Integrated Management of Childhood Illness (IMCI)

Twelve million children under five years of age in developing countries die each year before their fifth birthday and many of these die during the first year of life. Seventy per cent of these deaths are due to five common, preventable and easily treated childhood diseases, namely acute respiratory infections, diarrhoea, measles, malaria, and malnutrition or combinations of all five. Furthermore, these same five diseases account for three-quarters of all childhood mortality. The historical response of international public health bodies and funding agencies to this excessive morbidity and mortality has been to develop disease-specific vertical control programmes. The Expanded Programme of Immunisation (EPI) was founded by the World Health Organization in 1977 and has substantially enhanced global vaccination coverage with subsequent major reductions in the incidence of the six main vaccine-preventable diseases. Following the success of oral rehydration therapy in the management of cholera, the Control of Diarrhoeal Disease programme (CDD) was established in 1980 with the twin objectives of reducing mortality from diarrhoeal disease through the timely identification of the signs of dehydration and implementation of rehydration therapy, and the reduction of the incidence of diarrhoea through public health measures. In 1985 the Control of Acute Respiratory Infection programme (ARI) was added to these vertical strategies, with standardized case management as its main theme.

These three programmes have been widely implemented across all corners of the developing world with WHO technical support and UNICEF sponsorship. National programme managers and their teams have been appointed within Ministries of Health and management structures, along with their targets and implementation plans, put in place. Large numbers of health workers from central hospital staff down to rural community health workers have been trained through practical workshops to recognize the key signs of dehydration and to look for chest indrawing and fast breathing and then to implement a correct treatment and plan of follow-up. The well known WHO case management charts with their characteristic colour-coded triage of patients and the 'Assess, Classify, Treat, Advise, and Follow-up' schemata are frequently seen decorating the walls of even the most remote clinic in Africa, Latin America, or Asia.

Undoubtedly this disease-specific approach has been successful in reducing mortality rates from both diarrhoea and acute respiratory infections. However, the vertical nature of these programmes has limited their effectiveness in overcoming the major child health problems in developing countries. Within ministries of health, parallel management structures for each disease-specific programme have developed often in competition for the same budgets to cover equipment, drugs, and training. Health workers may frequently be called away from their posts for different training workshops and may then be supervised by several disease-specific middle level managers. Even much needed donated vehicles may only be used for a particular disease programme. The World Health Organization has also been criticized about the rigidity of its programme content which, though based on an expert consensus, has not always reflected national priorities or local approaches, for example the controversy about the use of home-based sugar/salt solution instead of the widely promoted packets of oral rehydration salts.

In their clinical work, health workers have often found that many sick children do not easily fit into the diagnostic categories and are often misdiagnosed, despite training in these case management protocols. Children also often present with multiple symptoms and have underlying malnutrition as well, or their symptoms may not be specific for one disease, for example a child with cough and fast breathing may have pneumonia, severe anaemia, or malaria or a lethargic child may have severe dehydration, meningitis, severe pneumonia, or cerebral malaria. An integrated approach to managing sick children is therefore required, which will assess the whole child and combine therapies for several conditions rather than concentrating on individual diseases.

The newly developed WHO Integrated Management of Childhood Illness strategy (IMCI) is therefore to be welcomed. There are three components to the IMCI strategy:

- improvements in the health system required for effective management of childhood illness such as essential drug supplies;
- improvements in family and community practices.

This strategy combines improved management of childhood illness, using the standardized case management protocols derived from the former CDD and ARI programmes, with aspects of nutrition, immunization, and disease prevention to reduce mortality from common childhood diseases and to reduce their frequency and severity, thereby promoting child growth and development. The interventions aim to improve practices in both health facilities and the home. Currently, the interventions included in the strategy are given in Table 1.

Since the launch of the strategy in 1995, 40 countries...
Table 1

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<tr>
<th>IMCI interventions</th>
<th>Curative care</th>
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<tbody>
<tr>
<td>Health promotion</td>
<td>Early case management at home</td>
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<tr>
<td>Insecticide-impregnated bed nets</td>
<td>Appropriate care seeking</td>
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<tr>
<td>Vaccination</td>
<td>Treatment compliance</td>
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<tr>
<td>Breastfeeding counselling</td>
<td>Standardized case management</td>
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<tr>
<td>Micronutrient supplementation</td>
<td>Iron therapy and de-worming</td>
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Worldwide have undertaken the early phases of implementation, notably Indonesia, Nepal, Peru, The Philippines, Uganda, Tanzania, Zambia, and Viet Nam. A number of other countries are considering the necessary adaptation of management structures and the new training required. Significantly, the WHO has learnt from past experience and now emphasizes the need for local adaptation of the generic guidelines and training materials to suit national needs, priorities, and epidemiology, such as differing choices for antibiotic treatment of dysentery and pneumonia according to local availability and drug sensitivity, use of laboratory facilities for diagnosis of malaria, inclusion of dengue haemorrhagic fever, use of local terms to describe common symptoms, and inclusion of HIV-related illnesses.

One of the key components of the IMCI strategy is an integrated case management training course for first-line health workers. This course is well supported with written materials, videos, and extensive wall charts similar to those developed for the CDD and ARI programmes. It lasts for a full 11 days, combining classroom work with hands-on clinical practice to teach effective case management. A course of this duration may cause difficulty with finances and begs the question of the maintenance of staffing levels in clinics in the absence of the course participants. Whilst the patient-based clinical training component is a very welcome innovation, training may have to be carefully timed to allow adequate 'clinical material' to be available, as the diarrhoea and pneumonia 'seasons' may not coincide. Furthermore, such training courses can only be held at very busy central hospitals, thereby seriously limiting the number of trainees. In less busy district settings and in countries with a functioning referral pyramid, finding adequate numbers of suitable patients for demonstration and clinical practice may be problematic. Alternative training strategies such as distance learning or part time courses need to be considered. Materials for pre-service training in IMCI for medical students and student nurses are being developed.

Evaluation of the effectiveness of IMCI in reducing childhood deaths, reducing illness, and promoting health and development is awaited. The World Bank has estimated that the appropriate management of common childhood infections and malnutrition is among the most cost-effective interventions and is likely to have the greatest impact in reducing the global burden of disease.7 However, by its own admission, the IMCI strategy, by its concentration on case management, does sidestep the overriding issues of poverty and global maldistribution of resources which continue to be the root cause of much of the excessive childhood morbidity and mortality in the developing world (and indeed in the developed world as well).8

Further information about IMCI can be obtained from the World Health Organization Division of Child Health and Development (CHD) web site at <http://www.who.ch>.

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References