfamethoxazole + trimethoprim) as first-line treatment for children with both pneumonia and fever in areas where there is a risk of malaria and no resistance to sulfadoxine–pyrimethamine. The reasons were concern over patient compliance with the 5-day course of co-trimoxazole and a reluctance to change the national policy based on the limited evidence available. It was also often difficult to achieve a consensus on the recommendation to give vitamin A to children with measles or severe malnutrition during clinic visits during the early phase of implementing IMCI in countries. The reasons may be that the WHO recommendation (7) in this area usually requires a policy change, and concern about overdoses in countries with vitamin A supplementation programmes.

Common adaptations that were not usually controversial included the extension of the recommended duration of exclusive breastfeeding, the need to incorporate guidelines for areas where there is no malaria risk, and the addition of hepatitis B vaccine to the immunization schedule. In some countries the management of children with symptoms of wheezing or throat problems was also added to the guidelines. In countries that had undertaken adaptations up to the end of 1997, no changes were made in the generic guidelines to account for children infected with the human immunodeficiency virus (HIV). However, the IMCI adaptation guide does include a section on possible adaptations in settings with high HIV prevalences among women and children (6).

Experience indicates that adaptations to the generic IMCI guidelines should be limited and focused only on the major causes of mortality and morbidity for which effective treatment and/or preventive practices have been identified. Some countries field-tested their national adaptation during an early central-level training course before finalizing the guidelines. Another essential adaptation is the identification of appropriate age-specific feeding recommendations for under-5-year-olds. Countries are also encouraged to conduct studies of local terms to ensure effective communication with mothers; guidance for such studies is included in the IMCI adaptation guide.

Multiple adaptations are sometimes required because of subnational or regional differences in epidemiology or language and culture. In Brazil, for example, there are three subnational sets of guidelines to reflect different patterns of malaria prevalence. In Uganda, the mothers' counselling card is available in eight languages and several feeding-pattern studies were conducted to identify locally available foods.

Although the adaptation process is primarily designed as a basis for preparing appropriate training materials, the experience from early implementation suggests that adaptation is an important intervention by itself. The process brings together a broad range of programmes and national medical experts in child health, and requires that they work together to review and revise their standards and national policies on child health. The result is an updated, technically sound set of national standards for the case management of children, which can have lasting positive effects on child health programmes. Current recommendations on the adaptation process are shown in Box 2.

Training first-level health workers in case management. Because the IMCI clinical guidelines and the in-service training course for health workers who manage children in first-level facilities were the first IMCI interventions to be made available to countries, this is the area where most experience has been gained to date. The methods and materials for the standard 11-day course have been described elsewhere (8). Approximately 30% of instructional time is spent in supervised clinical practice, where trainees visit clinics to practise their skills and receive feedback from trained clinical instructors. The classroom component of the training uses videos, readings, reviews of photographs and demonstrations, and a variety of other interactive training methods.

By the end of 1997, at least 42 IMCI training courses for health workers managing children in first-level facilities had been conducted in four of the six countries collaborating with WHO. An average of 20 participants attended each course. A broad range of health workers with different levels of reading ability — from health assistants, enrolled nurses and midwives to physicians — have been trained. Assessments of skills at the close of training and during follow-up visits have not found clear differences in performance by type of health worker, although a definitive answer must await more rigorous operational research. Peru adapted the WHO training materials and agenda to conduct training over seven consecutive days. The Philippines, Uganda, and the United Republic of Tanzania used the 11-day agenda. Participants spent 20–30 hours in clinical practice. Reports from country staff indicate that IMCI training of acceptable quality can be carried out at the district level. Based on this experience, a set of quality criteria that should be taken into account when planning for IMCI training

Box 2. Current recommendations for IMCI implementation: improving health worker skills

Adaptation

- Adapt the IMCI guidelines to local epidemiological and cultural conditions. The adaptation process involves a review and revision of existing national policies and guidelines for outpatient paediatric care. IMCI guidelines may require subnational adaptations and periodic revision or updates.
- Build and maintain consensus on the adapted guidelines among technical programmes related to child health. Consensus must be achieved to ensure successful and continued IMCI implementation.

In-service training

- Plan IMCI training at district level so that all targeted health workers from the same facility are trained within a brief time period.
- Define a strategy to develop and sustain a pool of experienced course facilitators.
- Plan for quality training, using the following criteria: a ratio of participants to facilitators no more than 4 to 1; completion of all training modules; distribution of a copy of the IMCI chart booklet to each trainee to keep as a reference; a minimum of 30% clinical practice and 20 sick children managed by each trainee; and no more than 24 participants.
- After the training, conduct a follow-up visit to health workers managing children in first-level facilities. The objectives of this visit should include assisting the health worker in the transition to IMCI at the facility, skill reinforcement and problem solving.

Referral care

- Assess all referral possibilities (public and private) in districts planning for IMCI.
- Identify possible problems with existing referral facilities and plan for improvement.

Fig. 2. Number of sick children correctly treated by first-level health workers 4–6 weeks after their training in IMCI, Uganda, 1996–97 (78 IMCI-trained health workers were observed managing one sick child in 78 facilities)

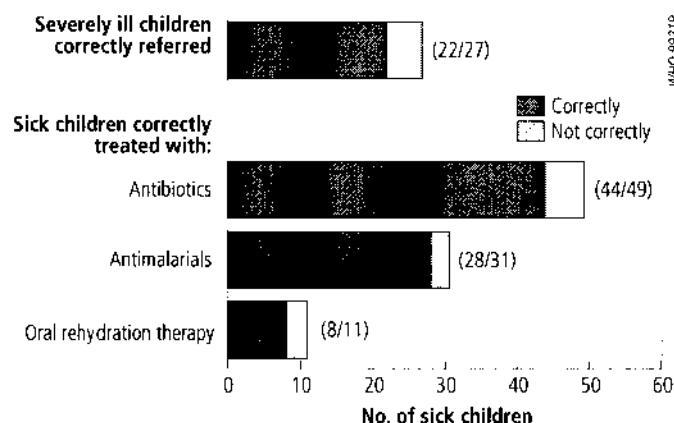
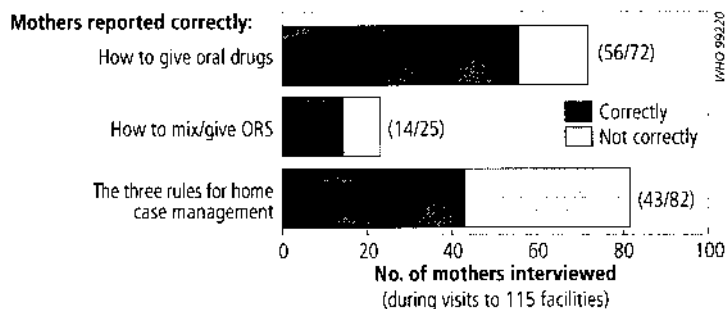


Fig. 3. Number of mothers of children treated by an IMCI-trained health worker who reported correctly how to administer the treatment when leaving the facility, United Republic of Tanzania, 1996–97 (number of mothers interviewed varied depending on whether the child received drugs and/or oral rehydration salts (ORS))



of first-level health workers have been defined and are included in Box 2.

Difficulties encountered during the first training courses by several countries included the following:

- identifying, training and maintaining participation by appropriate course facilitators;
- ensuring that an appropriate number of ill children, with an appropriate range of clinical signs, were available for clinical practice by course participants; and
- dealing with the duration and cost of in-service training courses.

Countries have developed local solutions to address these difficulties, some of which have been incorporated into the IMCI planning guidelines. For example, to ensure that participants have adequate clinical practice in the full range of IMCI classifications despite seasonal variations and the relatively rare presentation of certain conditions (e.g. severe dehydration), training course directors are asked to compensate for this by conducting group demonstrations for rare signs or classifications, and supervisors are asked to pay special attention to children with these conditions during their visits to health facilities. Further experience may yield additional solutions to this problem.

An innovative aspect of IMCI training is that it includes a follow-up visit to each health worker managing children in a first-level health facility within 4–6 weeks of training. The objectives of the visit are to help the health worker initiate IMCI in their health facility, reinforce skills learned during training, and identify and solve problems in IMCI implementation. The visit also provides an opportunity to record monitoring information.

In countries that have carried out follow-up visits, staff report that visiting trained workers can

support the transfer of IMCI skills to routine work in facilities. As shown in Fig. 2 and Fig. 3, information collected during follow-up visits suggests that health workers who have been trained in IMCI are performing well. Staff also report that the quality of IMCI implementation is higher in facilities where more than one health worker is trained in the strategy.

Early experience with IMCI implementation also indicates an urgent need for training in pre-service settings. If paramedical and medical workers leave their basic training with skills in IMCI, improved case management will be available in both public and private settings, and the costs of the training will be reduced. Several countries have begun experimenting with pre-service training. These experiences are being monitored and will serve as the basis for the development of global recommendations and, where appropriate, materials. Current recommendations for IMCI training are summarized in Box 2.

Referral care. Ensuring appropriate and timely care for severely ill children at the referral level is an essential part of the strategy. IMCI guidelines for first-level health facilities help health workers identify and refer severely ill children after administering appropriate pre-referral treatment. Health workers are also taught how to explain and help mothers to solve problems with timely referral. Issues related to referral were not fully addressed when planning for IMCI in the six countries described in this article, but problems with referral were identified during early implementation. Current recommendations are shown in Box 2. Countries and districts are now encouraged to assess possible problems in referral pathways in the early stages of IMCI planning. Guidelines on referral-level care, including recommendations for triage and emergency care, and on the management of severe malnutrition are being developed. A training course in breastfeeding counselling is already available (9) and can be used to prepare selected health workers to whom mothers with breastfeeding problems can be referred by staff trained in IMCI.

Improving health system supports for IMCI

IMCI focuses on essential elements of the health system that must be in place to ensure the effectiveness of child health interventions. Early experience with IMCI implementation led to greater awareness of the need to improve drug availability, support effective planning and management at district and national levels, and address issues related to the organization of work at health facilities. In all countries with significant experience to date, IMCI has served as a catalyst for the identification of substantial weaknesses in the public health system. More experience is needed to define how this catalytic potential can be utilized for health system improvement.

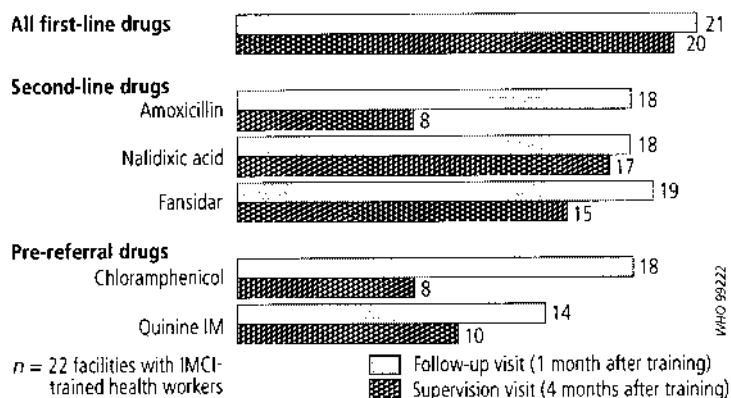
Drug availability. Effective case management requires appropriate access to drugs every day in the first-level facilities. Although IMCI requires only a limited set of drugs (e.g. from 16 to 20 in selected

Fig. 4. Essential drugs needed for the national adaptations of the IMCI guidelines for first-level facilities

	Nepal ^a	Peru ^a	Uganda	United Republic of Tanzania ^a
Oral drugs	Co-trimoxazole Amoxicillin Chloramphenicol Nalidixic acid Tetracycline	Co-trimoxazole Amoxicillin Clindamycin	Co-trimoxazole Amoxicillin Nalidixic acid Erythromycin	Co-trimoxazole Amoxicillin Nalidixic acid Ciprofloxacin Tetracycline Erythromycin
	Chloroquine Sulfadoxine- Pyrimethamine	Chloroquine Primaquine Sulfadoxine- Pyrimethamine	Chloroquine Sulfadoxine- Pyrimethamine	Chloroquine Sulfadoxine- Pyrimethamine
	Mebendazole Paracetamol Iron Vitamin A	Mebendazole Paracetamol Iron Vitamin A Salbutamol Epinephrine	Mebendazole Paracetamol Iron Folic acid Vitamin A	Mebendazole Paracetamol Iron Vitamin A
Injectable drugs	Chloramphenicol Procaine penicillin Quinine	Chloramphenicol Gentamycin Benzathine benzyl- penicillin Benzylpenicillin Quinine	Chloramphenicol Benzylpenicillin Procaine penicillin Quinine	Chloramphenicol Gentamycin Benzylpenicillin Procaine penicillin Quinine Diazepam
	Topical drugs	Tetracycline eye ointment Gentian violet	Gentian violet	Tetracycline eye ointment Gentian violet

^aThese countries also have selected furazolidone as second-line treatment for cholera and dysentery. Based on the results of recent studies, however, WHO no longer recommends this drug.

Fig. 5. Availability of selected drugs in facilities implementing IMCI (findings from follow-up and first supervision visits, Uganda, 1996–97)



national adaptations, as shown in Fig. 4), the complex and interrelated issues of drug procurement and drug distribution have proved to be a serious challenge in all countries implementing the strategy.

In the six countries collaborating with WHO, early planning for IMCI usually did not or could not fully address drug availability. Ensuring the availability of second-line treatments and pre-referral drugs has presented a special challenge in these countries. Although temporary solutions can be found, such as the use of district funds to purchase the needed drugs in limited quantities or the establishment of special distribution systems for IMCI drugs, Fig. 5 shows that these measures were

Box 3. Current recommendations for IMCI implementation: improving the health system to support IMCI**Drug availability**

- Involve national drug authorities early in IMCI planning.
- Work to have IMCI drugs included in the national Essential Drugs List and approved for use at the appropriate level of the health system by IMCI trained staff.
- Identify temporary solutions in districts starting IMCI while working for system change to improve drug availability.

IMCI planning and management

- Organize national planning for IMCI in collaboration with all ministry of health divisions and interested partners to ensure correct understanding of major steps.
- Involve districts early in the planning process. Define the roles of central and district levels in district activities.
- Help districts integrate IMCI into their development plans, building upon and strengthening existing management structures and ongoing programmes.
- Learn about supervisory systems at national and district levels and strengthen existing supervisory activities by providing training in IMCI for existing district supervisors. Seek to involve staff with good clinical skills in supervision.
- Plan and budget for strengthening or developing monitoring at district level, including how to use the information collected to solve problems and improve planning.

Organization of work at health facility level

- Assess clinic organization and job descriptions during IMCI planning to ensure that all IMCI tasks will be performed adequately (including immunization of ill children and counselling on feeding). Identify possible problems and plan for solutions.
- Consider training all health workers in a facility within as short a time period as possible.

Health information systems

- In the early stages of IMCI planning, start collaboration with the ministry of health division responsible for HIS. Based on national IMCI and HIS classifications, consider developing a table to help health workers to convert the IMCI classifications into HIS classifications.
- Develop recommendations and procedures to help health workers meet the HIS reporting requirements adequately after training in IMCI.

Health sector reform

- Identify health sector reforms under way or planned in the country.
- Educate the national authorities responsible for reforms and their involved partners about IMCI, and advocate the inclusion of IMCI as part of health sector reform efforts.
- Coordinate the implementation of health sector reforms (e.g. cost-recovery) with IMCI implementation.

not sufficient to ensure regular drug availability in Uganda. Other countries have faced similar challenges. In the future, practical strategies for improving drug availability will need to be identified. These might include links with a health information system or use of revolving drug funds.

Vigorous efforts are needed, both internationally and at the country level, to improve the availability of drugs not only for IMCI but for all first-level care. Recommendations that may help address this issue at country level are presented in Box 3.

IMCI planning and management. Although the IMCI strategy encompasses interventions at multiple levels (first-level care, referral-level care, health system, family and community), the only tools available in 1996 were the IMCI clinical guidelines and the course for the in-service training of first-level health workers. Plans for IMCI implementation in the six countries therefore focused mainly on the adaptation of the clinical guidelines and the first training activities. Early experience has demonstrated the importance of planning for implementation of the three components of the IMCI strategy from the start, even if some specific interventions may not be developed and/or implemented immediately.

Many countries have chosen to initiate planning for IMCI activities during a planning workshop. These workshops, which vary in length from two to five days, have consistent objectives across countries — i.e. the development of a concrete plan for IMCI during the early implementation period, including the adaptation of the IMCI guidelines; the selection of initial districts for implementation; the planning of training, supervision and monitoring; and the identification of steps to be taken to ensure that the drugs, supplies and other health system supports needed for IMCI are in place in the districts involved. Throughout the planning process, emphasis is placed on the need to recognize and build upon existing structures and programmes and to involve other relevant sectors as needed.

The involvement of district staff early in the planning process was limited in the six countries. Experience has shown that strong district capacity and a clear definition of the roles of central and district levels in IMCI activities are critical. District staff should be involved in IMCI planning as early as possible. Central-level involvement in IMCI district activities, although highly recommended during the

Table 1. Topical list of key indicators for IMCI

Health worker skills	
Assessment	Child is checked for four general danger signs. Child is checked for the presence of cough, diarrhoea and fever. Child's weight is checked against a growth chart. Child's vaccination status is checked.
Correct treatment and counselling	Carer of under-2-year-old child is asked about breastfeeding and complementary foods. Child needing referral is referred. Child needing oral antibiotic and/or an antimalarial is prescribed the drug(s) correctly. Carer of the sick child is advised to give extra fluids and continue feeding. Child leaves the facility with all needed vaccinations. Carer of the child who is prescribed oral rehydration salts and/or oral antibiotic and/or an antimalarial can describe how to give the treatment.
Health system support for IMCI	
Supervision	Health facility has received at least one supervisory visit that included observation of case management during the previous 4 months.
Drugs, equipment and supplies	Health facility has all the essential equipment and materials for IMCI. Health facility has all the essential drugs available for IMCI. Health facility has the equipment and supplies to provide full vaccination services.
IMCI training coverage	Health facility has at least 60% of its health workers who manage children trained in IMCI.
Carer's satisfaction^a	This has to be determined at country level.
Family and community practices^a	
Nutrition	Child <4 months of age is exclusively breastfed. Child aged 6–9 months receives breast milk and complementary feeding. Child under 2 years of age has a low weight for age.
Prevention	Child 12–23 months of age is vaccinated against measles before 12 months of age. Child sleeps under an insecticide-treated net (in malaria risk areas).
Home case management	Sick child is offered increased fluids and continued feeding.
Care seeking	Child with fever receives appropriate antimalarial treatment (in malaria risk areas). Carer knows at least two signs for seeking care immediately.

^a More indicators are being developed and require agreement.

first district training, is unlikely to be sustainable in the longer term.

Although important for sound planning, reliable cost estimates for IMCI activities were extremely difficult to obtain in the six countries. Many IMCI interventions benefit the overall health system, and the portion of the cost attributable to IMCI is not always easy to determine. Operations research has documented large potential savings related to drugs with the introduction of IMCI (10, 11). Further investigations of the costs of implementing IMCI are being planned.

Supportive supervision is assumed to have a positive effect on the sustainability of health workers' performance over time, but is a challenge in many countries. The IMCI strategy recommends that district-level supervisors be trained in the strategy and its facilitation techniques, and that they be involved in the follow-up visits to health workers after training. In most settings, however, supervisors are responsible for multiple programme activities and do not always have clinical skills, and it will be a continuing challenge to incorporate IMCI into their existing supervisory activities.

In the six countries collaborating with WHO, IMCI monitoring at district and national levels was limited to the collection of monitoring information

during training and follow-up visits to health workers after training. Based on first experiences, the overall approach to IMCI monitoring has been simplified and a limited set of key indicators defined (see Table 1). Experience has indicated the need for a balance between the primary objectives of any visit to health workers (assisting and reinforcing the health worker, and solving problems) and the need to collect and use monitoring information. Current recommendations on planning and managing IMCI activities are presented in Box 3.

Organization of work at health facility level.

Countries have learned through visits to trained health workers that the organization of tasks at the health facility may make it difficult for children to receive the full scope of IMCI care. In larger facilities, often located in urban settings, IMCI tasks may be performed by several different workers. It is common, for example, for one worker to be responsible for weighing the child and taking a history, a second to assess and classify the child, and a third (often in a dispensary) to provide drugs and counsel the carer. Although the IMCI guidelines recommend training within as short a time as possible all health workers who manage children, the available training course is inappropriate for some of the lower-level workers who perform only selected tasks.

Among the options to address this issue that are being explored at both country and global levels are the following: expanding the role of the IMCI-trained health worker to include the training of selected co-workers (e.g. those who dispense drugs); and conducting specially tailored training for cadres of workers who perform specific IMCI tasks. Current recommendations on addressing the organization of work at health facility level are presented in Box 3.

Health information systems (HIS). The implementation of IMCI in countries has shown some inconsistencies between the IMCI classifications and the disease categories used in routine reporting. Differences in the IMCI and HIS classifications may confuse health workers and adversely affect the implementation. In some countries those responsible for HIS have changed their reporting categories or included some of the IMCI classifications in the existing HIS; others were not able to do this, and are now training health workers to transform the IMCI classifications into existing HIS categories. Some countries are also considering the modification of patient registers. Each country will need to address this issue during planning and early implementation of IMCI. WHO is developing recommendations on options to link the IMCI classifications to HIS (12). The current recommendations on IMCI and health information systems are presented in Box 3.

IMCI and health sector reform. Health sector reforms in many countries now include the decentralization of management and services, introduction of policies recommending the delivery of a minimum package of services in first-level facilities, introduction of cost-recovery mechanisms, and redistribution of activities between the public and private sectors. At the end of 1998, 29 countries had included IMCI in health reform projects supported by the World Bank. Current recommendations on IMCI and health sector reform are shown in Box 3.

Improving child care at family and community levels

No strategy for improving child health and development will be effective unless it addresses the behaviour of families and communities. The IMCI strategy builds on the experiences with CDD and ARI and seeks to identify and strengthen ongoing community-based actions aimed at improving child health and nutrition. Early implementation of IMCI was focused on improving health workers' skills. The lessons learned through this experience will be valuable in implementing efforts directed towards families and communities.

The IMCI guidelines for first-level care are designed to improve communication with mothers. The adaptation process includes the identification of appropriate local terms and culturally appropriate feeding recommendations. During training in IMCI, health workers are taught the fundamentals of counselling and practise these skills under super-

vision. An important aspect of IMCI is its focus on nutrition. Every child receives a nutritional assessment and, when appropriate, the carers are given individual advice and counselling on the proper feeding of the child at home, including breastfeeding.

Anecdotal reports from all countries implementing training indicate that the quality of interactions between health workers and carers has improved after IMCI training, and that the carers are responding positively to this change. For example, the results from exit interviews with 66 carers in Peru suggest that mothers benefit from the services they receive and are, in general, satisfied with them (Fig. 6). This information must be interpreted with caution. Several studies have shown that the reports from carers of overall satisfaction with the services received are not associated with return rates or the objective quality of these services (13, 14).

Some countries report significant increases in service utilization on days when or in facilities where health workers trained in IMCI are working. Anecdotal supervision reports indicate that the carers are pleased and surprised by the health workers' interest in their feeding practices, health problems, and ability to comply with instructions. The simple cards designed to support communications with mothers are highly appreciated by both health workers and carers, and are now being used by health workers whether or not they have already been trained in IMCI. Formal documentation of these effects is being planned.

Early experience has heightened awareness of the need to plan and implement other interventions targeting family and community behaviours relating to child health. One immediate step that can be taken, once the IMCI guidelines have been adapted, is to ensure that existing and future activities in community education and behaviour change are consistent with the messages included in the adapted IMCI guidelines. Countries are now encouraged to prioritize issues that should be addressed to improve care-seeking behaviour and to include these priorities in their national IMCI strategy. UNICEF has taken the lead in coordinating the IMCI work relating to child care at family and community levels.

In conclusion, IMCI in the community must not be implemented as a new and separate initiative. Existing community-based child health and nutrition programmes will be among the major entry points for IMCI. Some recommendations for improving family and community practices related to IMCI are presented in Box 4.

Third phase: expansion of IMCI

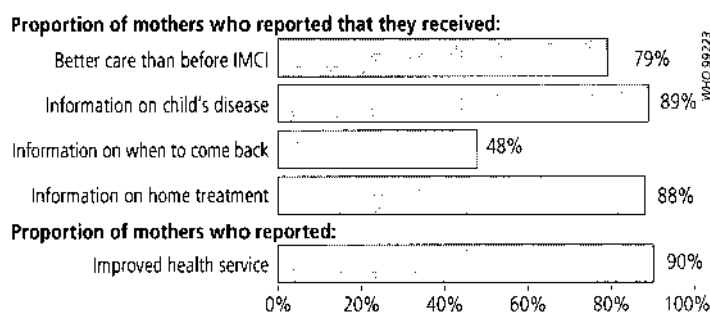
The phase of IMCI expansion includes efforts to increase access to interventions initiated during the early implementation phase and to broaden the range of IMCI interventions. The current recommendation is for the IMCI working group and key partners to develop medium-term plans for moving forward with

the strategy, based on reviews of early experience. In this phase, problems identified during early implementation are addressed, priorities for interventions are agreed upon, and strategies for expanding access while maintaining quality are developed.

By the end of 1998, nine countries (Bolivia, Brazil, Dominican Republic, Ecuador, Nepal, Peru, Uganda, United Republic of Tanzania, and Zambia) had entered the expansion phase. A number of other countries will reach this phase in 1999 and are meeting the challenges of expansion, based on the experience gained during implementation. Some of the most important challenges facing countries (see Box 5) are discussed below.

- One important challenge will be to build district ownership and capacity for IMCI planning and management, including the strengthening of routine monitoring and the negotiation and advocacy skills needed to mobilize resources for child health. IMCI staff at the central level will have to find sustainable ways to support districts as they move forward with implementation of the strategy. Concrete recommendations on effective ways to do this must wait until further experience has been accumulated.
- A second challenge will be to develop a sustainable organizational structure for IMCI at the national level. The recommendation to create an IMCI working group during the introduction and early implementation phases is based on an assumption that ministries of health have to be familiar with the IMCI strategy and its implications for child health programming before undertaking structural or organizational changes. Within a very short time, however, each country will face difficult decisions about how best to provide a leadership and management structure that will support effective implementation. Several countries that have moved from early implementation to the expansion phase have already recognized that there is an urgent need for this high-level structural change.
- A third challenge will be to determine an appropriate pace for expansion, which meets the need for a rapid increase in access while maintaining the quality of the interventions. Several countries are facing pressure from their ministries of health, from donors, and from districts to expand IMCI implementation rapidly. In some countries, the districts have identified their own resources for IMCI implementation. For ministries of health that are now moving

Fig. 6. Mothers' reports of services and satisfaction (findings of IMCI follow-up visits, Peru, 1997)



n = 66 mothers interviewed when leaving a facility implementing IMCI

through the period of early implementation, there has not been enough time to strengthen central-level capacity to support district planning and implementation or to establish monitoring and evaluation plans. Districts and ministries of health will need to resist pressures to expand training coverage rapidly, if they cannot give adequate emphasis to the other two critical components in the strategy — improving health system support for IMCI and improving child care at family and community levels. This pressure may lessen with further experience and as countries develop and use additional district-level planning tools.

- A fourth challenge will be to incorporate IMCI into ongoing district and national efforts to improve child health, and to link it with other health initiatives. Efforts have begun at the global level to link IMCI with the Safe Motherhood Initiative, by developing consistent approaches for delivering care and training providers. Interventions to improve breastfeeding counselling practices have been made fully consistent with IMCI, and countries are encouraged to engage in joint planning for their IMCI and breastfeeding activities.
- A fifth and final challenge will be to demonstrate the cost-effectiveness of IMCI as a service delivery strategy for child health. This is the objective of a global evaluation effort consisting in a set of studies linking efficacy and effectiveness in several countries (15).

Conclusions

Early experiences with IMCI prove that this strategy is feasible at district level and that it is welcomed by

Box 4. Current recommendations for IMCI implementation: improving child care at family and community levels

- Existing community-based child health and nutrition programmes should be utilized in the implementation of IMCI in the community.
- When developing the national IMCI strategy, one has to identify, prioritize and plan the implementation and evaluation of community interventions to improve care-seeking and home-care practices.
- Appropriate messages consistent with the IMCI strategy should be developed by building on CDD, ARI, and nutrition information and education materials, as well as on local terms and feeding recommendations formulated during the IMCI adaptation process.

Box 5. Challenges in IMCI expansion

- Building district-level capacity and ownership for IMCI implementation.
 - Making structural changes within the ministry of health to support IMCI.
 - Responding to pressures for rapid increases in training coverage, while maintaining the quality and broad scope of IMCI interventions.
 - Incorporating IMCI into ongoing district and national efforts to improve child health, and linking it with other health initiatives (e.g. Safe Motherhood Initiative).
 - Demonstrating the cost-effectiveness of the IMCI strategy.
-

many countries undergoing health sector reforms. There is therefore a high level of interest in countries and international agencies.

Introduction of the IMCI strategy presents an opportunity for countries to develop or update their national policies for the case management of sick children. Implementation of the strategy, which brings together a broad range of programmes and national medical expertise relating to child health, has served as a catalyst for the identification of substantial weaknesses in the public health system in some countries. ■

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Résumé**Prise en charge intégrée des maladies de l'enfant : récapitulatif des premières données d'expérience**

La stratégie relative à la prise en charge intégrée des maladies de l'enfant (PCIME) vise à réduire la mortalité et la morbidité juvéniles dans les pays en développement en associant une prise en charge améliorée des maladies courantes de l'enfant à une nutrition et une vaccination appropriées. La stratégie est d'abord axée sur l'élaboration de lignes directrices cliniques intégrées et d'un module de formation à l'intention des agents de santé qui prennent en charge les enfants dans les établissements de premier recours, ensuite sur l'élargissement d'interventions à la fois préventives et curatives afin de favoriser la santé et l'épanouissement de l'enfant. La stratégie PCIME comprend des interventions visant à perfectionner les agents de santé, le système de santé et les pratiques familiales et communautaires. Cet article décrit l'expérience acquise par les premiers pays à avoir mis en œuvre la PCIME, l'enseignement qu'ils en ont tiré et comment celui-ci a permis d'élargir la stratégie en question.

L'article comprend trois parties. La première décrit l'introduction de la PCIME, y compris les démarches qui permettent aux ministères de la santé de décider s'il faut poursuivre ou non l'application de la stratégie, les structures gestionnaires créées pour la PCIME et les partenaires intéressés. La deuxième traite de la phase anticipée de mise en œuvre, au cours de laquelle les pays planifient et préparent l'application de la PCIME, adaptent les lignes directrices cliniques générales à leur propre situation épidémiologique, entreprennent les

premières activités liées à la PCIME dans un nombre limité de districts, et étudient de près les données d'expérience qu'ils ont obtenues et sur lesquelles s'appuiera la mise en œuvre proprement dite. Le dégagement d'un consensus au sujet de l'adaptation des lignes directrices cliniques est indispensable au succès de la PCIME dans un pays donné. Parmi les autres questions essentielles se trouvent la place de la PCIME dans les réformes du secteur de la santé en cours, l'existence de médicaments essentiels, les voies d'orientation-recours, la supervision, l'organisation d'activités dans les établissements de santé, le suivi et les systèmes d'information sanitaire. La troisième partie décrit les efforts déployés par les pays pour améliorer l'accès aux interventions entreprises au cours de la phase anticipée de mise en œuvre et élargir la gamme des interventions de la PCIME.

Les principaux problèmes liés à l'amélioration de la PCIME et aux stratégies relatives à la croissance et au développement de l'enfant dans un proche avenir font également l'objet d'un examen. Il s'agit de donner les moyens et les capacités voulus concernant la planification et la gestion de la PCIME aux niveaux districtal et national, d'accroître la couverture tout en maintenant la qualité et la vaste portée de la stratégie PCIME, et d'intégrer celle-ci dans les mesures prises aux niveaux districtal et national pour améliorer la santé de l'enfant. Enfin, l'OMS a pris la tête d'une initiative collective visant à évaluer l'impact mondial de la stratégie PCIME.

Resumen

Atención integrada a las enfermedades prevalentes de la infancia: resumen de las primeras experiencias

La estrategia de Atención Integrada a las Enfermedades Prevalentes de la Infancia (AIEPI) aspira a reducir la mortalidad y la morbilidad infantiles en los países en desarrollo combinando un mejor manejo de enfermedades comunes de la infancia y una nutrición e inmunización adecuadas. El objeto primordial de la estrategia es ante todo el desarrollo de directrices clínicas integradas y de un módulo de adiestramiento para los agentes de salud que tratan a los niños en los establecimientos de salud del primer nivel, pero también la ampliación de intervenciones tanto preventivas como curativas de promoción de la salud y el desarrollo del niño. La estrategia de AIEPI incluye intervenciones encaminadas a mejorar las aptitudes de los agentes de salud, el sistema de salud y las prácticas familiares y comunitarias. En este artículo se describen la experiencia de los primeros países que han aplicado la AIEPI, las lecciones aprendidas y el uso que se ha hecho de esas lecciones para formular una estrategia de AIEPI más amplia.

El artículo consta de tres partes. En la primera se describe la introducción de la AIEPI, haciéndose referencia a las medidas adoptadas para ayudar a los ministerios de salud a tomar la decisión de aplicar o no la estrategia, a las estructuras de gestión creadas para la AIEPI y a los interlocutores implicados. La segunda trata de la fase inicial de ejecución, durante la cual los países planifican y preparan la puesta en marcha de la AIEPI, adaptan las directrices clínicas genéricas a la situación

epidemiológica nacional, llevan a cabo las primeras actividades de la AIEPI en un número limitado de distritos y vigilan atentamente sus experiencias como base para la ejecución futura. La creación de consenso respecto a las directrices clínicas adaptadas es decisiva para el éxito de la AIEPI en un país. Otros aspectos cruciales son el lugar de la AIEPI en el marco de las reformas en curso del sector de la salud, la disponibilidad de medicamentos esenciales, los circuitos que conducen a la atención de referencia, la supervisión, la organización del trabajo en los establecimientos de salud, la vigilancia y los sistemas de información sanitaria. En la tercera parte se describen los esfuerzos desplegados por los países para aumentar el acceso a intervenciones emprendidas durante la fase inicial de ejecución y para ampliar la gama de intervenciones de la AIEPI.

Se examinan también los retos principales con miras a mejorar la AIEPI y las estrategias de crecimiento y desarrollo de los niños en un futuro próximo. Ello incluye el fomento de un sentimiento de apropiación y de capacidad para la planificación y la gestión de la AIEPI a nivel distrital y nacional; una mayor cobertura, manteniendo la calidad y el amplio alcance de la estrategia de la AIEPI, y la incorporación de la AIEPI en los esfuerzos distritales y nacionales en curso destinados a mejorar la salud infantil. Por último, la OMS está dirigiendo un esfuerzo colaborativo para evaluar la repercusión mundial de la estrategia de AIEPI.

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