

Better Health for Poor Children



A Special Report



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Better Health for Poor Children

A Special Report

from the

WHO/World Bank Working Group on
Child Health and Poverty

*The WHO/World Bank Working Group on Child Health and Poverty was established in September 2001. This **Special Report** reflects the Working Group's belief that child health and poverty should be a priority both across United Nations agencies and within governments. On behalf of our agencies, the Working Group is committed to provide technical guidance and leadership in redressing inequities in child nutrition, health and development. This report presents an overview of the situation, and a roadmap for further work that needs to be done.*

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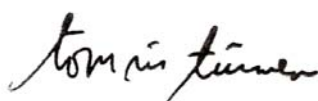
Preface

Every child - rich or poor - has the right to health and health care. Yet as we stand at the beginning of a new millennium, too many infants and children are dying prematurely and too many do not have a fair chance to develop to their full potential. We know what these children are dying of, and what prevents them from developing, and there are effective and affordable interventions that address the problem.

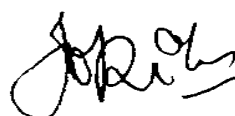
So why does the problem persist?

It persists because current health service delivery strategies do not reach children most in need, especially the poor; because their families lack the knowledge or financial resources to provide good nutrition; because families do not have access to the solutions that can save lives; because governments and the international community have not made a sufficient and sustained commitment to the rights, health and survival of children.

*Dealing with the toll of premature and unnecessary mortality and under-development among poor children is a public health imperative that WHO and the World Bank are committed to address. Working together, and in close collaboration with governments and technical partners, we will lead a focused effort to tackle child health and poverty. This **Special Report** reflects that commitment, and extends an invitation to all interested stakeholders to join in renewed efforts to provide a fair chance of survival and healthy growth and development to all children.*



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We can use the effective and affordable interventions we already have to improve children's environments and the practices of their families and communities, while working to develop and evaluate additional effective interventions.

How does the broader socio-cultural context affect the health and development of poor children?

Differences in household resources, community factors and health care between rich and poor children affect their environments and the practices of their families and communities, and through them children's nutrition, health and development.

How can we reach poor children and families with effective interventions?

We do not yet know all the answers to this question. A number of options are being tried. Systematic analyses of experience and further evaluation of interventions are needed to find efficient, and affordable ways of delivering services to poor children and families at home, in the community and in health facilities.

What are the economic benefits of investing in child health and nutrition?

Healthy children is in itself a goal. In addition, however, healthy children are more likely to develop to their full potential, to perform well in school, to be more productive in adult life, and to have healthy children themselves. Investments in child health today will contribute to economic growth tomorrow.

Putting knowledge into action: better health for poor children

Governments and their partners must act now to address the health needs of poor children, families and communities. Immediate steps are clear.

What is the problem?

Health is a fundamental human right, universally recognized and agreed upon by states. Children's right to health and health care has been particularly recognized in the Convention on the Rights of the Child (CRC). The burden of ill-health is greatest among the poor, whether in poor regions of the world, in poor countries, in poor communities or in poor households within communities. Poor children are therefore denied their fundamental right to health and development. They do not have a fair chance of a healthy start in life. Children in poor families are more likely than their wealthier peers to die in the first month of life, in the first year of life, and before they reach the age of five. Children in poor families are sick more often, and more seriously, than children in better-off families. Poorer children are less well nourished than wealthier children, and are more likely to lag behind in growth and psychosocial development. The effects of these inequities are not only immediate. They also lead to low performance in school and on the job. A girl living in poverty today has a greater chance of dying in childbirth 15 or 20 years from now, and of giving birth to a baby who is premature, malnourished, or who becomes sick and dies in infancy. The effects of poverty begin even before birth, when negative influences on the fetus can increase the risk of diseases such as diabetes and heart disease in adulthood.

Differences in death rates between poor and rich children

Poverty multiplies the risk that children will die before their fifth birthday. This holds true across geographic boundaries (deaths within regions, countries, districts and even within individual communities), across age subgroups (neonatal, infant and under-five) and across most of the major illnesses and conditions that lead to child deaths (diarrhoea, malaria, measles and malnutrition). Poor children are up to six times more likely to die before their fifth birthday than wealthier children.¹ Most of these deaths are from causes we know how to prevent, and are therefore unnecessary and unfair.

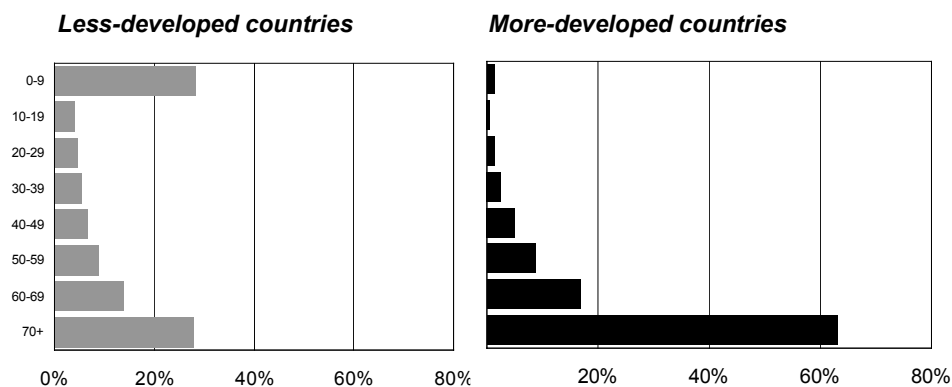
Within Africa, decreasing trends in child mortality rates have slowed or even reversed over the past decade. For a small number of countries with high levels of HIV infection this reversal can, to some extent, be attributed to mother-to-child transmission of HIV. For most countries, however, progress in reducing child deaths has also slowed because efforts to reduce malnutrition and to achieve full coverage with interventions to reduce child mortality from diarrhoea, pneumonia, vaccine-preventable diseases and malaria have stagnated.²

In the year 2000, 99% of the 10.9 million childhood deaths occurred in developing countries.

(WHO, 2001)

FIGURE 1: DISTRIBUTION OF DEATHS BY AGE GROUP IN LESS AND MORE DEVELOPED COUNTRIES

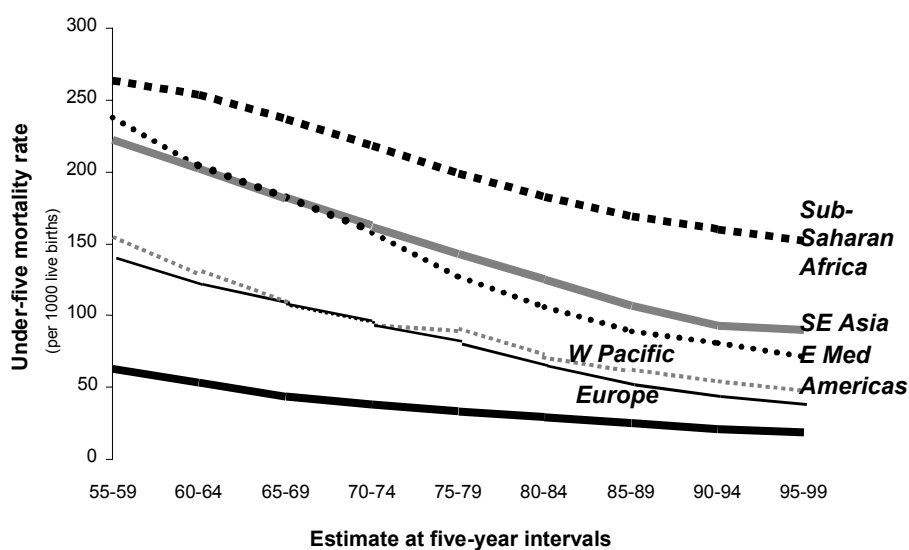
Children living in poor countries are much more likely to die young than children in developed countries.



Source: United Nations Population Prospects, 1998 Revision.

FIGURE 2: REGIONAL TRENDS IN UNDER-FIVE MORTALITY, 1955 – 1999

Child mortality rates in Africa are only now approaching the level of child mortality in the Americas in 1955, and are over five times the current rate in Europe.³

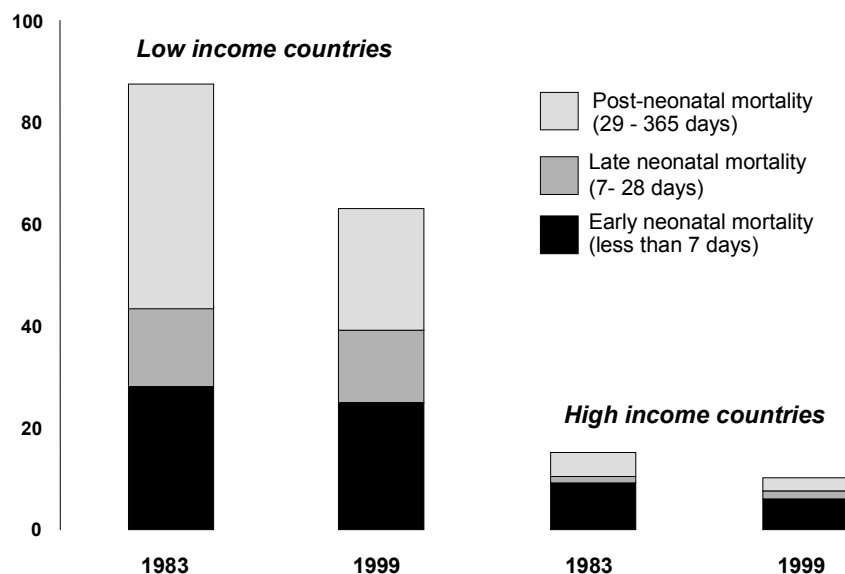


Source: EIP/WHO

The health of young infants deserves special attention. Over one in five deaths among children under five in 1999 happened during the first week of life.⁴ Most of these deaths are due to malnutrition in the mother and fetus, leading to low birth weights⁵, poor antenatal care and lack of skilled birth attendants. Newborns in low-income countries are much more likely to die than newborns in middle and high-income countries.

FIGURE 3: CHANGES IN ESTIMATED GLOBAL MORTALITY AMONG INFANTS, 1983 – 1999

Many more infants are dying in low-income countries than in high-income countries, and global rates of neonatal mortality have not declined as rapidly as those among older children.⁶



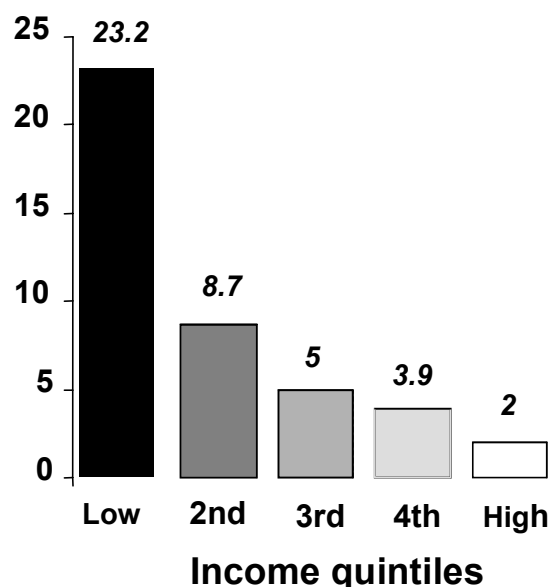
Source: RHR/WHO, 2001

Child nutrition, growth and development

Malnutrition is a fundamental problem among children in the developing world. In 2000, malnutrition was associated with 60% of all childhood deaths,⁷ and in 1998, more than one-third of young children were stunted (low height for age).⁸ Seventeen percent of infants are born with low birth weights.⁹ Differences in children's nutrition are as large within countries as between countries and regions. Children in poor families and communities are less well-nourished, and more likely to be stunted, than children in better-off settings.

FIGURE 4: PREVALENCE OF LOW HEIGHT FOR AGE (STUNTING) AMONG CHILDREN IN BRAZIL, 1996

A nationally representative 1996 household survey in Brazil showed that children in the poorest groups of the population had a significantly higher prevalence of stunting than children in less poor groups.¹⁰



Source: Brazil demographic and health survey, 1996

Vitamin A, iron, iodine and zinc are essential for children's health and development, and high proportions of children in developing countries do not get enough of these micronutrients in their daily diet. Even though formal studies have not described differences between rich and poor children, it seems logical that families with more resources are more likely than families with fewer resources to feed their children foods with enough of these nutrients. Children who receive too little iodine are at risk of mental retardation. UNICEF has estimated that in 2002, 41% of households in the least-developed countries still did not use iodized salt,¹¹ although this is a proven and inexpensive way to provide iodine to whole populations.

Nutritional status has long-term implications for the healthy development of a child. Malnutrition and micronutrient deficiencies are associated with delayed motor development, impaired cognition, poor school performance, later problems in reproductive health and even lower adult wages and productivity. As summarized by the Director-General of WHO, "...nutrition is a cornerstone that affects and defines the health of all people, rich or poor...Poverty, hunger and malnutrition stalk one another in a vicious circle, compromising health and wreaking havoc on the socioeconomic development of whole countries, entire continents...This is a travesty of justice, an abrogation of the most basic human rights."¹²

What is the problem?

Poor children do not have a fair chance of survival and healthy development.

What can we do to improve the health and development of children living in poverty?

Child survival, health and development are influenced by families' and communities' ability to protect, care and provide for them. "Although disparities in health between social groups exist in all societies, it is imperative to emphasize that such disparities can be modified by specific policies: They are not inevitable" (Challenging Inequities in Health, 2001).

There are public health interventions that can support and sustain important changes in both the environment and in behaviours, leading to better health for children.

The physical environment

Safe and supportive environments protect children and contribute to their healthy development. Although the word "environment" in this context refers to social and psychological environments as well as the physical environment, in this section we focus only on the physical environment. Our aim is to show that children in poor families and communities have less healthy environments than better-off children, and that there are proven ways to improve this situation.

Water and sanitation are essential elements of a safe and supportive physical environment for children. Access to safe drinking water, healthy sanitation practices and good personal and domestic hygiene can protect children from diarrhoea and other communicable diseases.¹³ WHO and UNICEF have estimated that over one billion persons worldwide, almost all of them poor, did not have access to safe water in 2000.

Simple steps to safe water:

- Purify contaminated water
- Store water safely in plastic containers with a narrow mouth, lid and spigot to prevent recontamination

Interventions to promote safe water have been developed and are now being evaluated at the population level. Interventions to increase hand washing include hygiene education, demonstrations of hand washing behavior, provision of soap and water and changing the design of the community taps.¹³ The effectiveness of these interventions under field conditions needs to be confirmed, but evidence from small-scale studies is encouraging.

Interventions to improve disposal of faeces include providing sanitation facilities, promoting their use, promoting defecation in designated sites, burial of faeces, and the clearing of faeces out of homes and compounds.^{13,14}

Indoor air pollution (IAP) in family homes is produced by the burning of coal or biomass fuels (wood, dung, fiber residues) for cooking and heating, in combination with inadequate ventilation. Prolonged exposure to indoor air pollutants increases the risk of pneumonia in children¹⁵ and may cause serious health conditions, such as lung cancer, later in life. IAP is also linked to a higher risk of a mother dying while giving birth, or having a child with low birth weight. Poor rural families are most at risk for exposure to indoor air pollution.¹⁶

Interventions to reduce IAP include those that target the source (improved stoves with cleaner fuels), those that target the dwelling through better ventilation, and those that target family behaviours (use of lids on pots, keeping child away from smoke). Common features of successful experiences with reducing IAP are interventions that are locally designed and promoted through social marketing. Evaluations of the effectiveness of these interventions have shown mixed results¹⁷ but estimates of the potential economic costs and benefits are encouraging. Family access to interventions to reduce IAP and improve water and sanitation is limited by economic factors.

Family and community practices

Families and communities affect children's health through their behaviours. A recent review of research demonstrates the importance of caregiver practices as determinants of child survival, health and development¹³. Better-off families and better educated mothers are more likely to practise healthy forms of behaviour than poor families and less educated others.

Studies have shown that community-based interventions to improve family and community practices for child health are effective on a small scale, but there are few examples of large-scale interventions that have led to documented improvements at the level of populations.¹³ The global community must invest more in learning how to take proven community interventions to scale.

Maternal practices related to childbirth, including antenatal care, the presence of a trained attendant at birth, adequate nutrition for women before and during pregnancy, and family planning, are crucial for child health and development. Antenatal care, assistance at birth, and nutrition will result in healthier newborns, and family planning can improve the mother's health. Many studies have examined differences in these practices by socioeconomic status, and have documented important inequities between the poor and the less poor.

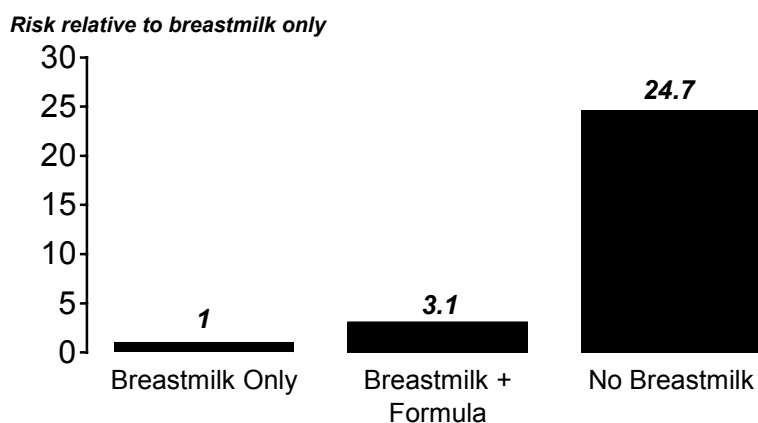
Effective and affordable interventions to address these maternal practices have been developed and tested over the past few decades. The knowledge and experience needed to plan appropriate packages of services to improve maternal practices related to childbirth are available. The challenge is how to deliver them to women who need them, and especially poor women.

Exclusive breastfeeding for the first six months of life helps mothers and babies alike, and reduces infant mortality from infectious disease and malnutrition.¹⁸ Current global estimates indicate that only 35% of children aged 0-4 months are exclusively breastfed, with rates as low as 2% in some African countries.¹⁹

Breastfeeding promotion interventions have been shown to be effective in improving exclusive breastfeeding rates and feasible for implementation in a variety of settings.^{20,21,22,23,24} A recent review of the evidence suggests that interventions based on skilled counselling are more effective in increasing exclusive breastfeeding rates than health education messages. Successful interventions are those that provide the mother with accessible and timely support that is relevant to her needs.¹³

FIGURE 5: RELATIVE RISK FOR DIARRHOEA MORTALITY (0-1 MONTH) BY BREASTFEEDING PATTERN, PELOTAS BRAZIL

Children who are not breastfed have up to 8 times the risk of dying from diarrhoea in their first month of life relative to infants who receive at least some breastmilk.²⁵



Source: Victora et al. *Lancet* 1987. 21:319-21

Timely introduction of appropriate complementary foods involves feeding children nutritious foods of appropriate consistency, and in sufficient quantity, beginning at the age of 6 months, the age at which breastmilk alone does not provide all the needed energy and nutrients. Caregivers should feed the child frequently (three times a day for children who are also breastfeeding, and five times a day for children who are not being breastfed), encourage the child to eat, be responsive to the child's needs during feeding, and give separate servings to each child. Appropriate complementary feeding is linked to child survival, especially between the ages of six and 11 months.²⁶

Although few data are available it seems likely that there are important differences in patterns of complementary feeding by socioeconomic level. Good nutrition depends on the presence of animal-origin foods such as eggs, poultry, beef or fish in the child's diet. Mothers' knowledge of how, what and when to feed the child may be as important as financial resources in explaining poor-rich differences in appropriate feeding.

Few evaluations of interventions designed to improve complementary feeding have been conducted to date. One study found that parents' feeding behaviour could be changed through counselling and family support, and that this led to improved cognitive development in the child.²⁷ Other studies have shown that interventions designed to improve family feeding behaviour have significant effects on the child's eating patterns and nutritional status.^{28,29}

Several large-scale studies are under way to evaluate the feasibility and impact of interventions designed to make sure children receive enough vitamin A, iron and zinc. The results suggest that improving the micronutrient content of diets can play an important role, but other interventions that supplement the diet or fortify foods with extra nutrients will also be necessary.

Investing in nutrition

Investing in nutrition makes good sense. Good nutrition yields multi-sectoral benefits, and it should be promoted multi-sectorally. The Millennium Development Goals on poverty, education and health cannot be attained as long as millions of children and women remain malnourished. Nutrition needs to be recognized as a key development issue by international and country leaders and integrated into national poverty planning processes. Nutrition outcomes should be used to assess outcomes of poverty strategies. Promoting nutrition has positive impacts on outcomes in health, education, early child development, rural development and the status of women in developing countries, a synergism that should not be ignored.

The World Bank, 2002

Regular use of insecticide-treated nets (ITNs) for the prevention of malaria can reduce illness and deaths from malaria in geographic areas where the disease is common.^{30,31,32} Children living in poor households are less likely to use ITNs than children living in better-off households.³³

Developing effective and sustainable interventions to increase the use of ITNs is a continuing challenge. In Tanzania, a social marketing campaign led to rapid increases in regular use of ITNs, and was estimated to increase overall survival among children under age five by 27%.³⁴ Experience from Zimbabwe suggests that successful social marketing of ITNs requires government commitment and distribution strategies that make the nets affordable and easily obtainable for the users while at the same time bringing profit to retailers.³⁵

Correct home management of childhood illness involves a number of important family practices. Caregivers must recognize the illness early and respond either with correct treatment at home or by seeking care from a trained health provider.

Some of these practices have been investigated thoroughly and shown to be effective, such as giving increased fluids and continuing to feed a child with diarrhoea. Other practices have received little research attention to date. A review of home treatment practices by income level based on large population-based surveys in 44 countries shows that poorer caregivers report lower levels of appropriate home management than better-off caregivers.³⁶ One exception is the use of oral rehydration therapy (increased fluids and continued feeding) for children with diarrhoea, which does

not vary systematically with socioeconomic status. This may be because wealthy families in some countries favour drug medications, which not only are unnecessary but also may be harmful, over simpler oral rehydration therapy.

Poor or delayed care-seeking has been identified as a contributor in up to 70% of child deaths.¹³ Analyses of care seeking for diarrhoea and pneumonia from 44 countries indicate that there are differences in patterns of care-seeking by income levels. Poor children are less likely to be taken to an appropriate provider when they are ill with either diarrhoea or pneumonia than other children.³⁷ Similar inequities have been found in very poor rural communities in Tanzania.³⁸

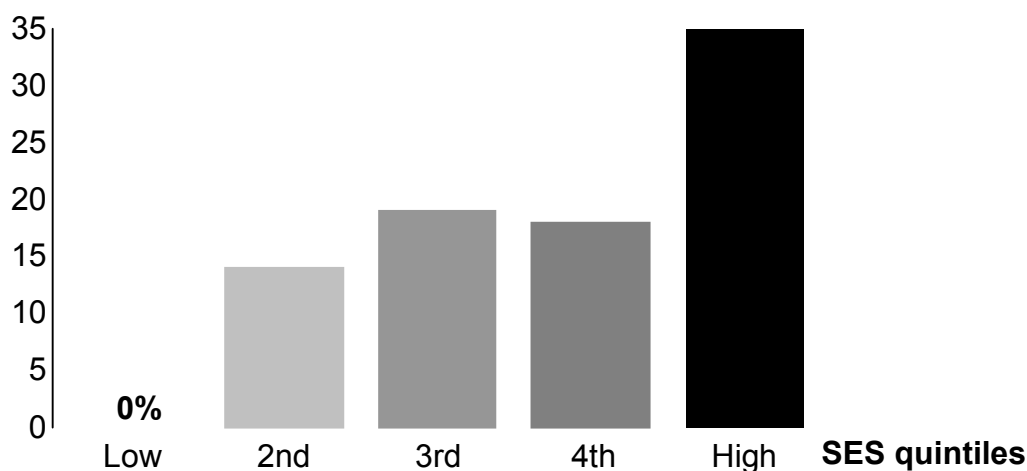
For caregivers who take the child to a provider, additional practices are involved in following the advice they are given about how to care for the child. For severely ill children these practices can include referral. According to studies, there is a link between adherence and child health outcomes. Unnecessary illness can arise from incomplete treatment, therapy failure, drug resistance and the later misuse of left-over medicines¹³. Studies carried out as part of the Multi-Country Evaluation of IMCI Effectiveness, Cost and Impact (MCE) in Tanzania and Bangladesh did not find differences in compliance between poor and less poor families.^{39, 40}

Evaluations of large-scale interventions designed to increase the correct management of diarrhoea for whole populations have demonstrated that these interventions are feasible and can be effective in changing family and community practices.⁴¹ In addition, evaluation of national programmes for the control of diarrhoeal diseases suggests that communication and counselling activities led to increased use of oral rehydration therapy, which in turn was a major contributor to reductions in child mortality from diarrhoea.^{e.g.42,43,44,45}

However, a recent review of the literature did not identify any published studies describing the effectiveness of an intervention designed to improve caregivers' recognition that an ill child needs to be taken outside the home for care.¹³ This is an area where further research is urgently needed.

FIGURE 6: PERCENT OF CHILDREN IN RURAL TANZANIA WITH PROBABLE PNEUMONIA WHO RECEIVED AN APPROPRIATE ANTIBIOTIC, 2000

Among children under five in rural Tanzania reported by their caregivers to have had pneumonia, none of those living in the poorest 20% of households received an antibiotic, while over one-third of those living in the least poor 20% of households received an antibiotic.



Source: Schellenberg J et al. Submitted for publication. 2002.

Integrated management of childhood illness

Strategies for integrated management of childhood illness focus on the joint delivery of essential interventions for child survival, health and development at community, health facility, and health system levels. IMCI addresses the conditions that are most common among poor children. At the household and community levels, IMCI interventions are developed and adapted to address the most important health problems in a country, district or community. These include community-based interventions and communications strategies to improve practices such as infant and child feeding, careseeking, the home management of illness and the use of insecticide-treated bed nets (in areas with malaria). Health workers in communities and health facilities assess the child's needs, provide appropriate treatment, and counsel the mother about home care, nutrition and when to return. Facility and district health staff work together to advocate improvements in the health system needed to deliver adequate care.

In the World Development Report 1993, the World Bank estimated that IMCI was among the ten most cost-effective interventions for child health. To confirm those estimates, evaluation of the cost-effectiveness and impact of nationally-adapted IMCI strategies is under way in Bangladesh, Brazil, Tanzania and Uganda with support from CAH/WHO, the Bill and Melinda Gates Foundation and the United States Agency for International Development (for the Uganda site) and technical partners. Although the first impact results will not be available until 2003, ongoing evaluation of IMCI implementation and intermediate outcomes has produced important and encouraging findings. These studies are also designed to evaluate the effect of IMCI interventions on equity in child health outcomes as well as their determinants. A set of "bridging" studies designed to address the challenges of scaling-up and reaching poor children are being planned in Cambodia, Kazakhstan, Niger and Peru.

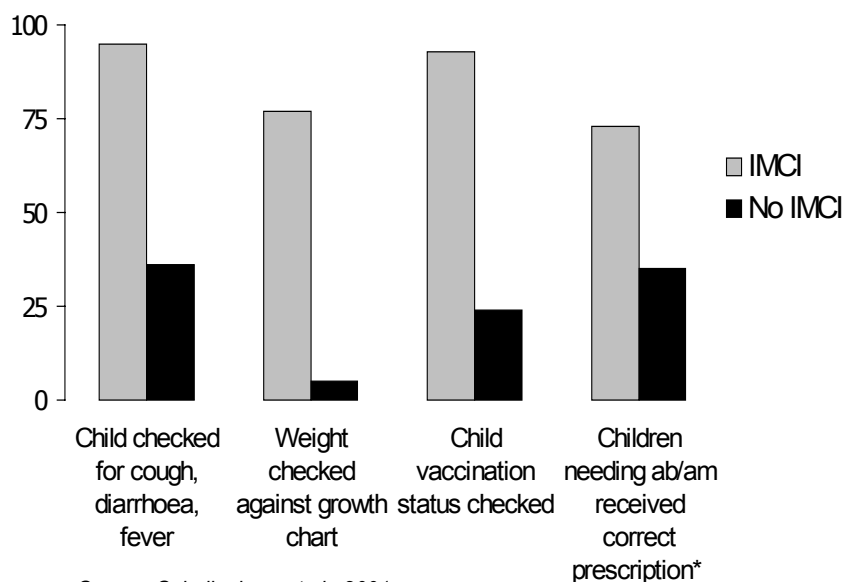
Studies of specific parts of the IMCI strategy have demonstrated that children receive better care from health workers who have been trained in IMCI than those who have not, at both health facility^{46, 47} and community⁴⁸ levels. In Brazil and Pakistan, mothers counselled by health workers using the IMCI approach were significantly more likely than mothers seen by health workers not trained in IMCI to feed their child appropriately, and to have children whose nutritional status improved over the six-month study period.³⁰ An operational research study designed to evaluate the recall of key messages delivered by health facility workers trained in IMCI in Benin found that caretakers of ill children remembered 90% of all messages immediately after an IMCI consultation, and 82% 24 hours later.⁴⁹ Selected examples of these findings are presented in Figures 7 and 8.

A recent evaluation of the implementation of the IMCI strategy in Africa concluded that the interventions included in the strategy were appropriate and that training in the IMCI case management guidelines resulted in dramatic improvements in the quality of care delivered to sick children.⁵⁰ Both this evaluation and findings from a number of other assessments have indicated, however, that health system weaknesses are limiting the potential impact of IMCI. Among the most important of these weaknesses are inadequate mechanisms and incentives to support and maintain health worker performance, high levels of staff turn-over, stock-outs in the basic drugs needed to treat child illness according to the IMCI case management guidelines, and inadequate management capacity at both central and district levels.

In addition, in many countries, only a small proportion of families use public health services, and this proportion is lowest among the poor. One of the biggest challenges facing the global public health community is therefore how to reach poor families with effective interventions.

FIGURE 7: QUALITY OF CARE AMONG CHILDREN SEEN BY HEALTH FACILITY WORKERS WITH AND WITHOUT IMCI TRAINING, RURAL TANZANIA, 2001

Children in rural Tanzania received better-quality care from facilities implementing IMCI than from facilities where IMCI had not yet been introduced.⁵⁰

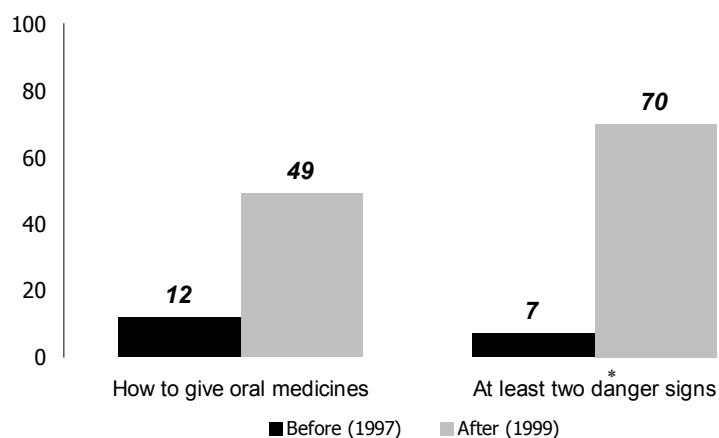


Source: Schellenberg et al., 2001

*Denominator limited to children needing an antibiotic or antimalarial based on the IMCI case management guidelines.

FIGURE 8: COUNSELLING MESSAGES RECEIVED BY MOTHERS OF CHILDREN IN HEALTH FACILITIES BEFORE AND AFTER TRAINING IN IMCI, BOLIVIA, 1999.

Mothers of sick children visiting health facilities in Bolivia were more likely to receive correct counselling messages after IMCI had been implemented.^{51Ref}



Source: MOH, Bolivia WHO, BASICS/USAID & Sociedad Boliviana de Pediatría, 1999.

Completion of a full course of immunizations before a child's first birthday can prevent serious illness and death. The Expanded Programme on Immunization (EPI) includes the traditional antigens*, as well as hepatitis B, vitamin A supplementation and regionally appropriate vaccines such as yellow fever or Japanese encephalitis. Immunizing a child involves delivering the complete number of doses in a timely, safe and effective way.¹³

A review of large-scale population-based surveys in 44 countries showed that rates of immunization coverage varied consistently by levels of household wealth. Children in poorer families and poorer countries were less likely to have been vaccinated than children in better off settings.^{52,53} These findings are consistent with those of other studies demonstrating that better off families are more likely than poorer families to immunize their children.^{e.g. 54, 55}

Trials of specific vaccines show that increased coverage is linked to better child health. There is general agreement in the public health community that increased immunisation coverage in recent decades has led to substantial reductions in child death, to the near eradication of polio,¹³ and to major reductions in cases of measles, diphtheria, and pertussis all over the world.

Despite its potential impact, high vaccination coverage is not universal. There are important differences in coverage rates between poor and rich countries, poor and rich communities, and poor and rich children. These inequities must be addressed.

What can we do to improve the health and development of children living in poverty?

Use the effective and affordable interventions we already have to improve children's environments and the practices of their families and communities, while working to develop and evaluate additional effective interventions.

* BCG, polio, diphtheria, pertussis, tetanus and measles

How does the broader sociocultural context affect the health and development of poor children?

We have shown the importance of family and community practices and safe and supportive environments for the health of poor children, and the availability of effective interventions to improve them. But why do these practices and environments vary from household to household, community to community, culture to culture? What influences them? Practices, and to some extent the environment, are influenced by basic, underlying factors, such as how much money, land or education a family has, characteristics of their community, including social norms, and characteristics of the health services and health system in the place where they live. Differences between rich and poor families in these basic characteristics can help us understand, explain and address inequities in environments and practices, and in different health outcomes.

The relationships among the underlying factors and the more immediate environmental and behavioural determinants that influence child health outcomes are complex. One underlying determinant can affect several practices, making it difficult to get clear results from evaluation of effectiveness and costs. Another important limitation in our understanding of child health and poverty is that all the factors described here are shaped by political, economic and social factors within a particular setting.

Household resources

Household resources such as income, assets or mothers' education are an important determinant of child health. Children from better off households have better health and nutrition, and are less likely to die, than children from poorer households. This is mainly because higher incomes are associated with family and community practices and physical environments that are safer and more supportive of children's health and development.

Education, and especially mother's education, is another important aspect of household resources. Higher levels of education are associated with healthy family and community environments and behaviour, as well as with higher rates of child survival and adequate nutrition. Education tends to be lower amongst the poor. The gap in mothers' education between the rich and the poor is especially large in South Asia and Western and Central Africa.

At the household level, it is not only the level of resources that is important but also the distribution of resources within the household. In situations where women have little control over household resources, there may be less frequent or later use of antenatal care,⁵⁶ or lower levels of appropriate careseeking for children.

Community Factors

Community factors, including cultural beliefs and norms, can play a large part in shaping health practices.⁵⁷ Practices that often vary across communities include almost all of the major determinants of child survival, health and development: hygiene practices, childbirth or childrearing practices, feeding practices and the distribution of food in the home, and practices related to the care of children who are sick. At the community level, as at the household level, poor children are likely to be disadvantaged relative to rich children. For example, poor children are more likely than their wealthier peers to live in remote areas or in crowded urban slums, or to be exposed to health risks in their environment.

Characteristics of Health System

Characteristics of the health system and health services are a third important set of underlying factors that affect child health.

- Availability of services for example, through the presence of a health worker trained in the management of childhood conditions and illnesses is an important determinant of which services families use, how often and for what types of problem.^{58,59}
- Accessibility, or the ease with which people can get to and use facilities, is also important. Various factors influence service utilization, such as distance to the facility, opening hours, and availability of trained staff and drugs.
- Affordability plays a key role in utilization. Higher prices have been associated with reduced or delayed care-seeking, especially among the poor.
- Perceived quality of health services also makes a difference. Caregivers take their children to providers or facilities that they believe provide the best care for the child and the most support for themselves.

Compared to the rich, the poor are consistently disadvantaged in the availability, accessibility and quality of health services. Poor families also spend a higher proportion of their income on out-of-pocket fees for health care.

How does the broader socio-cultural context affect the health and development of poor children?

Differences between the household resources of poor and better-off children, and between the community factors that affect them and the health care they receive, are linked children's environment and to family and community practices.

How can we reach poor children and families with effective interventions?

Thus far in the ***Special Report***, we have shown that:

- There are inequities between the poor and the rich in child health and nutrition, and in the extent to which the home environment and family and community practices are supportive of child health.
- Effective and affordable interventions are available to prevent these unnecessary deaths among poor children, and to improve their health and development.
- The factors influencing caregivers' use of health services and health-related practices are generally understood, and we can begin using them to develop policies and programmes that will improve the health and development of poor children.

If these statements are true, why did 10.9 million children die in the year 2000, practically all of them among the poor?

One part of the answer is certainly that governments and their partners have not yet developed and implemented health service delivery strategies capable of reaching poor children. Progress in reducing child health inequities in the 21st century will depend upon designing and testing effective solutions to the challenges of financing and delivering health services for the poor. What are the key issues? What options should be evaluated?

Strengthening and redefining the role of government health systems

Reaching poor children requires solutions for health systems as a whole, to address underlying constraints in financing, referral, and human resource management. In periods of health sector reform, children are often especially vulnerable. This should be anticipated, and special protective mechanisms established.

Addressing population health and achieving gains in health outcomes

The pace of public health development has quickened over the last decade. We need to reconsider old assumptions about the timing and sequencing of health system

and community interventions. We need to re-open debates about the relative advantages of parallel delivery strategies that yield results quickly and strategies designed to build sustainable longer-term capacity. We need to learn more about the complementarity and potential synergies of poverty-reduction strategies that focus on underlying determinants and about public health interventions that focus on the more immediate environmental and behavioural determinants of population health and development.

One reason to re-think these issues now is that new resources are available. These resources can be used to improve the health and development of poor children and families, if governments, fund administrators and technical partners recognize that children bear the greatest burden of disease and ill-health, and that poor children fare worse than other children. Some examples of the new sources of funds that will need to be programmed to achieve improved child health outcomes, especially among the poor, include:

Roll Back Malaria, which aims to reduce the global malaria burden by one-half by 2010.

Over 80% of malaria deaths in 2000 occurred in Africa, and nine in every ten malarial deaths in Africa was in a child under the age of five.⁴ Outcome targets set for sub-Saharan Africa include having 60% of children sleeping under insecticide-treated nets, and 60% of malaria cases treated promptly and effectively based on the Integrated Management of Childhood Illness (IMCI) guidelines. To achieve these goals, Roll Back Malaria will need to continue and expand collaboration in the development, implementation and scaling up of health service financing and delivery strategies for reaching poor children in health facilities and in their communities.

The Global Fund against AIDS, tuberculosis and malaria, which aims to help countries with insufficient resources to reduce high burdens arising from the three target diseases.

Criteria for the distribution of grants to countries include the availability of cost-effective interventions. Malaria resources should therefore, as an example, be used to scale-up integrated approaches to child health and the use of insecticide-treated nets among poor children living in countries with high malaria burden. In addition, health systems will need to be strengthened to increase access to services among all age groups in the population, which should increase access for poor children.

The Heavily Indebted Poor Country Debt-Relief Initiative, which aims to provide additional resources for the poorest countries to help them meet their poverty reduction strategy goals.

Twenty-four countries are currently eligible for support from this initiative. One condition for support is the development of a poverty-reduction strategy paper (PRSP) following guidelines established by the World Bank. The PRSP framework can provide a vehicle for governments to initiate new efforts to address the needs of poor children.

Addressing population health and achieving the Millennium Development Goals will require new ways of delivering services. One promising strategic approach is to integrate subsets of effective interventions that need to be delivered to the same families or communities. Examples of combinations of interventions for which integrated service delivery is, or should be, evaluated include combining ITNs with EPI outreach services with vitamin A, or combining community-based delivery of Nevirapine to pregnant women at risk of HIV with antenatal care and nutrition counselling. The potential to make greatest use of each contact between a child or mother and a health provider should be re-examined with every new initiative. Evidence of such broad, population-based public health thinking can be one criterion by which plans and proposals for specific initiatives are evaluated for support.

The need for a holistic approach

"...interventions for one specific disease will not necessarily lower the burden on the poor, because their underlying vulnerability makes it likely that one risk, or disease, avoided will be rapidly replaced by another."¹⁶⁰

Addressing both "supply" and "demand" in services for poor children

Achieving full implementation and reaching children living in poverty will require a two-pronged strategic approach: increasing the efficiency of the health system to provide access to services of adequate quality (the supply side), and putting in place mechanisms to better engage families and communities in preventing disease and caring for their sick children (the demand side). Health service delivery strategies, including financing options, must improve access through a combination of provider-based and consumer-based interventions.

Shifting the balance toward community-based or demand-side strategies will not be enough to improve the health of poor children. This shift can contribute only to the extent that strategies for improving both supply and demand are designed to redress inequities.

Experience in public health initiatives with other population groups can provide lessons about how to reach the poor. Safe Motherhood, for example, has greatly expanded the evidence base on demand issues.

Allocating resources for improved service delivery for poor children and families

Child health policymakers and planners often overlook the importance of financing in their efforts to improve service delivery for poor children. There is an array of financing sources and options available to governments, although few reports of systematic evaluation of their impact and implications are yet available. Options that go beyond the types of donor initiatives described above for strengthening the financing of health services for poor children include:

- **Government budgets.** There are strong and repeated recommendations that governments increase their routine spending for health care, despite shrinking economies and uncertain political futures. The key recommendation of the Macroeconomic Commission on health, as identified by the commissioners themselves, is that the governments of all countries should "...scale up the access of the world's poor to essential health services, including a focus on specific interventions".⁶¹
- **Insurance.** Insurance schemes are being tried in several countries as a way to extend coverage to the poor and other specific population groups. Examples include Mexico, where school enrolment in poor regions carries health insurance with it; South Africa, where an insurance scheme has been developed for poor children; and Egypt, where insurance coverage has been extended to all children and includes the poorest groups.⁶² There are few instances of systematic evaluation of these or other insurance strategies for improving health service delivery to the poor.
- **Community-based financing.** Such schemes have been widely promoted, but a recent review of community-based approaches to health care financing for the poor has found that most had not been sustained after the end of the initial pilot period.⁶³
- **Donor assistance, including low-cost loans and grants** available through regional and international lending institutions. High-income countries need to greatly increase amounts of money available as grants and low-cost loans to the poorest countries to address health needs

Whatever the mechanism used to finance health services, it is essential that the needs of the poorest be recognized as special, and that specific steps be taken to avoid further restricting their access to health services. Monitoring and evaluation mechanisms should be put in place to detect any possible adverse effects on the health of the poorest of new approaches to financing.

Involving the private sector

In settings where private-sector health services exist, the poor as well as the rich use them. Better coordination with the private sector has also been proposed as a way for governments and donors to improve the availability, quality, and effectiveness of child health services. Few data are yet available to evaluate this claim.

There is, however, an increasing bank of experience in involving the private sector in child health services. One specific option, contracting, is receiving increasing attention as a possible strategy to improve health sector efficiency. Governments may contract with either government or non-government providers to provide health services to the public. In addition to service provision, the private sector plays a significant role in a number of other areas that are critical for child health, such as manufacturing and marketing of fortified foods, impregnated bed-nets, vaccines, and drugs. Many non-governmental organizations are active in promoting healthy behaviours and social marketing.

Collaboration with the private sector also presents significant challenges. For example, the diversity of private sector providers can make it difficult for governments and donors to identify opportunities and establish mechanisms for cooperation.⁶⁴ More rigorous evaluation is needed of the impact and sustainability of private-sector strategies as a way to improve the health of poor children.

Allocating resources to health services: finding the right combination of options

Governments play an important role in the financing of health care. They determine how and when revenues are collected, how they are pooled, and the ways in which they are used to secure the delivery of health services. Governments must also provide stewardship in allocating revenues once they are available. Many different combinations of financing options have been, or are being, tried by governments and their partners. Each of these experiments is taking place within a specific economic, political and administrative context, making it difficult to generalise the lessons learned from one setting to another. The knowledge base for the effectiveness of these options is thin – there has been little evaluation, and common sense suggests that what works in one context may not work in another. The options below can serve as a starting point for further thinking, trial and debate.

- *Risk pooling* suggests that resources mobilized from various sources can be put together, or “pooled”, and then used to redistribute resources in ways that reduce poverty and improve equity. For example, all insurance schemes pool risk. Risk pooling through insurance of some form can reduce or eliminate risk, and in large insurance schemes, especially public insurance schemes that include the poor, may increase utilization of child health services by the poor. Levels of pooling tend to increase in countries as per capita income increases. Lower-income countries generally pool less than half of all funds available for health services.
- *Targeting* is defined as efforts to focus development programmes more directly on the poor, including targeting by specific geographic areas, age groups, diseases or individuals who are poor. No large-scale evaluation of effectiveness of targeting strategies has yet been conducted. A recent review of experience, however, suggests that the implementation of several targeting methods simultaneously may yield greater impact than using a single mechanism, and that both the targeting of poor individuals (for example, through exemptions from fee-for-service requirements) and targeting by age and disease may lead to improved health outcomes for the poor.⁶⁵
- *Contracting* proposes that ministries of health can maximize the effectiveness of health service delivery by developing performance-based agreements and contracts with public providers, non-governmental organizations or the private sector. Full-scale evaluation of the cost-effectiveness of contracting as a financing option to improve the determinants of child health outcomes has not yet been conducted, but this approach is being tried in a number of countries.
- *Payment mechanisms* for health facilities or workers are another financing option to be considered. Some forms of simple per capita payments with a bonus for performance measures have increased utilization and access for children and mothers in Rwanda,⁶⁶ Haiti⁶⁷ and Kyrgystan.⁶⁸ Adjusted salary levels based on performance were used in Bangladesh to pay health workers to teach mothers how to prepare and administer oral rehydration solutions and to help mothers prevent diarrhoea in their children. Child mortality rates fell after implementation.⁶⁹ Payment per service (“fee-for-service”) has been associated with improved preventive and “high-priority” services, such as in rural Romania where vaccinations to poor children increased in just a few months.⁷⁰

How can we reach poor children with effective interventions?

We do not yet have a full answer to this question. More systematic analysis of experience and more monitoring and evaluation of interventions are needed to find ways of delivering services to poor children and families at home, in the community and in health facilities.

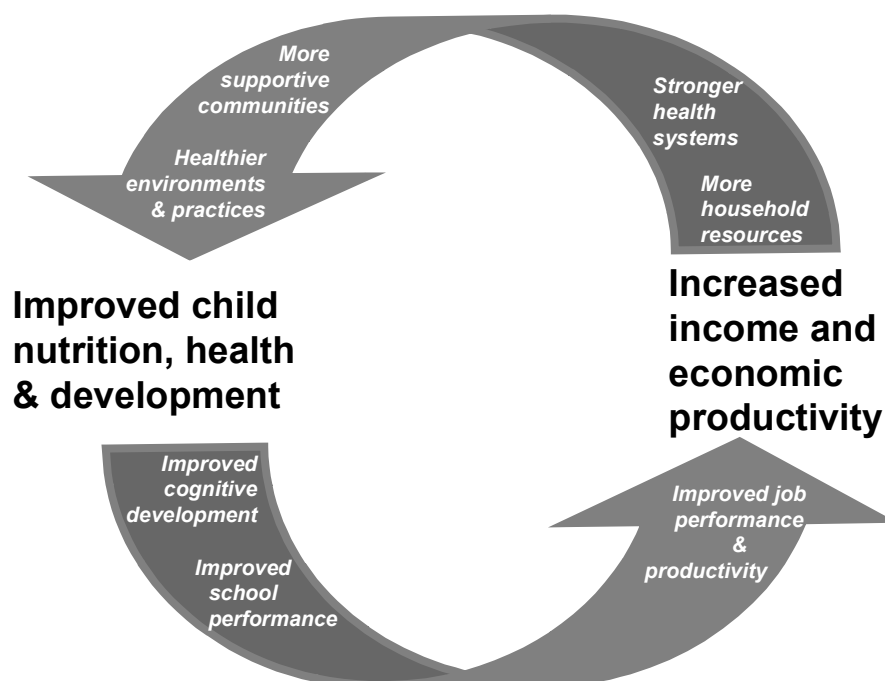
What are the economic benefits of investing in child health and nutrition?

Thus far the *Special Report* has focused on the effects of poverty on child health outcomes, inequities between children in poor and rich families and communities in the factors that contribute to healthy development, and the availability of effective interventions to improve child health. Every child has the right to good health and full development, and the inequities we have reviewed thus far are more than sufficient justification for working hard to reduce child health inequities.

An added benefit, however, is that there are important economic reasons to commit resources to child health. As illustrated in Figure 9, the association between poverty and child health status moves in both directions.

FIGURE 9: EXAMPLES OF THE LINKS BETWEEN CHILD NUTRITION, HEALTH & DEVELOPMENT AND ECONOMIC PRODUCTIVITY.

There are many ways in which improved child health can lead to increased economic productivity, and vice versa.



Safeguarding health during childhood is more important than at any other age. Poor health in the early years can permanently impair human capital. Health is like a stock investment that is part of each person's human capital endowment. The value of

this stock at a given point in time is the cumulative result of all health investments in the past, and particularly those that take place in early childhood.

Insights from economics

The global community is increasingly focusing on the links between health and economic development. Analyses of cross-country macroeconomic data show that life expectancy at birth and child mortality are strongly associated with future economic growth.^{71,72, 73,74} Some examples from the findings of these studies are summarized below.

- Health factors can explain about 50% of the difference in economic growth rates between Africa and the rest of the world for the years from 1965 to 1990.⁷⁵
- The WHO Commission on Macroeconomics and Health (MCH) reports that countries with high levels of human development had robust and stable economic growth at an average of 2.3% per year between 1990 and 1998. The comparable growth rate for countries with mid-level human development was 1.9%, and among countries with the poorest levels of human development the growth rate was close to zero.⁶⁴ The MCH Report concludes that there is “...powerful evidence about [health’s] instrumental value in furthering economic growth”.⁷⁶
- Historical studies have shown that improvements in health were one of the main reasons for the rapid growth in productivity experienced by Britain during the first phase of the Industrial Revolution.⁷⁷

The relationship between health and economic growth is not simple and direct. Economic development alone cannot explain variations in health status. For example, among countries with a gross national product of US\$600 per capita, life expectancy at birth is 69 years in Honduras and 51 years in Senegal.⁷⁸ Similarly, improved child health does not guarantee better economic performance. Among the “good performers” on child health status indicators, for example, we find Cuba, Sri Lanka, and the Indian state of Kerala.

There are many pathways by which improved health can lead to higher incomes and better economic growth. For adults, some of these pathways include higher labour force participation and greater productivity, increased savings, later retirement, and better use of natural resources. An example of this last category is the cultivation of land in areas where there had formerly been so much malaria that workers could not tend the fields.

For children, the pathways through which improved health can lead to higher income and better economic growth are different from those studied for adults. The time-frame needed is also longer, because most children do not contribute directly to their family’s income until they are older.

Some of the pathways for children are:

- Better cognitive development;
- Increased attendance and participation in school;
- Greater capacity for work and higher productivity as an adult;
- Greater participation by parents in the labour force, because their children are less often ill; and
- Over time, an increased willingness to commit resources to children because they are more likely to survive and to be healthy.

We describe some of these pathways in more detail below.

Improving child health and educational attainment

The effects of improved health and nutritional status on children's cognitive development and educational attainment have been studied for many conditions. We focus here on those that represent a significant health burden for children under five, and that have been shown to have significant effects on later school performance.

Malnutrition. The impact of severe malnutrition on cognitive function has been demonstrated most clearly in infants and preschool children.^{79,80} Early childhood malnutrition can lead to cognitive impairments that last into the school-age years. Grantham-McGregor and her colleagues found that a combination of psychosocial stimulation and supplementary feeding was more effective than either intervention alone in improving cognitive development and growth among preschool children.⁸¹

Iron deficiency has also been associated with poorer cognitive function in preschool and young school-age children.⁸² Iron supplementation improves cognitive function, particularly attention, after only two months of use.

Iodine deficiency has its most profound effects during pregnancy, leading to cretinism and severe mental retardation. However, even mild neonatal iodine deficiency can lead to long term neuropsychological impairments.⁸³ Iodine deficiency in school children has also been associated with impaired cognitive ability and poor school performance.⁸⁴

Malaria. Malaria can affect school attendance and performance. For example, a study in the Congo concluded that malaria was responsible for 36% of school absenteeism in the high transmission season but only 3% in the low transmission season.⁸⁵ A recent study in Sri Lanka documents associations between uncomplicated malaria and the cognitive performance of school-age children.⁸⁶ Cerebral malaria, most common among children, has also been associated with cognitive impairments.⁸⁷ Few evaluation studies of malaria interventions have assessed educational outcomes. One study has documented improved school attendance in villages taking part in a bed-net trial.⁸⁸

The “demographic gift”

Reductions in child mortality—and the subsequent reductions in birth rate—have important consequences for economic growth. The initial effect of decreasing child mortality is reduction of economic growth, as there are more children to feed. But later, as the birth rate falls and the surviving children become adults and enter the labour force, there are relatively more workers and relatively fewer very young and very old people that depend on them. This provides a stimulus to economic growth, known as the “demographic gift”. Estimates suggest that this gift may have accounted for nearly two percentage points of East Asia's average economic growth of 6% per annum over the period 1965-90.⁸⁹ Africa, by contrast, has only recently begun to see any appreciable demographic gift, and the estimated contribution for 1990-2025, on current trends, is somewhat smaller than that experienced earlier by East Asia (1.6% per annum).

The “demographic gift “ illustrates that investing in child health will lead to economic growth. The results are not immediate, but an investment in reducing child deaths and improving child health today will yield sustained economic benefits in years to come.

What are the economic benefits of investing in child health and nutrition?

Healthy children is a goal in itself. In addition, however, healthy children are more likely to develop to their full potential, to perform well in school, to be more productive on the job, and to have healthy children themselves. Investments in child health today will contribute to economic growth tomorrow.

Putting knowledge into action: better health for poor children

Governments and their partners must act now to address the health needs of poor children, families and communities. Immediate steps are clear:

- Make and sustain a ***strong political commitment*** to strengthen and expand efforts to address the needs of poor children, and to meet international targets for the reduction of poverty, infant and child mortality, and undernutrition.
- Improve health outcomes among poor children by devoting ***increased resources*** to the delivery of essential health services to the poor and by ensuring that they are not penalized by health sector reform.
- Strive for ***high and sustained coverage*** of infant and child populations with interventions known to be effective, especially interventions that help families and communities care for their young, and that improve the quality of health services.
- Support continuing efforts to ***understand and address the underlying factors*** that determine the environment and the behaviour of those who care for children.

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