

Improving Child Health

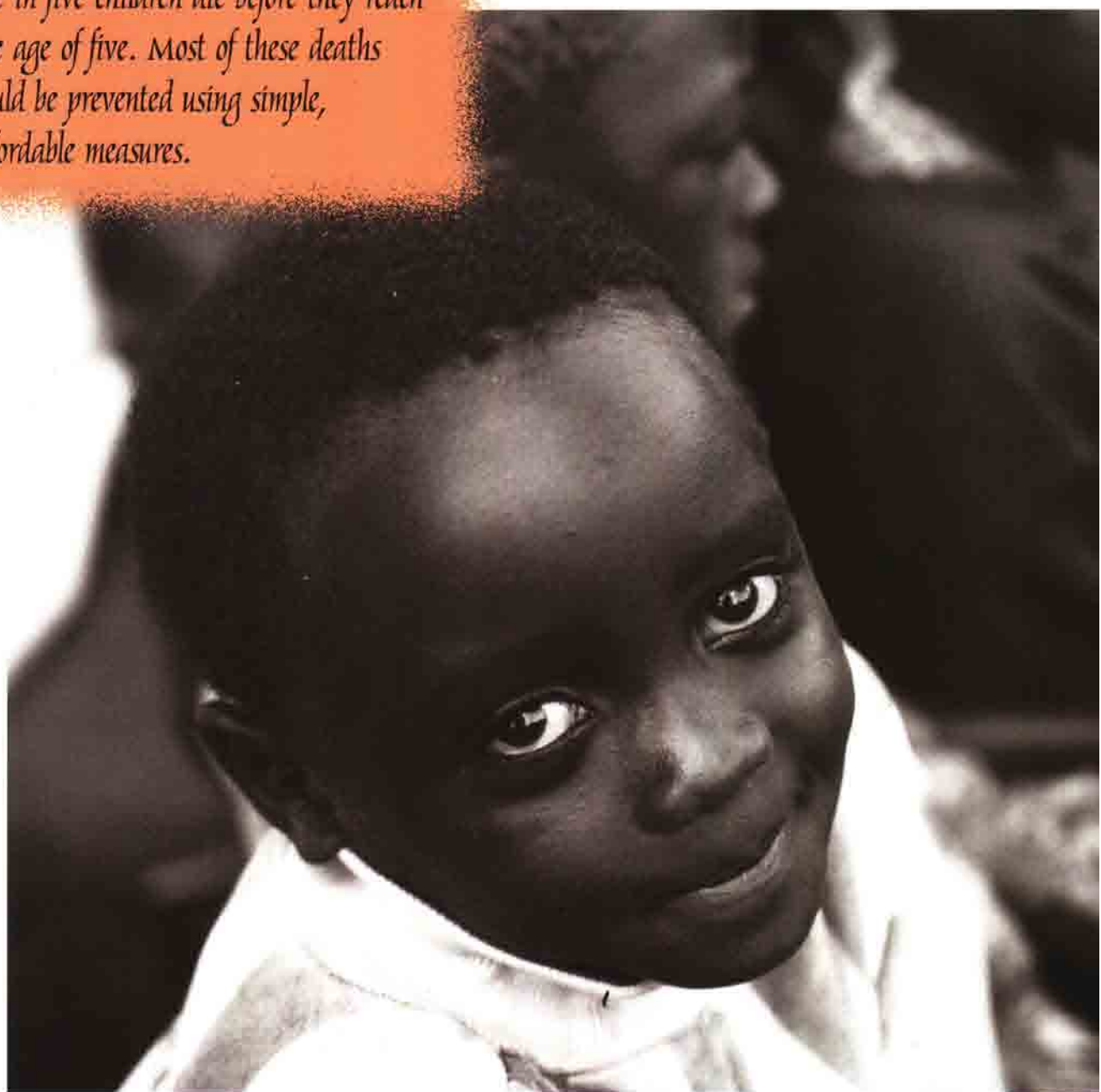


IMCI: the integrated approach



Division of Child Health and Development
World Health Organization

*In some developing countries,
one in five children die before they reach
the age of five. Most of these deaths
could be prevented using simple,
affordable measures.*



Each year, more than eleven million children die from the effects of disease and inadequate nutrition. In some countries, more than one in five children die before they reach their fifth birthday. Many of the children who do survive are unable to grow and develop to their full potential.

But the toll of human suffering that these figures represent could be vastly reduced. There are just five causes for the deaths of most children under five – pneumonia, diarrhoea, malaria, measles and malnutrition – and it is within our knowledge and capability to prevent or treat all of them.

Most children in the developed world have ready access to the simple and affordable care that keeps them healthy and able to reach their full potential. Most children in the developing world do not. WHO's Division of Child Health and Development (CHD), is at the forefront of a renewed effort to improve the health prospects of *all* the world's children.

Over the past five years, CHD and its international partners have been devising and testing new strategies, new approaches, to redress the imbalance of health equity. The result is a strategy known as Integrated Management of Childhood Illness (IMCI) and it is this strategy that is explained in the following pages.

The IMCI strategy is an active move to give effect to the articles of the United Nations Convention on the Rights of the Child that deal with the right to health and health care. The strategy recognizes that children, whether healthy or sick, should not be considered in isolation from their social context. It emphasizes, therefore, the importance of improving relevant family and community practices, as well as care provided through the health system, to give more children the chance to grow into healthy, productive adults.

The time is right to ensure quality health care for our most vulnerable children and their families, wherever they may live. We must apply what we know with energy and commitment.



A New Approach to Treating Sick Children

2.

Seven out of ten childhood deaths in developing countries can be attributed to just five main causes, or often some combination of them. And around the world, three out of every four children who seek health care are suffering from at least one of these conditions:

Pneumonia – Children all over the world suffer from frequent coughs and colds but in developing countries these are often associated with life-threatening pneumonia, the leading cause of death in children under five.

Diarrhoea – Diarrhoea is extremely common and may be life-threatening because of the dehydration and malnutrition it causes if it goes untreated. Diarrhoea is the second most common cause of death in children.

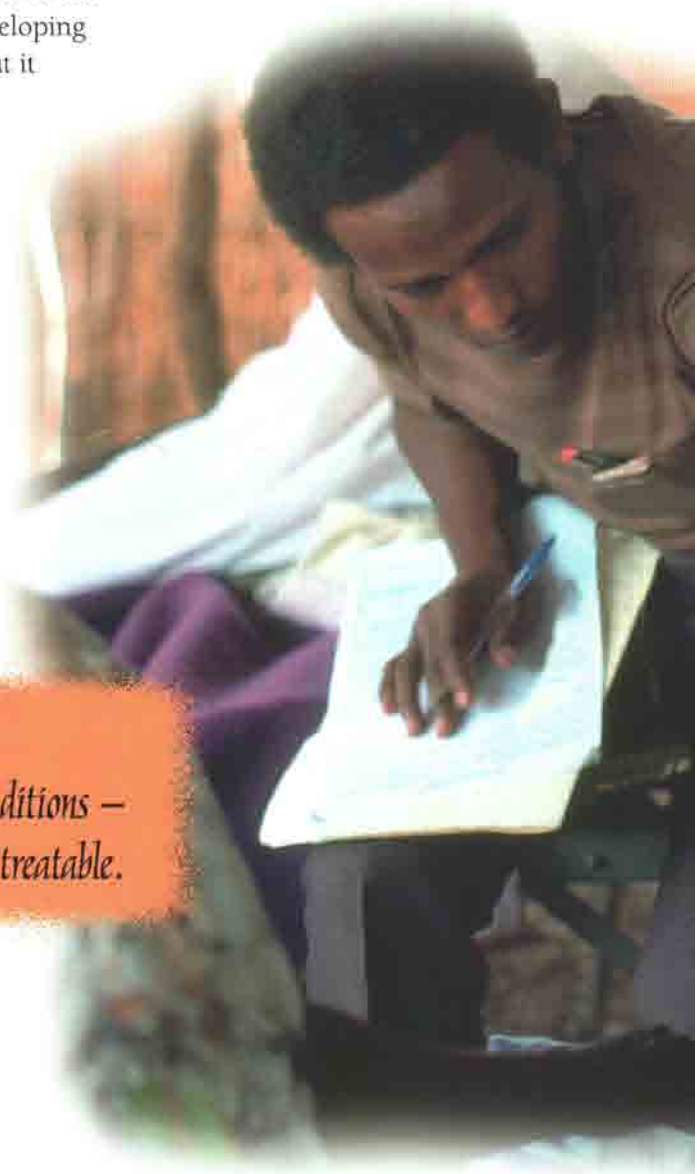
Malaria – Most of the deaths due to this widespread disease occur among African children.

Measles – Vaccines have made this disease rare in the industrialized world. Its occurrence in developing countries has also been rapidly reduced but it still claims the lives of 800,000 children each year.

Malnutrition – One in four children in the developing world suffers from malnutrition. As well as the misery of constant hunger, malnourished children are far more likely to succumb to infections.

All five of these conditions can be treated or prevented. Despite this fact, 23,000 children die from them each day.

*70% of childhood deaths
are caused by just five conditions –
all of them preventable or treatable.*



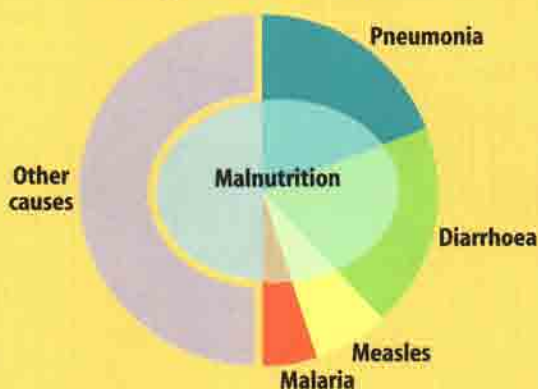
A need for change

These serious threats to children's health have been difficult to control for a number of reasons. Inadequate living conditions, including poor water supply, hygiene, and overcrowding, promote the rapid spread of disease. And when children are sick, they face further problems. Parents may not recognize that their children are dangerously ill or take them for appropriate treatment. Even when treatment is sought at a health care facility, it may fall short of what is required. Health workers may lack training or the right drugs and equipment to provide good care. And health workers frequently do not recognize that a child may have more than one condition in need of treatment.

Harmful practices compound the problem. Certain traditional treatments may be dangerous or inappropriate. Drugs are regularly used excessively and in dangerous combinations. Poor feeding practices and the use of breastmilk substitutes heighten the risk of infection and death in babies and young children.

During the past 15 years, much has been learned from WHO's individual disease control programmes. However, addressing more effectively the combination of factors that threaten child health required innovation and change. The WHO's Division of Child Health and Development is coordinating a new initiative, drawing on the skills and experience of ten other WHO programmes and UNICEF. The result of this collaboration has been a revolutionary new strategy that focuses on the child as a whole rather than on a single disease or condition. This strategy, known as Integrated Management of Childhood Illness (IMCI), is at the core of WHO/CHD's efforts to reduce childhood mortality and significantly improve children's health in the developing world.

Causes of 11.6 million deaths among children under five, 1995



Four infectious diseases – pneumonia, diarrhoea, malaria and measles – cause one half of all deaths of children under five. Many of these children also suffer from malnutrition, a causative or contributory factor in an estimated 54% of child deaths, bringing the total deaths due to these five conditions to 70%.

Focusing on the Whole Child

Why an integrated approach?

Children brought for medical treatment in the developing world are often suffering from more than one condition, making a single diagnosis impossible. Such children often need combined therapy for successful treatment. Furthermore, they may be put at further risk because parents often fail to recognize when their children are seriously ill and do not seek urgent medical attention.

An integrated strategy takes into account the variety of factors that put children at serious risk. It ensures the combined treatment of the major childhood illnesses, it speeds urgent treatment of seriously ill children, it involves parents in the effective care of their children at home wherever possible, and it emphasizes prevention of disease through immunization, improved nutrition and exclusive breastfeeding.

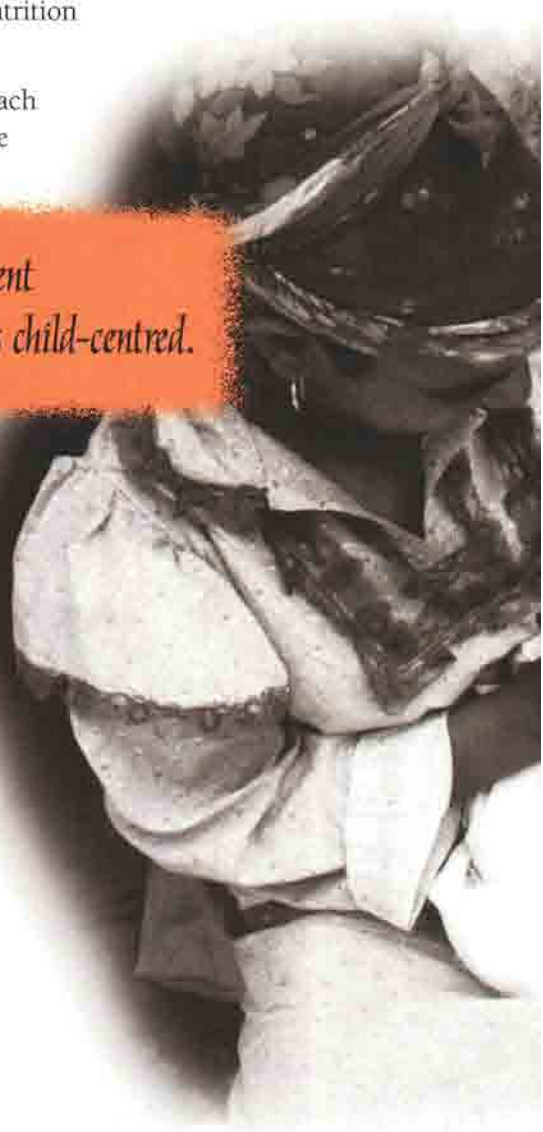
Such an integrated strategy is a highly cost-effective approach to the management of childhood illness. It reduces wastage of resources by identifying and promoting the most appropriate medicines and treatments and it avoids the duplication of effort that may occur in a series of separate disease control programmes.

*Integrated Management
of Childhood Illness is child-centred.*

A single diagnosis may be inappropriate for many sick children

Presenting complaint	Possible cause or associated condition
Cough and/or fast breathing	Pneumonia Severe anaemia <i>P. falciparum</i> malaria
Lethargy or unconsciousness	Cerebral malaria Meningitis Severe dehydration Very severe pneumonia
Measles rash	Pneumonia Diarrhoea Ear infection
"Very sick" young infant	Pneumonia Meningitis Sepsis

IMCI teaches health workers to respond to the child's condition in all its complexity. For example, a child with measles may also have diarrhoea or pneumonia, compounded by dehydration and malnutrition.



Integrated Management of Childhood Illness is an effective, low-cost strategy for improving child health, highly appropriate to developing country contexts. It promotes :

- ▶ *Prompt recognition and treatment of all co-existing conditions*
- ▶ *Rapid and effective treatment through standard case management*
- ▶ *Prevention of illness, through improved nutrition including breastfeeding, and vaccination*

5.

How it works in practice

At the heart of WHO/CHD's new integrated strategy is the treatment, or case management, of the five most common causes of childhood death. New integrated standard treatment guidelines have been devised to enable health

workers to assess sick children by observing easily recognizable signs. The health worker uses a colour-coded triage system to classify the condition of the child according to whether she needs urgent referral for more specialized assessment and care, medical treatment on the spot, or whether advice on home management should be given. Parents are also advised to watch for danger signs that mean they should return for further treatment, and the health worker checks on immunization and nutritional status and provides counselling on feeding.

In parallel with improved treatment of sick children, WHO/CHD's new approach stresses prevention and the vital role the home environment plays in child health. A number of interventions have been devised to educate and inform parents and the wider community, and to help create the conditions that will give children a better chance of growing to healthy adulthood.

Investing in health

This new integrated approach to the management of childhood illness does not mean that health workers cease to treat individual diseases. Rather, they must broaden their approach to consider and respond to the condition of the whole child, to the number of *different* factors that could be contributing to her sickness. To make this new approach work demands a degree of innovation and flexibility throughout existing child health services, but the 1993 World Bank Development Report, *Investing in Health*, estimates that this new strategy has the potential for the greatest impact on the global burden of disease. The same World Bank Report ranks the strategy among the ten most cost-effective health interventions in both low and middle income countries.



Pneumonia: The greatest challenge

6. **A**cute respiratory infections (ARI) kill over two million children under five annually. Up to 40% of all children seen in health clinics are suffering from them and many deaths attributed to other causes are, in fact, 'hidden' ARI deaths.

Pneumonia is the most serious of these common infections and the worst danger, therefore, to childhood health. One in three hospital admissions of children in developing countries is due to pneumonia which places an intolerable burden on already stretched outpatient and hospital services.

The correct management of pneumonia could save over a million lives per year.

With correct management, pneumonia need not be such a serious threat to children's lives. WHO/CHD's approach enables health workers to make rapid, accurate and life-saving

decisions. Using standard case management techniques, 70% of lives currently being lost to acute respiratory infections could be saved.

In most cases, pneumonia can be effectively treated with low-cost oral antibiotics. The problem is that children die very quickly from the infection and need treatment urgently. Health workers following the WHO/CHD approach learn the importance of classifying the severity of respiratory infections by observing the child for two key signs of pneumonia – chest indrawing and fast breathing – and decide whether the child can be treated on the spot or needs urgent referral. They are also aware that children suffering from other conditions, such as malnutrition or measles, are particularly susceptible to pneumonia. An integrated approach ensures that health workers are on the lookout for the early signs of the disease to ensure rapid treatment.



Pneumonia needs urgent treatment. Health workers learn to identify the disease by watching for easily recognizable signs. This baby shows signs of chest indrawing, a sign of pneumonia. Rather than expanding when the baby takes a breath, the lower chest is pulled inwards.

Reducing the death toll from pneumonia in developing countries demands :

- ▶ Prompt recognition of pneumonia
- ▶ Rapid treatment with antibiotics
- ▶ Rapid referral of the most serious cases
- ▶ Improved home management
- ▶ Prevention through immunization, reduced indoor air pollution, and improved nutrition, including breastfeeding

7.

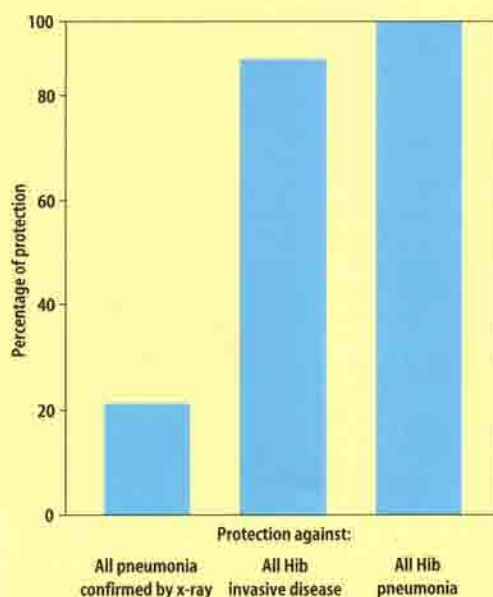
Such prompt recognition and treatment of pneumonia enables more children to be treated at home. Parents are encouraged not to delay seeking treatment for sick children, and much emphasis is placed on counselling parents to ensure they know how to care for their children, how to give the all-important drugs and how to recognise danger signs that mean they should bring their child back to the clinic for further attention.

Central to the integrated approach, health workers take advantage of their contact with the sick child to check immunization status and give advice on nutrition including breastfeeding.

Prevention – the key to further progress

An important step forward in the prevention of pneumonia is likely to be through the use of new vaccines. Widespread use of vaccines against measles and whooping cough are already having an impact on respiratory infections. In recent trials in the Gambia, a vaccine as yet little used in the developing world provided 100% protection against pneumonia due to *Haemophilus influenzae* type b, the second most common cause of the disease. Other vaccines against the very common pneumococcus infection are also being tested. Another promising area is reducing indoor pollution – the smoke from open fires makes young children more susceptible to pneumonia. Research is taking place to assess the benefits to children of alternative, less polluting systems for cooking and heating inside the home.

Hib vaccine trial



A recent large-scale field trial of young children in the Gambia showed that vaccination against the bacterium *Haemophilus influenzae* type b (Hib) gave 100% protection against pneumonia resulting from this bacterium. Hib vaccine has already virtually eliminated the disease in industrialized countries. It could now play a leading role in protecting children in developing countries from this common form of pneumonia.

Diarrhoea: A multi-faceted approach

Each year, over two million children in developing countries die from diarrhoeal disease, making it the second most serious killer of children under five worldwide.

But diarrhoea can in most cases be prevented or treated. The correct strategy for the treatment of diarrhoea could save the lives of up to 90% of children who currently die from the disease. Diarrhoea

The correct management of diarrhoea could save nearly 1.8 million lives per year.

may be caused by a wide variety of infections but health workers following WHO recommendations learn to make rapid treatment decisions based on easily recognizable signs. By establishing the duration of the diarrhoea, assessing the severity

of dehydration and the presence of blood in the stools, the trained health worker is able to categorize the type of diarrhoea and decide on appropriate treatment. This approach is both life-saving and cost-effective.

The three main types of diarrhoea

Type of diarrhoea	% of all cases of childhood diarrhoea	% of all childhood deaths due to diarrhoea	% of deaths preventable by standard case management
Acute watery	80	50	100
Dysentery	10	15	80
Persistent	10	35	80
Total	100	100	90

Categorizing types of diarrhoea enables health workers to provide effective management of the problem. Health workers are trained to recognise the three main types :

1. *Acute watery diarrhoea* is the most common form and the most easily treated. It may cause dehydration which can usually be avoided by giving extra fluids and food with a little extra salt. Oral rehydration salts solution, which has revolutionised the treatment of diarrhoea since the late 1970s, can safely correct dehydration without the need for intravenous therapy in all but the most severe cases.
2. *Dysentery* is diagnosed by the presence of blood in the stool and is treated with antibiotics.
3. *Persistent diarrhoea* is defined as an episode that lasts for more than 14 days. It is a major cause of malnutrition but it can usually be treated by dietary management, supplements of minerals and vitamins, and the treatment of co-existing infections.



As an important part of WHO/CHD's approach, health workers enable parents to care for children with diarrhoea at home, using the three rules of home management of diarrhoea – increase fluids, continue feeding and recognize the danger signs that mean their child needs further treatment at a health facility.

WHO/CHD's integrated approach reduces the death toll from diarrhoea by promoting :

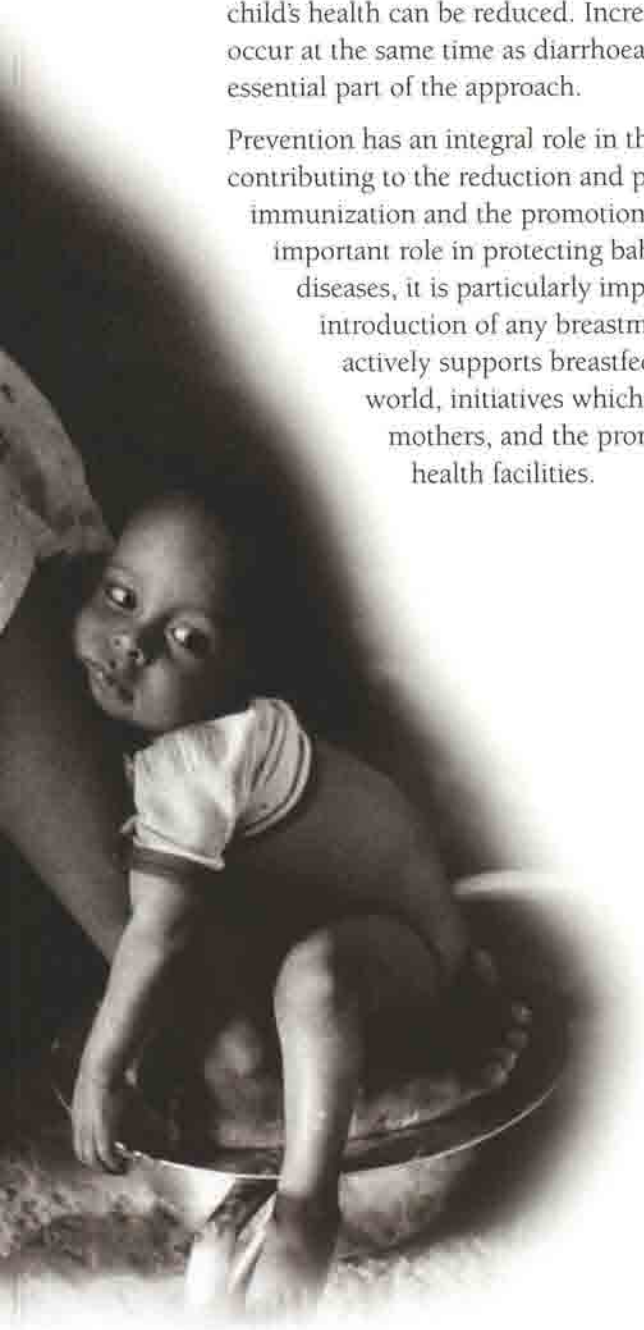
- ▶ *Rapid and effective treatment through standard case management*
- ▶ *Prompt recognition and treatment of conditions that occur in association with diarrhoea*
- ▶ *Improved home management*
- ▶ *Improved nutrition*
- ▶ *Prevention through increased breastfeeding and measles vaccination*

9.

The whole child

While urgent treatment of diarrhoea may be the life-saving priority, health workers applying the IMCI strategy consider the child's overall health status. For example, by treating the malnutrition that often accompanies diarrhoea, further risk to the child's health can be reduced. Increasing vigilance to detect diseases that may occur at the same time as diarrhoea, such as measles or malaria, is another essential part of the approach.

Prevention has an integral role in this new strategy. Two important factors contributing to the reduction and prevention of diarrhoea are measles immunization and the promotion of breastfeeding. While breastfeeding plays an important role in protecting babies and young children against a range of diseases, it is particularly important in protecting against diarrhoea, since the introduction of any breastmilk substitute entails a risk of infection. CHD actively supports breastfeeding initiatives throughout the developing world, initiatives which include training health workers to counsel mothers, and the promotion of breastfeeding in hospitals and other health facilities.



This mother has her hands full caring for her sick child in addition to her normal daily work. The lethargic child – often quiet and undemanding – may be dehydrated and seriously at risk.

Malaria

Reducing the number of children who die from malaria demands:

- ▶ Encouraging parents to seek prompt care
- ▶ Accurate assessment of the condition of the whole child
- ▶ Prompt treatment with appropriate anti-malarial drugs
- ▶ Recognition and treatment of other co-existing conditions, such as malnutrition and anaemia
- ▶ Prevention by using mosquito-proof bednets

Nearly 600,000 children die of malaria each year, most of them in sub-Saharan Africa. Young children are particularly vulnerable because they have not developed the partial immunity that results from surviving repeated infections.

The correct management of malaria could save the lives of 500,000 children per year.

Malaria is a wide-spread tropical disease caused by a parasite transmitted to humans by mosquitos. It has proved difficult to control because mosquitos have become resistant to insecticides used against them and because the parasite has developed resistance in some areas to the cheap and effective drugs that used to provide good protection. However,

alternative drug therapies have been developed for use in areas of resistance.

The integrated approach

Children with malaria can in most cases be quickly and effectively treated with a course of inexpensive oral tablets. But because fever may be the only sign of malaria, it may be difficult to distinguish it from other potentially life-threatening conditions. WHO/CHD's integrated approach enables health workers to make more accurate assessments of children with fever, providing them with the treatment they need, further referral if necessary, and avoiding excessive use of drugs.

Prevention and the home environment are particularly important in malaria control. Health workers ensure that parents understand how to care for their sick children and encourage them to use insecticide-impregnated bednets to provide protection against mosquito bites. Bednets, properly used, can reduce child deaths from malaria by as much as 35%.



Malaria is endemic in over 100 countries and over half the world's population live in areas of risk.

Measles

Reducing the death toll from measles in the developing world demands:

- ▶ *Wider immunization coverage*
- ▶ *Rapid referral of serious cases*
- ▶ *Prompt treatment of conditions that occur in association with measles*
- ▶ *Improved nutrition, including breastfeeding, and vitamin A supplementation*

11.

Measles is a common disease that infects over 40 million children and kills over 800,000 under-fives each year.

Measles is very largely preventable using safe, low-cost vaccines. Since the introduction of measles vaccine in the 1960s, the disease has become rare in the industrialized world and much reduced in developing countries. And yet over 2,000 children die each day from measles, often in association with diarrhoea and pneumonia.

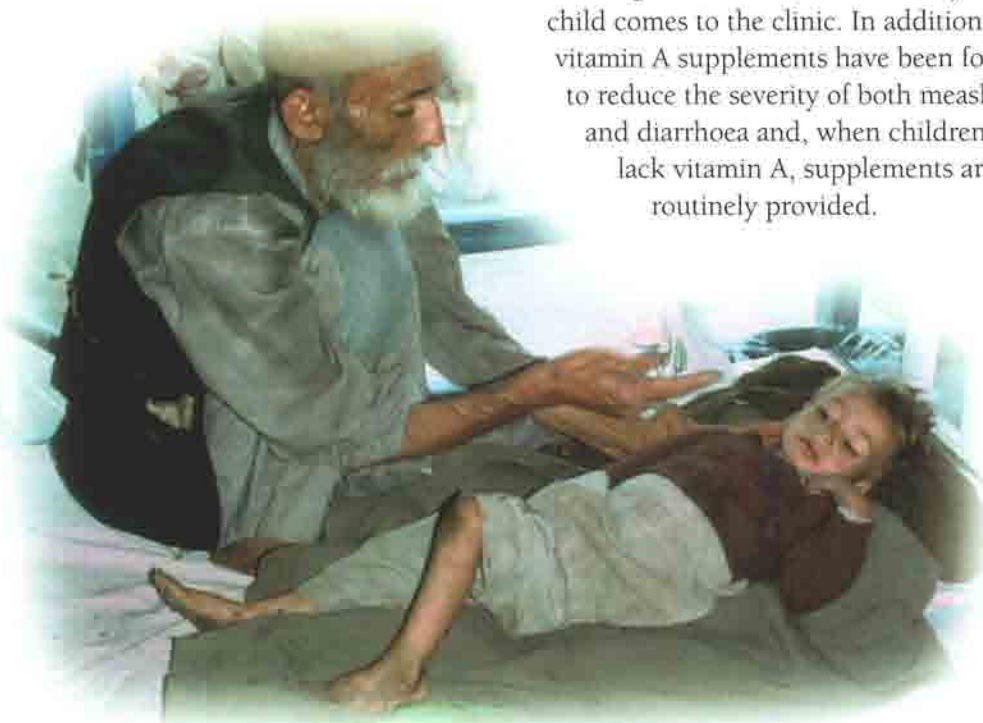
The effective prevention and treatment of measles could save 700,000 lives per year.

WHO/CHD's integrated approach is particularly appropriate for measles control. Young children with measles often develop acute respiratory infections, diarrhoea and malnutrition, and children who survive measles are more vulnerable to other dangerous infections for several months afterwards. An integrated strategy ensures that the child's condition can be treated in its entirety. Trained

health workers learn to recognize the serious complications of measles that need rapid referral for more specialized treatment, and give the support and advice parents need to care for less seriously ill children at home.

Immunization – in the front line of defence

The best protection against measles is prevention by ensuring the widest possible immunization coverage. As an essential part of the IMCI strategy, health workers use every opportunity to increase immunization, checking immunization status every time a child comes to the clinic. In addition, vitamin A supplements have been found to reduce the severity of both measles and diarrhoea and, when children lack vitamin A, supplements are routinely provided.



Virtually all unprotected children have measles during childhood. Measles causes complications which are particularly dangerous for malnourished children.

Malnutrition: Avoiding the downward spiral

12. **A**lthough malnutrition is rarely listed as the direct cause, it contributes to more than half of all childhood deaths. Malnutrition and infectious disease are linked in a downward spiral, each exacerbating the effects of the other.

For most children, lack of access to food is not the only cause of malnutrition. Poor feeding practices and infection, or a combination of the two, are both major factors. Infection – particularly frequent or persistent diarrhoea, pneumonia,

measles and malaria – undermines nutritional status. Poor feeding practices – inadequate breastfeeding, offering the wrong foods, giving insufficient quantities, and not ensuring that the child gets or eats his share – contribute to malnutrition. Malnourished children are, in turn, more vulnerable to disease and the vicious circle is established.

Improved feeding practices to prevent or treat malnutrition could save 800,000 lives per year.

Changing family behaviour

It is between 6 and 24 months, the transition stage between exclusive breastfeeding and sharing fully in the family diet that children are at most risk of developing malnutrition. The links between malnutrition, infectious disease and family behaviour argue for an integrated approach to the problem. Changing family habits and the kinds of food offered to children is not easy, but it is possible to help mothers understand which foods are important for their children, and how much and how often they need to eat. An effective way of doing this is through talking to mothers individually about their child's feeding difficulties and finding solutions that would be feasible for them to adopt. This 'nutrition counselling' is a standard feature of the IMCI approach. IMCI trained health workers check the nutritional status and feeding practices of every child under two and those with a low weight for their age. Where appropriate, they advise on the best ways of ensuring that young children get the nourishment they need for

Taking steps to treat malnutrition in sick children helps prevent severe episodes of illness.



IMCI can improve the nutrition of children by:

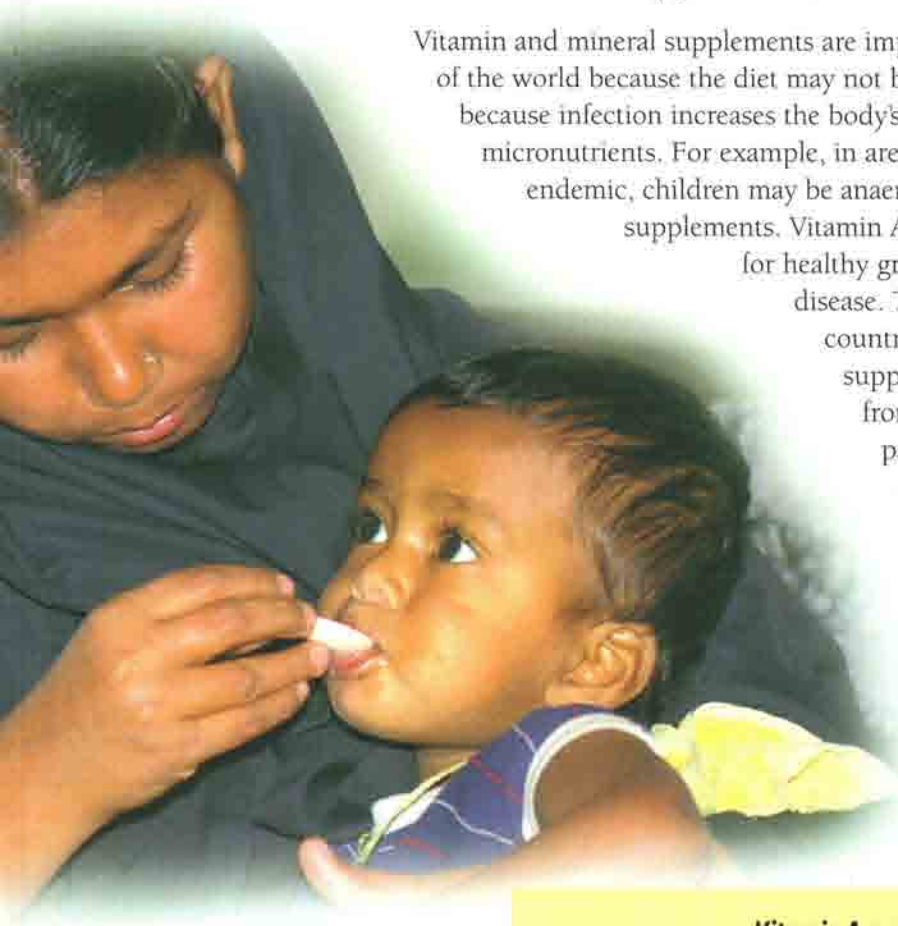
- ▶ Promoting breastfeeding
- ▶ Improving feeding practices
- ▶ Providing micronutrient supplements routinely for children who need them

healthy growth and development. Quite simple changes can make all the difference. Helping toddlers to eat, for example, rather than leaving them to serve themselves from the family dish, can greatly increase the amount of food they actually consume.

13.

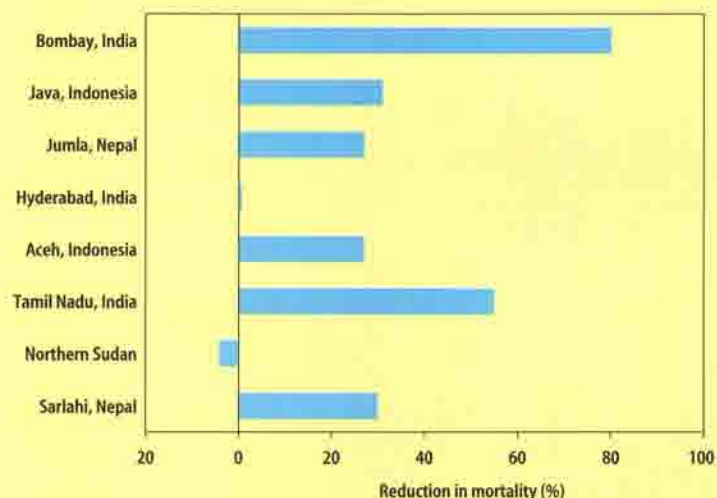
Micronutrient supplements

Vitamin and mineral supplements are important in certain regions of the world because the diet may not be an adequate source, or because infection increases the body's need for certain micronutrients. For example, in areas where malaria is endemic, children may be anaemic and need iron supplements. Vitamin A is extremely important for healthy growth and resistance to disease. Trials in developing countries show that vitamin A supplements can reduce death from infectious disease, particularly diarrhoea and measles, by almost 25%. An integrated approach ensures that more children get the supplements they need.



Relatively simple changes to feeding practices ensure that a child gets enough to eat during the critical weaning period. Left to fend for himself with older siblings at mealtimes, this toddler could go hungry.

Vitamin A supplements save lives



In a series of community-based trials, supplements of Vitamin A reduced deaths in children aged 6 to 72 months by up to 80%.

Breastfeeding: In the front line of prevention

14. **B**reastfeeding plays an essential and sometimes underestimated role in the treatment and prevention of childhood illness. As many as 10% of all deaths of children under five could be prevented by a modest increase in breastfeeding rates worldwide and, for this reason, the promotion and support of breastfeeding is a key feature of IMCI.

Breastfeeding protects babies and young children from a range of potentially fatal conditions. When mothers breastfeed exclusively (that is, without giving any other food or fluid, including water)

Improved breastfeeding alone could save between 1 and 1.5 million lives a year.

during at least the first four months and, if possible, six months of life, there is a dramatic decrease in episodes of diarrhoea and, to a lesser extent, respiratory infections. Even small amounts of water-based drinks decrease breastmilk intake and

weight gain, and increase the risk of diarrhoea.

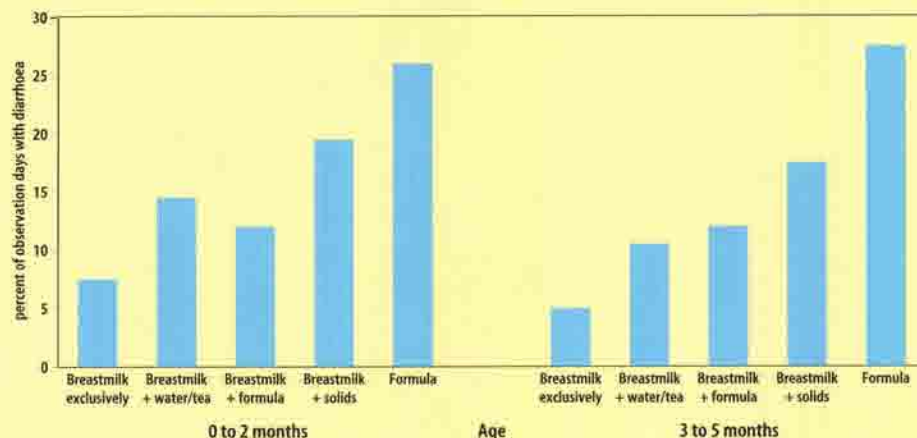
Continuing to breastfeed, besides giving complementary foods, up to two years of age or longer maintains good nutritional status and helps prevent diarrhoea.

Continuing to breastfeed during episodes of diarrhoea also helps speed recovery and reduces weight loss.

But in many countries, few babies are exclusively breastfed, and there is evidence that the duration of breastfeeding worldwide is also decreasing. In some countries, exclusive breastfeeding rates are as low as 2%, even though the cost of feeding a baby with milk



Breastfeeding reduces the prevalence of diarrhoea



Babies who are exclusively breastfed are protected against diarrhoeal disease. This study in Peru shows the correlation between the proportion of breastmilk in the infant diet and the number of days of diarrhoea suffered.

Relatively simple advice can make all the difference. Helping mothers to improve breastfeeding technique avoids a range of common problems.

powder can reach as much as 200% of the official minimum wage. And in some countries which have seen a steady increase in bottle feeding since the 1970s, the infant mortality rate has also shown a substantial increase.

Increasing breastfeeding is a highly feasible and cost-effective approach to reducing the number of children who die from infectious disease and malnutrition. It requires :

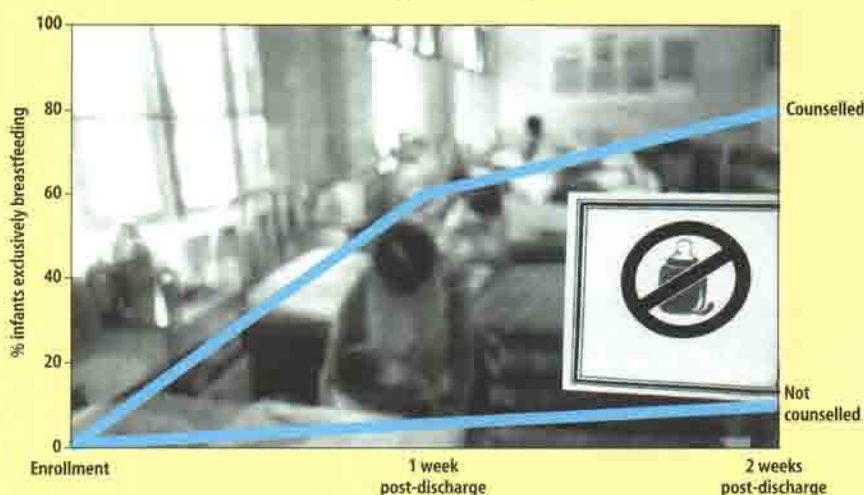
- ▶ Maximum support for mothers to establish optimal breastfeeding from birth
- ▶ Equipping health workers with counselling skills
- ▶ Individual counselling and support for breastfeeding mothers

15.

Counselling and support

Mothers often give their babies other food and fluids before six months because they doubt their breastmilk supply is adequate and do not know how to improve the situation. To help and support mothers, WHO/CHD is encouraging a number of initiatives. Research in Bangladesh, Brazil and Pakistan suggests that individual counselling considerably increases exclusive breastfeeding rates. At the forefront of efforts to improve breastfeeding skills, WHO/CHD has devised and developed courses in breastfeeding counselling for health care providers at various levels. Breastfeeding counselling is also integrated into the management of childhood illness, ensuring that whenever a sick young child is taken to the clinic or health facility, the IMCI trained health worker enquires about breastfeeding and can provide the help and support needed to solve most common difficulties. More serious problems can be referred to specialist counsellors who help mothers establish breastfeeding soon after birth and who care for well mothers and babies.

Breastfeeding counselling works



A study in Bangladesh in 1994 examined the impact of individual counselling on a group of mothers with partially breastfed babies hospitalized for diarrhoea. The rates of exclusive breastfeeding increased considerably among mothers who received individual breastfeeding counselling. WHO/CHD works with the Baby-Friendly Hospital Initiative particularly to increase the breastfeeding clinical and counselling skills of maternity staff. Mothers are given maximum encouragement and support to breastfeed from birth.

A Strategy for Success

16.

Since the first work on implementing IMCI began in 1995, WHO/CHD has provided leadership and guidance for a growing number of countries introducing the strategy into their health care systems. For full and successful implementation, the strategy must be adapted to the particular needs and circumstances of the country of use. A period of preparation is essential, during which the integrated case management guidelines are adapted to local conditions, and all materials are translated into local languages.

Training for an integrated approach

Integrated case management guidelines have been developed for use by health workers from a wide variety of backgrounds and experience.

Providing appropriate training so that health workers use the integrated approach effectively is vital to achieving improved case management. Training systems and teaching materials have been developed for staff at first-level health facilities and introduced in a number of countries as part of a systematic process for the full implementation of IMCI.

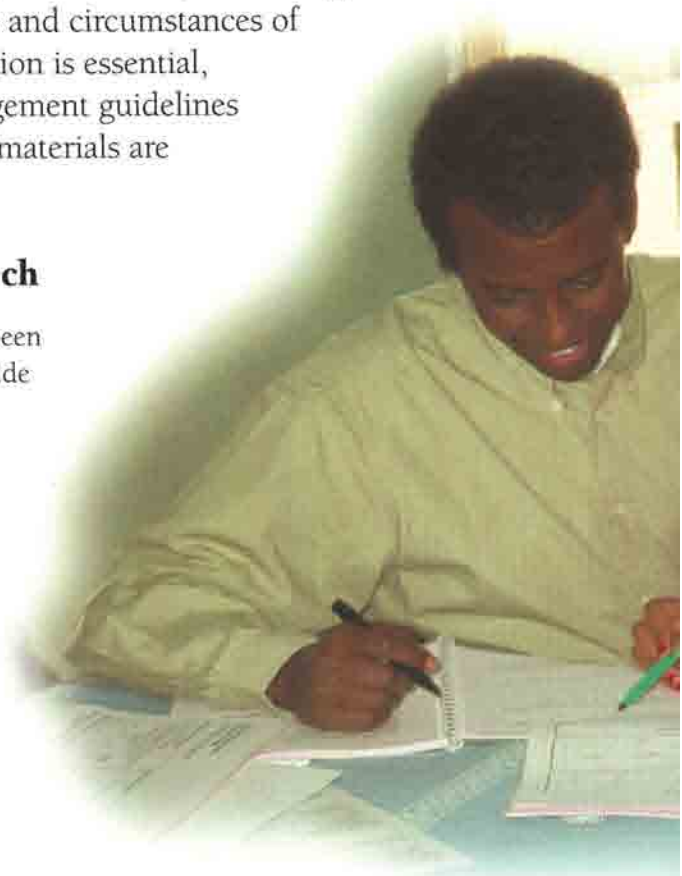
Strengthening health systems

In many developing countries, health sector reforms are underway and WHO/CHD strongly encourages the inclusion of IMCI in the early stages of reform planning. It encourages devolution of responsibility to the district level, and integrates many services which traditionally have been administered separately. Technical support and guidance are also provided in key areas such as improving the availability and supply of essential drugs compatible with IMCI guidelines; more

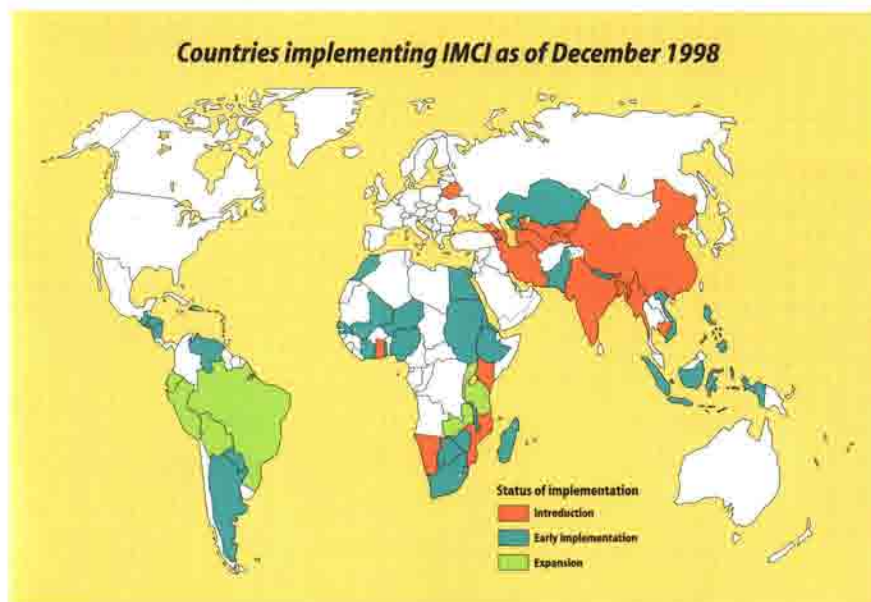
efficient organization of work in health facilities, and improved supervision of health workers.



Integrated guidelines for the treatment of sick children have been developed as a series of four wallcharts and as a desk reference tool. WHO/CHD provides technical assistance for countries in adapting the guidelines to take into account local disease prevalence and other local conditions. These teaching materials are at the core of IMCI health worker training.



IMCI materials have been designed so that they can be used effectively by health workers from widely differing backgrounds.



17.

The IMCI strategy was first introduced into six so-called 'early-use' countries. Experience gained in these countries is being carefully documented to ensure the best possible implementation process in future. The process begins with an introductory phase, followed by a period of early implementation and initial training in selected districts, before an expansion phase extends the strategy nation-wide. Since 1995, over 55 countries have started to implement IMCI.

Promoting health at home

The importance of a child's social context in determining health cannot be underestimated. Promoting health at home and within the wider community plays an essential part in WHO's integrated approach. Building on experience gained through its single-disease control programmes, interventions have been devised to encourage healthier living through good feeding practices, immunization, and improved hygiene, and to support the healthy development of children. Systems are also being devised to teach parents what to do if their children do fall ill – where and when to go for appropriate help, how to look after them at home, and the importance of following treatment advice. As the integrated strategy becomes more widely implemented, interventions to promote health will clearly become increasingly important in preventing childhood illness.

Maximum flexibility

Introducing Integrated Management of Childhood Illness into the health services of individual countries is a phased process that requires adaptation and a great deal of coordination among existing health programmes and services. Rather than replacing existing services, the IMCI strategy extends programmes, providing new links that increase both efficiency and cost-effectiveness.

In some parts of the world, certain countries may not be ready or able to introduce a fully integrated approach. In these countries, WHO/CHD continues to provide support for single focus disease control activities and, indeed, for various degrees of integration where appropriate. In some countries, partial integration between certain control programmes, especially for acute respiratory infections and diarrhoeal diseases, has been extremely successful.

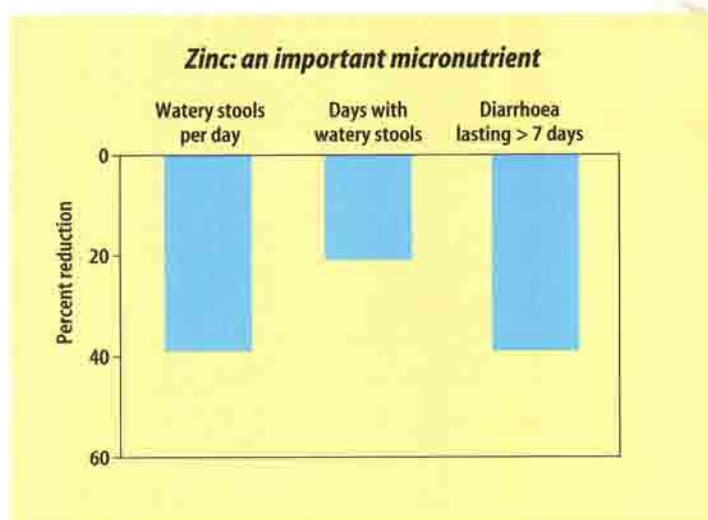
WHO/CHD has always ensured that in selecting research priorities, practical needs are paramount, and this is a tradition that the Division will continue as the IMCI strategy becomes more widely established. WHO/CHD's research effort brings together specialists from scientific institutions worldwide to help define priorities and advise on activities to support. The range, depth and excellence of research supported by WHO/CHD constitute a record to be proud of, a record which has made a positive contribution to the global effort to reduce child mortality.

The Evolution of IMCI

The current development focus is on adapting IMCI to specific country needs, reinforcing health worker performance after training, and reducing potential barriers to IMCI in first-level health facilities. Further effort is aimed at improving quality of care at referral-level facilities, conducting IMCI training in preservice as well as inservice settings, and developing tools for improving household behaviour related to child health. In addition, training materials are continually being updated and new materials and guidelines devised to improve the process of implementation.



Research increasingly confirms that responsive and stimulating parenting promotes healthy growth and development.



Recent research studies supported by WHO/CHD show that giving children zinc supplements can have a positive effect on health in a number of ways. These results of a study in India show how the severity and duration of diarrhoea episodes is substantially reduced. Other research studies show that improved zinc intake has an even greater effect in reducing pneumonia and may also reduce deaths from malaria. A study has been set up in rural Mexico to examine the effects of improving children's intake of zinc on appetite, food consumption and growth.

Health in the family and community

The promotion of child health through reinforcing 'healthy' behaviour at home and in the community is a growing focus. WHO/CHD is supporting research on tools to reinforce a variety of practices. This includes improving care-seeking, community-based

breastfeeding counselling. As part of its work to promote the healthy growth and development of children, WHO/CHD

has undertaken a review of interventions for improving physical growth, cognitive, psychomotor and social functioning and is now working to make these interventions operational.

Health systems and programme management

In these two areas, WHO/CHD has selected a number of major research projects that will yield information with direct relevance to IMCI. Studies are underway, for example, on antibiotic resistance, the use of oral rehydration therapy in severely malnourished children, the use of a 'mineral mix' in the management of persistent diarrhoea, and antibiotic therapy and nutritional management of severely malnourished children. Work is also underway to develop guidelines for planning, managing and evaluating IMCI activities at national and district level, and to improve the supervision of health worker performance.

Research supported by WHO/CHD is carried out by scientific institutions in collaboration with WHO staff and consultants. The results of research and development activities define future directions. The fact that research and development priorities are driven by field needs ensures the best use of limited resources.



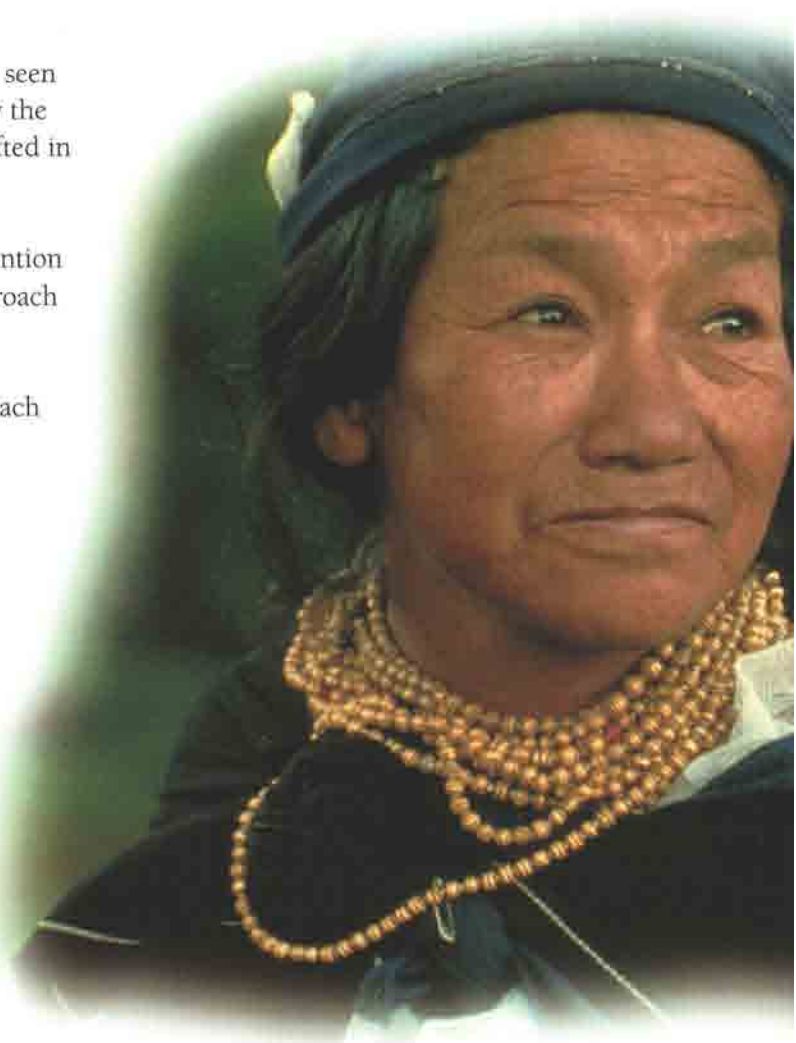
Constant exposure to smoke from open fires makes young children more vulnerable to acute respiratory infection. WHO/CHD is supporting research on the benefits of using less polluting systems for cooking and heating in the home.



During the past five years, the WHO's Division of Child Health and Development has been working to find ways that will bring about a significant increase in the number of children who grow into healthy, productive adults. We believe we have identified a strategy that works, and we are now helping developing countries to apply that strategy in ways appropriate for them.

WHO's approach to child health has seen evolution and change. Stimulated by the growing body of evidence, it has shifted in focus from single disease control programmes to a new integrated approach to the treatment and prevention of childhood illness. IMCI is an approach that accepts and responds to the condition of the sick child in all its complexity. It is also a flexible approach that extends and builds on existing health care systems, avoiding duplication of effort, improving efficiency and making the best and most cost-effective use of scarce resources.

Evidence from those countries already implementing IMCI is encouraging and the list of countries wishing to start the implementation process in the near future is growing rapidly. To provide the best possible leadership to countries, CHD will maintain its function in research and development, in providing technical guidance, and in monitoring and evaluating the impact of IMCI. With continued support and collaboration with our international partners, we believe we can radically change the way child health is approached in much of the developing world. We know what needs to be done. We owe it to the more than 11 million children who die needlessly each year to give them fairer access to that basic human right – health.





Collaborating institutions

This initiative is coordinated by the WHO Division of Child Health and Development (CHD), with the collaboration and input of numerous other WHO programmes, the World Bank, and UNICEF.

In addition to the governments in countries where activities related to Integrated Management of Childhood Illness have been carried out, many other governments and their associated agencies provide support to IMCI. Diverse research and academic institutions have been involved in development and early implementation activities.

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p 3 pie chart: Based on data taken from *The Global Burden of Disease 1996*, edited by Murray CJL and Lopez AD, and *Epidemiologic evidence for a potentiating effect of malnutrition on child mortality*, Pelletier DL et al, *Am J Public Health*. 1993;83:1130-1133. p 7 Mulholland K et al, *Lancet*. 1997;349:1191-97. p 8 Victora C et al, *J Diarrhoeal Disease Research*. 1993;11(1):25-29. p 13 Fawzi W et al, *JAMA*. 1993;269(7):898-903. p 14 Brown K et al, *Pediatrics*. 1989;83(1):31-40. p 15 Haider R et al, *Bulletin of the WHO*. 1996;74(2):173-179. p 17 The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines represent approximate border lines for which there may not yet be full agreement. p 18 Sazawal S et al, *N Engl J Med*. 1995;333:839-844.

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