The state of the world’s children 2008

The under-five mortality rate: The indispensable gauge of child health

The under-five mortality rate, often known by its acronym U5MR or simply as the child mortality rate, indicates the probability of dying between birth and exactly five years of age, expressed per 1,000 live births, if subject to current mortality rates. It has several advantages as a barometer of child well-being in general and child health in particular. First, it measures an ‘outcome’ of development processes rather than an ‘input’, such as per capita calorie availability or the number of doctors per 1,000 population – all of which are means to an end.

Second, the U5MR is known to be the result of a wide variety of inputs: the nutritional status and the health knowledge of mothers; the level of immunization and oral rehydration therapy; the availability of maternal and child health services (including prenatal care); income and food availability in the family; the availability of safe drinking water and basic sanitation; and the overall safety of the child’s environment, among other factors.

Third, the U5MR is less susceptible to the fallacy of the average than, for example, per capita gross national income (GNI per capita). This is because the natural scale does not allow the children of the rich to be 1,000 times as likely to survive, even if the human-made scale does permit them to have 1,000 times as much income. In other words, it is much more difficult for a wealthy minority to affect a nation’s U5MR, and it makes scale does permit them to have 1,000 times as much income. In other words, it is much more difficult for a wealthy minority to affect a nation’s U5MR, and it therefore presents a more accurate, if far from perfect, picture of the health status of the majority of children (and of society as a whole).

Underlying and structural causes of maternal and child mortality

Maternal, newborn and under-five deaths and undernutrition have a number of common structural and underlying causes, including:

- Poorly resourced, unresponsive and culturally inappropriate health and nutrition services.
- Food insecurity.
- Inadequate feeding practices.
- Lack of hygiene and access to safe water or adequate sanitation.
- Female illiteracy.
- Early pregnancy.
- Discrimination and exclusion of mothers and children from access to essential health and nutrition services and commodities due to poverty and geographic or political marginalization.

These factors result in millions of unnecessary deaths each year. Their wide-ranging nature and interrelatedness require them to be addressed at different levels – community, household, service provider, government and international – in an integrated manner to maximize effectiveness and reach.

The solutions to these impediments are well known, particularly those relating to the direct causes of maternal, neonatal and child deaths. The necessary interventions involve the provision of packages of essential primary-health care services for children across a continuum of care that spans pregnancy, childbirth and after delivery, leading to care for children in the crucial early years of life (see Panel, page 17, for a full definition of the continuum of care).

Improving vitamin A status can strengthen a child’s resistance to disease and decrease the likelihood of childhood mortality. For only a small sum, a child can be protected from vitamin A deficiency and a number of deadly diseases, including diphtheria, pertussis, tetanus, polio, measles, childhood tuberculosis, hepatitis B and Hib (Haemophilus influenzae type b), which is a major cause of pneumonia and meningitis. Providing cotrimoxazole, a low-cost antibiotic, to HIV-positive children dramatically reduces mortality from opportunistic infections.

Improvements in child health and survival can also foster more balanced population dynamics. When parents are convinced that their children will survive, they are more likely to have fewer children and provide better care to those they do have – and countries can invest more in each child.
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See References, page 104.

The benefits of meeting Millennium Development Goal 4 – and the cost of failing to reach the goal

The report begins by examining the state of child survival and primary health care for children, with a strong emphasis on trends in child mortality. It then appraises the lessons from failures and successes in child survival over the past century. The centrepiece of the report looks at several of the most promising approaches – community partnerships, the continuum of care framework and health-system strengthening for outcomes – to reach those mothers, newborns and children who are currently excluded from essential interventions. By highlighting examples from countries and districts where these have been successful, as well as exploring the main challenges to their expansion, this report offers practical ways to jump-start progress.

Why child survival matters

Investing in the health of young children makes sense for a number of reasons beyond the pain and suffering caused by even one child’s death. Depriving infants and young children of basic health care and denying them the nutrients needed for growth and development sets them up to fail in life. But when children are well nourished and cared for and provided with a safe and stimulating environment, they are more likely to survive, to have less disease and fewer illnesses, and to fully develop thinking, language, emotional and social skills. When they enter school, they are more likely to succeed. And later in life, they have a greater chance of becoming creative and productive members of society.

Investing in children is also wise from an economic perspective. According to the World Bank, immunization and vitamin A supplementation are two of the most cost-effective public health interventions available today. Improving vitamin A status can strengthen a child’s resistance to disease and decrease the likelihood of childhood mortality. For only a small sum, a child can be protected from vitamin A deficiency and a number of deadly diseases, including diphtheria, pertussis, tetanus, polio, measles, childhood tuberculosis, hepatitis B and Hib (Haemophilus influenzae type b), which is a major cause of pneumonia and meningitis.

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See References, page 104.
Until the mid to late 1990s, estimates of the number of child deaths occurring during the neonatal period (the first month of life) were drawn from rough historical data rather than from specific surveys. More rigorous estimates for newborn deaths emerged in 1995 and 2000, as data from reliable household surveys became available. Analysis of these data made it evident that previous estimates had seriously understated the scale of the problem. Although the global neonatal mortality rate has decreased slightly since 1980, neonatal deaths have become proportionally much more significant because the reduction of neonatal mortality has been slower than that of under-five mortality: Between 1980 and 2000, deaths in the first month of life declined by a quarter, while deaths between one month and five years declined by a third.

The latest evidence is that 4 million babies die each year in their first month of life, and up to half of these die in their first year than those whose mothers remain alive.

Even these figures understate the vast scale of the problems that affect child health during the neonatal period. For example, more than a million children who survive birth asphyxia each year go on to suffer such problems as cerebral palsy, learning difficulties and other disabilities. For every newborn baby who dies, another 20 suffer birth injury, complications arising from preterm birth or other neonatal conditions.

Significant improvements in the early neonatal period will depend on essential interventions for mothers and babies before, during and immediately after birth. According to the latest estimates for 2000–2006, at present in the developing world, one quarter of pregnant women do not receive even a single visit from a skilled health personnel (doctor, nurse, midwife); only 59 per cent of births take place with the assistance of a skilled attendant; and just over half take place in a health facility.

Averting neonatal deaths is pivotal to reducing child mortality. The Lancet Neonatal Survival Series, published in 2005, estimated that 3 million of the 4 million deaths could be prevented each year if high coverage (90 per cent) is achieved for a package of proven, cost-effective interventions that are delivered through outreach, families and communities, and facility-based clinical care across a continuum of neonatal care (antenatal, intrapartum and postpartum). While increasing skilled care is essential, the Neonatal Survival Series underlines the importance of interlinked solutions that can save almost 40 per cent of newborn lives in community settings. Expanding programmes that prevent mother-to-child transmission of HIV is also crucial.

Actions required to save newborns include setting evidence-based, results-oriented plans at the national level with specific strategies to reach the poorest, greater funding, agreed targets for neonatal mortality reduction, and promotion of greater harmonization and accountability on the part of stakeholders at the international level.

Figure 1.3
High-impact, simple interventions to save newborn lives within the continuum of maternal and child health care

- Skilled obstetric and immediate newborn care, including resuscitation
- Emergency obstetric care to manage complications, such as obstructed labour, breech, haemorrhage, pre-eclampsia and preterm labour
- Antibiotics for preterm rupture of membranes
- Corticosteroids for preterm labour
- Four-visit antenatal package including tetanus immunization, detection and management of syphilis, other infections, pre-eclampsia and pregnancy complications
- Malaria intermittent presumptive therapy
- Detection and treatment of bacteria
- Postnatal care to support health practices
- Early detection and referral of complications
- Birth preparedness and promotion of demand for care and readiness for emergencies
- Clean delivery
- Hygienic cord/skin care, thermal care, promoting early and exclusive breastfeeding
- Extra care for low birthweight babies
- Community case management for pneumonia
- Health home care, including breastfeeding promotion, hygiene, cord care, maternal care, promoting postnatal care for women

* Additional interventions for settings with stronger health systems and lower mortality.

** Situational interventions necessary in certain settings, such as areas of high malaria prevalence.

Note: This figure includes 16 interventions with proven efficacy in reducing neonatal mortality. Other important interventions are delivered during this time period but are not shown here because their primary effect is not on neonatal deaths (e.g., prevention of mother-to-child transmission of HIV). For some of the interventions listed, the service delivery mode may vary between settings.


See References, page 104.
Almost one third of the 50 least developed countries have managed to reduce their under-five mortality rates by 40 per cent or more since 1990.

Figure 1.7

Almost one third of the 50 least developed countries have managed to reduce their under-five mortality rates by 40 per cent or more since 1990.

The main proximate causes of child deaths

The countries and regions in which children under five are dying in large numbers are well known, and the main proximate causes of premature deaths and ill health are also well established.

Almost 40 per cent of all under-five deaths occur during the neonatal period, the first month of life, from a variety of complications (see Panel, page 4). Of these neonatal deaths, around 26 per cent – accounting for 10 per cent of all under-five deaths – are caused by severe infections. A significant proportion of these infections is caused by pneumonia and sepsis (a serious blood-borne bacterial infection that is also treated with antibiotics). Around 2 million children under five die from pneumonia each year – around 1 in 5 deaths globally. In addition, up to 1 million more infants die from severe infections including pneumonia, during the neonatal period. Despite progress since the 1980s, diarrhoeal diseases account for 17 per cent of under-five deaths. Malaria, measles and AIDS, taken together, are responsible for 15 per cent of child deaths.

Many conditions and diseases interact to increase child mortality beyond their individual impacts, with undernutrition contributing up to 50 per cent of child deaths. Unsafe water, poor hygiene practices and inadequate sanitation are not is insufficient to meet MDG 4 in full and on time.

Of most concern are the 27 countries that have registered scant progress since 1990 or have an under-five mortality rate that is stagnant or higher than it was in 1990. Of the 46 countries in sub-Saharan Africa, only Cape Verde, Eritrea and Seychelles are on track to meet MDG 4, and nearly half the countries have registered either no change or an increase in child mortality rates since 1990.

The region as a whole only managed to reduce child mortality at an average annual rate of 1 per cent from 1990–2006, and double-digit reductions will be needed during each of the remaining years if it is to meet MDG 4.

Individual countries face different challenges in child survival, without doubt some greater than others. But the notable achievements suggest that geography is no barrier to saving children’s lives. Perhaps most important, these gains are evident in some of the world’s poorest countries and across the developing regions, as illustrated in Figure 1.7. These gains suggest that remarkable progress is possible, despite such obstacles as geographic location or socio-economic disadvantage, when evidence, sound strategies, sufficient resources, political will and an orientation towards results are consciously harnessed to improve children’s lives.

Furthermore, dramatic improvements in child mortality and health can be rapidly attained. Since 1990, more than 60 countries have managed to reduce their under-five mortality rate by 50 per cent.

Figure 1.8

Global distribution of cause-specific mortality among children under five

Undernutrition is implicated in up to 50 per cent of all deaths among children under five.

Source: World Health Organization and UNICEF

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Pneumonia: The forgotten killer of children

Pneumonia kills more children than any other disease – more than AIDS, malaria and measles combined. It is a major cause of child deaths in every region. Children with pneumonia may exhibit a wide range of symptoms, depending on age and cause of the infection. Common symptoms include rapid or difficult breathing, cough, fever, chills, headaches, loss of appetite and wheezing. In young infants, severe cases of pneumonia can cause convulsions, hypothermia, lethargy and feeding problems.

In childhood, pneumonia and malaria have major overlaps in terms of symptoms, the requirements for their effective management and the feasibility of providing care in the community. In effect, especially in very young children, it may be impossible to tell whether a high fever, coughing and fast breathing is evidence of either pneumonia or malaria, and in such cases children often receive treatment for both. Once a child develops pneumonia, a caregiver must recognize the symptoms and seek appropriate care immediately.

Healthy children have natural defences that protect their lungs from the pathogens that cause pneumonia. Undernourished children, particularly those who are not exclusively breastfed or have inadequate zinc intake, or those with compromised immune systems, run a higher risk of developing pneumonia. Children suffering from other illnesses, such as measles, or those living with HIV, are more likely to develop pneumonia. Environmental factors, such as living in crowded homes and being exposed to parental smoking or indoor air pollution, may also play a role in increasing children’s susceptibility to pneumonia and its consequences.

Prevention is as important as cure in reducing child deaths from pneumonia. The key preventive measures for children are adequate nutrition (including exclusive breastfeeding, vitamin A supplementation and zinc intake), reduced indoor air pollution and increased immunization rates with vaccines that help prevent children from developing infections that directly cause pneumonia, such as Haemophilus influenzae type b (HIB), and with those immunizations that prevent infections that can lead to pneumonia as a complication (e.g., measles and pertussis). Vaccines to protect against Streptococcus pneumoniae – the most common cause of severe pneumonia among children in the developing world – will be increasingly becoming available for infants and young children.

Since a large proportion of severe pneumonia cases in children of the developing world are bacterial in origin – mostly Streptococcus pneumoniae or Haemophilus influenzae – they can be effectively treated using inexpensive antibiotics at home, provided that families and caregivers follow the advice they receive and treat the child correctly, including returning for help as necessary. If these conditions are in place, evidence from across the developing world suggests that community-based management of pneumonia can be very effective. A meta-analysis of results from nine studies in seven countries, including the United Republic of Tanzania, that investigated the impact of community-based care management of pneumonia revealed substantial reductions not only in pneumonia mortality but in child mortality more generally. Trials resulted in a reduction of mortality of 26 per cent and a 37 per cent reduction in mortality from pneumonia.

See References, page 104.

Figure 1.10 More than half of children under five with suspected pneumonia are taken to an appropriate health provider

Progress towards the other health-related MDGs is mixed

Although advancements on all eight Millennium Development Goals are important to the survival and well-being of children, MDGs 1, 5, 6, 7 and 8, as well as MDG 4, have targets that directly affect children’s health. Progress in the areas targeted by these goals could have a dramatic effect on the lives and prospects of children.

Enhancing nutritional status (MDG 1)

Undernutrition is the main underlying factor for up to half of all deaths of children under five. Improving nutrition and achieving MDG 1, which aims to reduce poverty and hunger, would help avert child deaths from diarrhoea, pneumonia, malaria, HIV and measles, and it would reduce neonatal mortality. In other words, improving maternal and child nutrition is a prerequisite for achieving MDG 4.

The standard indicators used to measure MDG 1, however, do not reveal the full extent of undernutrition among children in the developing world. One of the indicators focuses on hunger, as measured by the proportion of children under five who are underweight. But that captures only one dimension of nutrition. A child may die from a weakened immune system when vitamin A is lacking, for example, without being apparently hungry or underweight.

Adequate nutrition needs to begin during a mother’s pregnancy and continue when a child is born. Immediate and exclusive breastfeeding is the best source of nutrition for a child, providing physical warmth and strengthening the immune systems. Micronutrients such as iron, vitamin A and iodine can also have a profound impact on a child’s development and a mother’s health. In cases of severe acute undernutrition, specific therapeutic foods are advised. Although these remedies are low-cost and highly effective, millions of children and mothers still do not have access to or are not adopting them. More than 30 per cent of households in the developing world do not consume iodized salt. More than 60 per cent of infants were not exclusively breastfed during the first six months of life, and 28 per cent lacked full coverage (two doses) of vitamin A supplementation in 2005.

Improving maternal health (MDG 5)

To reduce child mortality, improving the health of pregnant women and new mothers is critical. More than half a million women die each year due to pregnancy-related causes, and many more suffer debilitating long-term effects, such as fistula, that could be easily avoided through adequate maternal care. Furthermore, improved maternal health is vitally important for a child’s prospects of survival. Evidence shows that a motherless child is more likely to die before reaching age two than infants whose mothers survive.5

Improving the health and nutrition of mothers-to-be and providing quality reproductive health services are pivotal to addressing many underlying causes of child mortality. Poor nutrition in women can result in preterm births and babies with low weight at birth. Visits to, or from, a trained health-care provider during pregnancy can help avert early deliveries and neonatal tetanus, which is almost always fatal. A skilled

Figure 1.11 South Asia has the highest level of undernutrition among the regions

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<th>Percentage of Under-fives with Suspected Pneumonia Taken to an Appropriate Health-care Provider</th>
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*Data refer to the most recent year available during the period specified.
The continuum of maternal, newborn and child health care across time and place

The continuum of maternal, newborn and child health care emphasizes the interrelationships between undernutrition and the deaths of mothers, newborns and children. The continuum consists of a focus on two dimensions in the provision of packages of essential primary-health-care services:

- **Time:** The need to ensure essential services for mothers and children during pregnancy, childbirth, the postpartum period, infancy and early childhood (see Figure 1.18). The focus on this element was engendered by the recognition that the birth period – before, during and after – is the time when mortality and morbidity risks are highest for both mother and child.

- **Place:** Linking the delivery of essential services in a dynamic primary-health-care system that integrates home, community, outreach and facility-based care (see Figure 1.18). The impetus for this focus is the recognition that gaps in care are often most prevalent at the locations – the household and community – where care is most required.

The continuum of care concept has emerged in recognition of the fact that maternal, newborn and child deaths share a number of similar and interrelated structural causes with undernutrition. These causes include such factors as: food insecurity, female illiteracy, early pregnancy and poor birth outcomes, including low birthweights; inadequate feeding practices, lack of hygiene and access to safe water or adequate sanitation; exclusion from access to health and nutrition services as a result of poverty, geographic or political marginalization; and poorly resourced, unresponsive and culturally inappropriate health and nutrition services.

The continuum of care also reflects lessons learned from evidence and experience in maternal, newborn and child health during recent decades. In the past, safe motherhood and child survival programmes often operated separately, leaving disconnections in care that affected both mothers and newborns. It is now recognized that delivering specific interventions at pivotal points in the continuum has multiple benefits. Linking interventions in packages can also increase their efficiency and cost-effectiveness. Integrating services can encourage their uptake and provide opportunities to enhance coverage. The primary focus is on providing universal coverage of essential interventions throughout the life cycle in an integrated primary-health-care system.

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**Figure 1.18 Connecting caregiving across the continuum for maternal, newborn and child health**

The projected impact of achieving a high rate of coverage with a continuum of health care could be profound. In sub-Saharan Africa, achieving a continuum of care that covered 90 per cent of mothers and newborns could avert two thirds of newborn deaths, saving 800,000 lives each year.

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**Figure 1.19 Connecting caregiving between household and health facilities to reduce maternal, newborn and child deaths**


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**Figure 1.17 The 60 priority countries for child survival targeted by Countdown to 2015**

of at least 90 per 1,000 live births. In 2005, these 60 countries accounted for 93 per cent of all deaths of children under five worldwide. Of these, only seven – Bangladesh, Brazil, Egypt, Indonesia, Mexico, Nepal and the Philippines – are considered to be on track to meet MDG 4. In contrast, 19 of the priority countries will need to achieve annual reductions of 10 per cent or more per year to achieve the 2015 target.

Priority 2: Providing a continuum of care by packaging interventions and delivering them at key points in the life cycle

Astonishing results have been achieved by some child health programmes that target specific diseases and conditions. These “vertical” interventions, as they are known, are usually one-time events or disease-specific in nature, such as immunization campaigns covering one disease. Lessons from the past, explored in greater detail in Chapter 2, show that such programmes are ill-suited to providing the more comprehensive and sustained care that mothers, newborns and children need. More recent experience suggests that even greater progress is possible if these life-saving interventions were combined into “packages” of care and administered at key points in the life cycle.

Meeting the health needs of children, women and families presents considerable challenges in peace time. These challenges are compounded many times during emergencies, natural or human-made. Yet delivery of health services to populations in general and to children in particular is especially critical in these contexts. In effect, a significant proportion of the children who are not currently being reached through existing interventions live in countries where the delivery of health services has been severely disrupted. Between 1989 and 2000, 110 recorded conflicts took place; 103 of them were civil wars, many of them protracted, accompanied by institutional collapse and violence directed against civilians. At present, more than 40 countries, 90 per cent of them low-income nations, are dealing with armed conflict. UNICEF’s Humanitarian Action Report 2006 highlighted 29 emergency situations affecting children and women.

A complex emergency is defined broadly as a situation of armed conflict, population displacement and/or food insecurity, associated increases in mortality and malnutrition. Most of the major causes of child mortality in complex emergencies are the same as the top killers of children in general. They include measles, malaria, diarrhoeal diseases, acute respiratory infections and malnutrition. These are often compounded by outbreaks of other communicable diseases, such as meningitis, and nutrition-related deficiencies that can contribute substantially to child morbidity and mortality. The highest mortality rates in refugee populations, for example, tend to occur among children under five.

Child mortality rates are usually highest during the acute early phase of a complex emergency. By contrast, in post-emergency settings, where children have remained in stable refugee camps for prolonged periods, child mortality might be lower in the refugee population than among neighbouring resident children. Obstacles to the provision of health care to children in complex emergencies include limited access, cultural barriers, insecurity, limitations in resources such as drugs and supplies, and a lack of communication among the various organizations providing relief.

Community leadership and engagement is especially critical in these contexts. Contrary to the assumption that communities in situations of crisis are fragile and tend to fragment under the stress of war, famine or mass displacement, research increasingly suggests that some form of community mobilization is almost always possible and that important elements of community remain intact and even gain in importance under conditions of stress. Evidence from Ethiopia, Malawi and Southern Sudan focusing on the challenges of treating severe malnutrition in complex emergencies suggests that the success of an intervention depends critically on involving key community figures (such as traditional leaders, teachers and community health workers), as well as community organizations, volunteer networks and women’s organizations. In addition, involving traditional health practitioners can be equally important, because in many cases they are the first to be consulted in health-seeking behaviour and can therefore play a critical role in identifying severely malnourished children at an early stage.

Packaging and integrating proven, cost-effective interventions – for example, immunization and vitamin A supplementation – is efficacious. It also ensures a comprehensive approach to care for the children served. Recently, a package of 16 proven interventions was identified that could avert up to 72 per cent of all newborn deaths. These include tetanus toxoid immunization, skilled attendants at birth, access to obstetric care, immediate and exclusive breastfeeding, drying and keeping newborns warm, access to resuscitation, if needed, special care of low-birthweight infants and treatment of infection.

The timing of these packaged interventions can be crucial. More than half of all maternal and newborn deaths occur at birth and during the first few days of life, but this is also the period when health coverage is lowest. An effective continuum of care (see Panel, page 17) connects essential maternal, newborn and child health packages through pregnancy, childbirth, postnatal and newborn periods, and into childhood and adolescence. The advantage is that each stage builds on the success of the previous stage. For example, providing integrated services to adolescent girls means fewer unintended or poorly timed pregnancies. Visits to a health-care practitioner can prevent problems during pregnancy and make it more likely that mothers will get the appropriate care at birth. Skilled care before, during and immediately after birth reduces the risk of death or disability for both the mother and the baby. Continued care for children supports their right to health.

An effective continuum of care also addresses the gaps in care, whether in the home, community, health centre or hospital. Babies with birth asphyxia, sepsis or complications from a preterm birth can die within hours or even minutes if appropriate care is not provided. Because more than 60 million women in the developing world deliver at home, it is critical that a skilled attendant be present at birth with strong backup by a local health clinic or other first-level facility and the hospital, should complications arise. Quality of care at all of these levels is crucial.

Priority 3: Strengthening health systems and community partnerships

Delivering comprehensive health care for children requires preventive measures, as well as treatment of illness. Prevention typically requires behaviour changes that start in the household and can gain support through the community. Improvements in nutrition, for example, are often the result of better infant feeding practices by mothers or other caregivers, whether through breastfeeding or, later, by providing a diversified diet through kitchen or community gardens. Such practices must be learned by an individual and reinforced by the community. Wells, pumps and toilets are important to good hygiene. But their effectiveness depends on a community primed to maintain them and to use them. Children must learn to wash their hands and practise good hygiene, habits that are cultivated in the home, in school and among neighbours and friends.

As an integral part of the larger health system, community partnerships in primary health care can serve a dual function: actively engaging community members as health workers and mobilizing the community in support of improved health practices. They can also stimulate demand for quality health services from governments. Community involvement fosters community ownership. It can also add vitality to a bureaucracy-laden health system and is essential in reaching those who are the most isolated or excluded. As the following chapters in this report will show, many countries, including some of the poorest in the world, have implemented successful community-based health programmes. The challenge now will be to learn from their experiences, take the programmes to scale and reach the millions of children whom the health system, so far, has passed by.

Creating a supportive environment for child survival strategies

Prospects for child survival are shaped by the institutional and environmental context in which children and their families live. It comes as no surprise, for example, that infant and child mortality rates are highest in the poorest countries, among the most impoverished, isolated, uneducated and marginalized districts and communities, and in countries ravaged by civil strife, weak governance and chronic underinvestment in public health systems and physical infrastructure. Of the 11 countries where 20 per cent of all more of children die before age five – Afghanistan, Angola, Burkin’a Faso, Chad, the Democratic Republic of the Congo, Equatorial Guinea, Guinea-
Empowering women to advance maternal, newborn and child health

Empowering women, especially at the community level, is essential both to lowering the number of deaths among children under five and to reaching Millennium Development Goal 5, which aims to reduce maternal mortality by three quarters by 2015. Yet the low status of women in many societies and their limited decision-making power within the household often present serious challenges to achieving significant progress in either area. Analysis of the data from recent Demographic and Health Surveys in 30 countries, for example, suggests that in many households, especially in South Asia and sub-Saharan Africa, women have little influence in health-related decisions in households, whether concerning their own health or that of their children. In Burkina Faso, Mali and Nigeria, almost 75 per cent of women respondents reported that husbands alone make decisions about women’s health care. In the two countries surveyed in South Asia, Bangladesh and Nepal, this ratio was around 50 per cent.

This exclusion compromises the health and well-being of all family members, particularly women and children, and is often linked to high maternal and child mortality rates – all five countries mentioned above are among the 60 selected as priority countries for child survival by the Countdown to 2015 (see Figure 1.17, page 16, for further details). The situation is often most severe in rural areas or in urban slums, where women are largely illiterate and suffer from socio-cultural barriers to accessing health services, such as restrictions on leaving their homes or on interacting with strangers, and frequently do not have access to a health centre or a health clinic.

For example, in Afghanistan, women are prohibited from receiving health care at hospitals staffed exclusively by male health personnel, while cultural norms restrict women from working and receiving advanced medical training.

A number of community health worker programmes that train primarily women have successfully circumvented gender-based barriers to utilization of health services. In Bangladesh, the community health workers trained by BRAC are married, middle-aged women, and their ‘doorstep’ health services allow women to circumvent purdah restrictions that prevent them from leaving their homes to access health facilities on their own. In Pakistan, where in 1999 only about half the women of childbearing age were immunized against tetanus, a campaign initiated by the Ministry of Health succeeded in raising that proportion to 80 per cent of all women in a target group of 5 million women by relying on home visits by the Lady Health Workers, who were more acceptable to women than male vaccinators.

Furthermore, interventions that have enhanced women’s empowerment and leadership at the community level have been equally important in improving the health status of women and children. In Ghana, the prevalence of Guinea worm disease, which is spread by water and can incapacitate an infected person for months, required a comprehensive eradication campaign. Women volunteers, who were more familiar with the improved water sources than men, conducted door-to-door surveillance, distributed filters, identified potentially contaminated water supplies and provided community education. As a result, incidence of the disease fell by 36 per cent between 2002 and 2003. Similarly, in Puerto Rico, a programme to prevent dengue fever, carried out by WHO and the US Centers for Disease Control and Prevention, relied on community-nominated women to act as promoters. The women made house-to-house visits, interviewing heads of households and inspecting the premises for vector breeding sites. They also engaged in community-awareness activities, including the creation of a dengue prevention exhibit at the local supermarket. Through this strategy, 20 per cent of households joined the campaign. See References, page 105.

Bissau, Liberia, Mali, Niger and Sierra Leone22 – more than half have suffered a major armed conflict since 1989. Similarly, fragile states, characterized by weak institutions with high levels of corruption, political instability and a shaky rule of law, are often incapable of providing basic services to their citizens.

Institutional and environmental factors can sometimes be the dominant factor in child survival. In countries where AIDS has reached epidemic levels, for example, combating the syndrome is the main challenge for child survival. The scale and nature of the epidemic is such that all other interventions will prove ineffective unless AIDS is addressed. Countries that suffer from food insecurity or are prone to droughts are also at risk of having poorer child survival outcomes. The inability to diversify diets leads to chronic malnutrition for children, increasing their vulnerability to ill health and, ultimately, death.

The challenge of reaching children in countries with such intractable problems is daunting. Nevertheless, if the political will is there, there are steps these countries can take to create a supportive environment for child survival and development.

Create laws to protect children from violence, and see that they are enforced

Data from countries in the Organisation for Economic Co-operation and Development (OECD) indicate that among children under 18, infants less than a year old face the second-highest risk of dying by homicide. The risk of death is about three times greater for children under one than for those aged one to four, and the younger the child, the more likely that death will be caused by a close family member. Where deaths are not recorded or investigated, the extent of violence inflicted on children – and often socially condoned – with implications for child survival.

Forced marriage is another form of violence inflicted on children – and often socially condoned – with implications for child survival. When girls give birth before their bodies are fully developed, there is a much higher risk of death for both mother and child. Pregnancy-related deaths are the leading cause of mortality for girls 15–19 years old worldwide, whether they are married or not.25 Those younger than 15 are five times more likely to...
die in childbirth than women in their twenties. Their children are also less likely to survive. If a mother is under 18, her baby’s chances of dying during the first year of life are 60 per cent higher than those of a baby born to a mother older than 19.27 In addition to laws that prohibit child marriage and other forms of violence against children, a policy of zero tolerance should be adopted by countries seeking to create an environment in which children can survive and thrive. Another essential form of protection is birth registration of all children. This legal acknowledgement of the child’s existence is often required to access essential services, such as vaccinations and vitamin A supplementation. It also establishes family ties where inheritance is an issue.28

Educate and empower women

The latest estimates indicate that, on average, almost 1 out of every 4 adults (defined here as those age 15 and over) is illiterate. Almost two thirds are women, according to the most recent data from the UNESCO Institute for Statistics.29 Research shows that less-educated caregivers generally have poorer access to information on basic health care than their better-educated peers.30 Thus, in turn, can lead to ill-informed decisions about when and how to seek care for sick children.31 In contrast, evidence from Bangladesh shows that a child born to a mother with primary education is about 20 per cent more likely to survive compared to a child born to a mother with no education; the odds increase to 30 per cent when the mother has obtained a secondary education.32

Empowering women socially and economically can establish another path towards improving child survival. In many countries, women are deprived of basic decision-making responsibilities, even concerning their own health or that of their children. It is also well known that when women are in charge of household finances, they tend to spend a larger portion of the household budget on food and other necessities for children. For these reasons, giving women the means to become more economically self-reliant will likely have positive spin-offs for children.

Promote social equity

Because they are poor and disenfranchised, millions of women and children have been excluded from progress in recent decades. The disparities in child survival prospects between poor and better-off children are stark, not only among countries but within them. For example, in every country where data are available, children living in the poorest 20 per cent of households are far more likely to die before their fifth birthday than children living in the richest quintile of the population; in some countries the risk is up to five times higher.33 Policy interventions to eliminate these inequalities – that is,

Birth registration: An important step towards accessing essential services

The right to a name and a nationality is well established by the Convention on the Rights of the Child, which explicitly calls in article 7 for the registration of a child immediately after birth. Yet every year the births of around 51 million children go unregistered. These children are almost always from poor, marginalized or displaced families or from countries where systems of registration are not functional, and the consequences for their health and well-being are often severe and long-lasting.

Although sub-Saharan Africa has the highest proportion (86 per cent) of children not registered at birth, South Asia, with a corresponding ratio of 64 per cent, has the highest number. The challenges are particularly daunting in some countries, such as Afghanistan, Bangladesh, the United Republic of Tanzania and Zambia, where birth registration rates are very low due to the absence of effective and functioning birth registration systems. In Bangladesh and Zambia, UNICEF estimates that only 10 per cent of births are registered, while in the United Republic of Tanzania the registration rate is just 8 per cent.

Birth registration and access to health care in particular are closely linked, especially for children under five. For instance, data from several African countries suggest a close correlation between the presence of a skilled attendant at birth and child registration. In Benin, for example, 74 per cent of children who were delivered by a skilled attendant were registered, as compared to 28 per cent of those who were not. Furthermore, the data also suggest that birth registration levels are associated with the number of vaccinations received and with the provision of vitamin A supplementation, as well as with the level of medical care available. For example, in Chad, 38 per cent of children receiving vitamin A supplementation have been registered, compared to 15 per cent of those not receiving supplementation. Conversely, in the absence of birth registration, in many countries children are denied access to vital interventions or programmes.

The challenges encountered by parents in registering the birth of their children often signal and overlap with broader patterns of social exclusion and lack of access to social services. Thus, particularly in remote areas, parents often do not see the benefits of their own citizenship, let alone the benefits that birth registration would confer on their children. Furthermore, even when parents do plan to register a birth, the high cost of registration and long distances to registration centres often act as powerful deterrents. High cost in particular was revealed by a recent UNICEF analysis to be the primary reason for the lack of birth registration in no fewer than 20 developing countries, resulting in large registration disparities between rich and poor children. In the United Republic of Tanzania, where overall birth registration is very low, there is a strong disparity between rich and poor, with only 2 per cent of the poorest fifth of children being registered compared to 25 per cent of the richest fifth.

Achieving universal birth registration requires governments, parents and communities to work together to make birth registration a priority, and an integrated approach – such as combining national immunization campaigns with birth registration campaigns – often provides the best strategy. Where such cooperation has been achieved, it has led to remarkable results even in the most trying circumstances. In Afghanistan, in 2003, a nationwide campaign to register all children under the age of one was combined with the country’s National Polio Immunization Days. The campaign was expanded in 2004 and had reached 2 million children under five by mid-October of that year. See References, page 105.
Child survival in post-conflict situations: Liberia’s challenges and triumphs

by Ellen Johnson-Sirleaf, President of Liberia

According to the Women’s Commission for Refugee Women and Children, based in New York, a society’s treatment of children is a reflection of its worth. In the case of post-conflict Liberia, the country’s fate is inextricably tied to the fate of its most vulnerable population. The survival of children in Liberia is a fundamental underpinning of our development agenda because it shapes how we progress as a nation.

The impact of conflict on the survival of Liberia’s children is stark: At 235 deaths per 1,000 live births, Liberia’s under-five mortality rate is the fifth highest in the world; its infant mortality rate is the third highest and maternal mortality the twenty-first highest. Maternal mortality trends are an important benchmark for achieving Millennium Development Goal 4 and other health-related MDG targets for children because maternal health bolsters child survival – and without a sound policy on women’s development and empowerment, children in any post-conflict situation will ultimately be neglected reminders of a nation’s failures.

It is disconcerting that, despite all the improvements in modern medicine, children under five in Liberia still perish because of malaria (18 per cent of total deaths), diarrhoea and vaccine-preventable diseases, such as measles, neonatal tetanus, diphtheria, whooping cough and acute respiratory infections. Underlying these conditions are chronic malnutrition and vitamin and mineral deficiencies, which are common in children under five. Fifty-one per cent of the population is food insecure. HIV infection in pregnant women is estimated at 5.7 per cent in 2007 compared to 4 per cent in 2004 – another example of the impact of 15 years of conflict and the structural problems in the economy that disadvantage women and girls.

Access to basic health care is improving, but coverage and distribution remain inadequate, especially in the rural areas. The task of achieving universal access is enormous, owing to such devastating effects of armed conflict as the destruction of health infrastructure, low availability of trained health workers and low public sector resources for health. The Government of Liberia is making strenuous efforts to significantly reduce child morbidity and mortality by 2011. A national health policy and plan of action leading to universal access have been developed and are being implemented, while a national strategy and plan to accelerate child survival has been developed. A strategy and plan of action to serve as the ‘road map’ to reducing maternal mortality are under way. Peace has allowed immunization for young children and pregnant women to increase significantly.

The challenges remain, however. Safe water, essential for survival, had been available in the large population centres, including Monrovia, Liberia’s capital, prior to the conflict, but most of the piped systems were destroyed. Currently, other than Monrovia, where the piped water system is being gradually rehabilitated, urban centres are without access to pipe-borne water. Children cannot survive, much less thrive, without safe, potable drinking water, which stands at a low 32 per cent currently in Liberia.

Health and education are the pillars of any sound child survival strategy. The two are opposite sides of the same coin and must be tackled simultaneously in Liberia to ensure MDG 4. Illiteracy is high in the population, estimated at 68 per cent (male 55 per cent and female 81 per cent); literacy and education, especially of girls, are closely associated with improved child survival rates. The 2006 Girls’ Education Policy aims to provide education to all girls. In order to ensure child survival, girls and children also need to be protected. The conflict left many young girls pregnant or already mothers. Special efforts are needed to protect adolescent girls from sexual exploitation and abuse, from pregnancy and AIDS, both to ensure they enjoy their own rights to survival and to guarantee the rights of their children.

There needs to be renewed momentum around the issue of child survival, and Liberia is leading that clarion call. We want to ensure that our children move beyond survival and into a phase of development that enables them to thrive and transform into productive citizens.

Rising to the challenge of providing a continuum of care for mothers, newborns and children

These are the types of challenges that health-care providers face in reaching children currently excluded from essential services. The main challenge to child survival no longer lies in determining the proximate causes of or solutions to child mortality but in ensuring that the services and education required for these solutions reach the most marginalized countries and communities. As the rest of this report will show, many countries, including some of the poorest in the world, have made significant strides in reaching large numbers of children and families with essential services. Effective scale-up, however, requires that we learn from the lessons of recent decades – with a particular emphasis on strengthening integrated approaches to child health at the community level.

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The Government of Liberia is making strenuous efforts to that disadvantage women and girls.

Years of conflict and the structural problems in the economy that life-saving interventions these circumstances simultaneously, which further decreases the likelihood that life-saving interventions will reach them.

Successful approaches used to tackle these inequities include programmes to bring health interventions to those who are hardest to reach. Subsidizing health care for the poor and directing social marketing to those who have been excluded are other options. Perhaps most crucial is ensuring that equity is a priority in the design of child survival interventions and delivery strategies. Doing so will require a thorough knowledge of the situation through the collection of survey data, which can also be used for education and advocacy. Regular monitoring must be insti-

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mostly consisted of facility-based care. Training of local staff started with nursing schools. Because of the overwhelming workload, male and female nurses were soon running most peripheral services. District governments in some countries started clinics and small district hospitals, but in most countries mission hospitals provided 50–80 per cent of hospital beds. Public health focused on environmental protection, in particular on early efforts to provide safe water and improved sanitation facilities in urban areas.

Health services in francophone and other European colonies were uniquely different from those in anglophone countries, since the latter placed great emphasis on the Grandes Études programme. In this, separate levels of a national network focused on a single disease, such as sleeping sickness, elephantiasis, leprosy and other high-prevalence conditions affecting the capacity to work. Mass care was provided by mobile units, often generously equipped with complete travelling facilities. The rationale was that relying on outreach to treat patients at mass gatherings was more effective in reaching larger numbers of people than investing in static facilities. Repetitive cycles of treatment focused on simple curative interventions rather than on prevention and control.

As in Africa, the early Chinese hospitals were mainly established by missions. A national public health system began in the 1920s with efforts to control the rapidly spreading pneumonic plague in the province of Manchuria.

An important historical footnote is that the first published case study of successful community-based primary health care concerns a project of this period. The project took place in Ding Xian (formerly Ting Xi), about 200 kilometres south of Beijing. In this province of about half a million people, health care was provided by health workers who were the forerunners of China’s ‘barefoot doctors’. For a quarter of a century and for more than a fifth of the world’s population, China had one of the most equitable health systems ever designed. This experience provided important lessons for planning the 1978 International Conference on Primary Health Care that took place in Alma-Ata, Union of Soviet Socialist Republics (now Almaty, Kazakhstan). Early in the century, such countries as Denmark, the Netherlands, Norway and Sweden managed to reduce maternal mortality very quickly. The way in which skilled attendance at birth was organized appears to have been the major factor contributing to these gains. In the case of these four countries, efforts focused on providing professional care close to where women lived, mainly by enhancing the skills of community midwives.²

The Measles Initiative

The Measles Initiative shows how a well resourced, targeted and managed vertical initiative can reach scale rapidly and produce dramatic results. The initiative is a partnership that groups UNICEF and WHO with other leading international agencies and prominent private organizations. Launched in 2001, the Measles Initiative adopted the goal set at the UN General Assembly Special Session on Children in May 2002 to reduce deaths due to measles among children between 1999 and 2005. It has been the main sponsor of the mass campaign to boost measles vaccination, which has resulted in vaccinating more than 217 million children between 2001 and 2005 – mostly in Africa.

The results have exceeded the UN target: Measles deaths fell by 60 per cent between 1999–2005. Africa contributed 72 per cent of the absolute reduction in deaths. Estimates concluded that immunization helped avert almost 7.5 million deaths from the disease.

The reduction in measles deaths reflects support and commitment by the Measles Initiative to boosting immunization coverage and by national governments to following the WHO/UNICEF comprehensive strategy for reducing measles mortality. The strategy consists of four key components:

- Provide at least one dose of measles vaccine, administered at nine months of age or shortly after, through routine vaccination coverage of at least 90 per cent of children in each district and nationally.
- Give all children a second opportunity for measles vaccination.
- Establish effective surveillance.
- Improve clinical management of complicated cases – including vitamin A supplementation.

Measles control activities are contributing to health-system development in several ways – for example, through promoting safe injection practices, developing enhanced cold chain capacity for vaccination storage and establishing the development of a global public health laboratory network. In addition, vaccination campaigns are often combined with other essential interventions as vitamin A supplementation, deworming medicines and the distribution of insecticide-treated mosquito nets.

A new global goal was set at the World Health Assembly in May 2005 – to reduce measles deaths by 90 per cent by 2010, compared to 2000 data. The target is challenging, and its attainment will require sustaining the progress made in those countries that performed well and making large inroads in countries with high numbers of measles deaths, such as India and Pakistan. There is some way to go in the fight against measles – 345,000 people died of the disease in 2005, and 90 per cent of them were children under five. This highly contagious disease remains an important cause of under-five deaths, accounting for about 4 per cent of the global burden. It weakens children’s immunity to other life-threatening diseases and conditions, including pneumonia, diarrhoea and acute encephalitis, and remains one of the leading causes of vaccine preventable deaths among children.

The success of efforts to reduce measles in 1989–2005 has shown what can be done if political will, financial commitment and sound strategies on the part of international partners and national governments are implemented to deliver proven, cost-effective treatments. Provided that this degree of commitment is sustained, there is every reason to believe that the new target can be met, helping advance progress towards Millennium Development Goal 4.

LESSONS LEARNED FROM EVOLVING HEALTH-CARE SYSTEMS AND PRACTICES

Figure 2.1

Global burden of measles deaths*

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of Deaths</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Pacific</td>
<td>1,000,000</td>
<td>16%</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>350,000</td>
<td>5%</td>
</tr>
<tr>
<td>Americas</td>
<td>&lt;1,000,000</td>
<td>&lt;0.15%</td>
</tr>
<tr>
<td>South-Eastern Mediterranean</td>
<td>350,000</td>
<td>5%</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>500,000</td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td>Africa</td>
<td>126,000</td>
<td>2%</td>
</tr>
</tbody>
</table>

* Regions refer to World Health Organization regions.

the sharp fall in the global under-five mortality rate, from 115 per 1,000 live births in 1980 to 93 in 1990 – a reduction of 19 per cent over the course of the decade.

**Focusing on integrated, sector-wide approaches and health systems: 1990s**

Despite the gains of selective primary health care, by the late 1980s, health systems in many developing countries were under severe stress. Population growth, the debt crisis in many Latin American and sub-Saharan African countries, and political and economic transition in the former Soviet Union countries, and political and economic transition in the former Soviet Union and Central and Eastern Europe were but three of the contributing factors.

In response, a number of countries embarked on efforts to reform deteriorating, under-resourced health systems, raise their effectiveness, efficiency and financial viability, and increase their equity.

**The Bamako Initiative**

One such approach used by many countries was the Bamako Initiative, which was launched in 1987 at the World Health Organization meeting of African health ministers in Bamako, Mali. This strategy focused on increasing access to primary health care and meeting basic community needs in sub-Saharan Africa by delivering an integrated minimum health-care package through health centres. A strong emphasis was placed on access to drugs and regular contact between health-care providers and communities. (See Panel, page 36, for further details on the Bamako Initiative.)

**Integration**

The emphasis on integrating essential services that was a central feature of the Bamako Initiative was to become the driving force of approaches in the 1990s. Integrated approaches sought to combine the merits of selective primary care and primary health care. Like selective approaches, they placed a strong emphasis on providing a core group of cost-effective solutions in a timely way to address specific health challenges; like primary health care, they also focused attention on community participation, intersectoral collaboration and integration in the general health-delivery system.

A long-standing example of the greater emphasis on integration during the 1990s is IMCI, the Integrated Management of Childhood Illness. Developed in 1992 by UNICEF and WHO, and employed in more than 100 countries since then, IMCI adopts a broad, cross-cutting approach to case management of childhood illness, acknowledging that there is usually more than one contributing cause. Indeed, in many cases, sick children exhibit overlapping symptoms of disease, complicating efforts to arrive at a single diagnosis even in communities with adequate first-level examination facilities, let alone those with more challenging circumstances.

IMCI strategies have three primary components, each of which requires adaptation to the country context:

- **Improving health worker performance:** This involves training health workers to assess symptoms of diseases, correct mapping of illness to treatment, and provision of appropriate treatment to children and information to the caregivers. Through provision of locally adapted guidelines, health staff are taught case management skills for five major causes of childhood mortality: acute respiratory infections, especially pneumonia; diarrhoeal diseases; measles; malaria; and undernutrition.

**Health sector financing: Sector-wide approaches and the Heavily Indebted Poor Countries Initiative**

During the 1990s, concerns escalated about the potential predominance of vertical approaches, which tend to create and utilize managerial, operational and logistical structures separate from those of the national health system to address disease control. These concerns contributed to the development of a new mode of health financing: sector-wide approaches (SWAs). Under SWAs, the major funding contributions for the health sector support a single plan for sector policy, strategy and expenditure backed by government leadership. Common approaches to health service delivery are adopted across the sector, and government procedures increasingly control the disbursement and accounting of funds.

SWAs were created for several purposes: to address the limitations of project-based forms of donor assistance, ensure that overall health reform goals were met, reduce large transaction costs for countries and establish genuine partnerships between donors and countries in which both had rights and responsibilities. SWAs are a dynamic process rather than an end point, and they display considerable variation across countries. SWAs have led to greater dialogue and trust, a sharper focus on a select number of key sector priorities and closer links between policy and implementation. However, constraints include an overemphasis on planning and the development of procedures; limited civil society participation; weak performance management; and a slow shift from emphasizing donor coordination to considering service improvement and results.

At the end of the 1990s, in the context of the Heavily Indebted Poor Countries Initiative implemented by the International Monetary Fund and the World Bank, the focus on the health sector and financing reform in many low-income countries broadened to include Poverty Reduction Strategy Papers (PRSPs). Medium-term expenditure frameworks, the multi-annual public planning instruments associated with PRSPs, are used to plan future budget requirements for public services and to assess the resource implications of policy changes and new programmes.

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National immunization days (NIDs) originated as one-day mass polio vaccination campaigns across the developing world, NIDs, which still take place in many countries, are supplementary and do not replace routine immunization. Their original aim was to prevent the spread of polio by immunizing all children under the age of five, regardless of their previous polio vaccination history.

The concept of setting aside a day for mass interventions on child health is not new. Successful trials of days took place in the 1980s in such places as Burkina Faso, Colombia and Turkey. More recently, active civil wars have been halted to provide days of tranquility that allow children to be safely vaccinated in such countries as Angola, Sierra Leone and Somalia. Mass vaccinations allow for economies of scale, as skilled professionals can supervise a cadre of volunteers, especially for oral polio vaccine, which does not require a needle and syringe.

Child health days have expanded the scope of interventions beyond polio immunization to include vitamin A supplementation, and in the case of Zimbabwe, distribution of insecticide-treated mosquito nets and other immunizations. Other countries that conduct similar events include Nepal and Nigeria.

Nepal’s national vitamin A programme is particularly noteworthy because it employs an existing network of female community health volunteers to deliver the supplements. The programme is found to be highly cost-effective, with a cost per death averted estimated at US$327–$397, while the cost per disability-adjusted life year (DALY) gained was approximately US$11–$12. The programme was steadily expanded, from the original 32 priority districts to cover all 75 districts, in annual increments of 8–10 districts over an eight-year period. Expansion was assisted by using national immunization days to advance coverage.

Integrating the delivery of a range of interventions in a single location and at a single point in time, child health days are efficient for both households and health service providers. Related concepts, such as child health weeks, are enhancing the opportunities to reach a large number of usually excluded children with essential interventions.

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Health sector financing: Sector-wide approaches and the Heavily Indebted Poor Countries Initiative

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SWAs were created for several purposes: to address the limitations of project-based forms of donor assistance, ensure that overall health reform goals were met, reduce large transaction costs for countries and establish genuine partnerships between donors and countries in which both had rights and responsibilities. SWAs are a dynamic process rather than an end point, and they display considerable variation across countries. SWAs have led to greater dialogue and trust, a sharper focus on a select number of key sector priorities and closer links between policy and implementation. However, constraints include an overemphasis on planning and the development of procedures; limited civil society participation; weak performance management; and a slow shift from emphasizing donor coordination to considering service improvement and results.

At the end of the 1990s, in the context of the Heavily Indebted Poor Countries Initiative implemented by the International Monetary Fund and the World Bank, the focus on the health sector and financing reform in many low-income countries broadened to include Poverty Reduction Strategy Papers (PRSPs). Medium-term expenditure frameworks, the multi-annual public planning instruments associated with PRSPs, are used to plan future budget requirements for public services and to assess the resource implications of policy changes and new programmes.

See References, page 106.

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the sharp fall in the global under-five mortality rate, from 115 per 1,000 live births in 1990 to 93 in 1990 – a reduction of 19 per cent over the course of the decade.\r
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Focusing on integrated, sector-wide approaches and health systems: 1990s\r
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Despite the gains of selective primary health care, by the late 1980s, health systems in many developing countries were under severe stress. Population growth, the debt crisis in many Latin American and sub-Saharan African countries, and political and economic transition in the former Soviet Union and Central and Eastern Europe were but three of the contributing factors.\r
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In response, a number of countries embarked on efforts to reform deteriorating, under-resourced health systems, raise their effectiveness, efficiency and financial viability, and increase their equity.\r
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The Bamako Initiative\r
One such approach used by many countries was the Bamako Initiative, which was launched in 1987 at the World Health Organization meeting of African health ministers in Bamako, Mali. This strategy focused on increasing access to primary health care and meeting basic community needs in sub-Saharan Africa by delivering an integrated minimum health-care package through health centres. A strong emphasis was placed on access to drugs and regular contact between health-care providers and communities. (See Panel, page 36, for further details on the Bamako Initiative.)\r
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Integration\r
The emphasis on integrating essential services that was a central feature of the Bamako Initiative was to become the driving force of approaches in the 1990s. Integrated approaches sought to combine the merits of selective primary care and primary health care. Like selective approaches, they placed a strong emphasis on providing a core group of cost-effective solutions in a timely way to address specific health challenges; like primary health care, they also focused attention on community participation, intersectoral collaboration and integration in the general health-delivery system.\r
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A long-standing example of the greater emphasis on integration during the 1990s is IMCI, the Integrated Management of Childhood Illness. Developed in 1992 by UNICEF and WHO, and employed in more than 100 countries since then, IMCI adopts a broad, cross-cutting approach to case management of childhood illness, acknowledging that there is usually more than one contributing cause. Indeed, in many cases, sick children exhibit overlapping symptoms of disease, complicating efforts to arrive at a single diagnosis even in communities with adequate first-level examination facilities, let alone those with more challenging circumstances.\r
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IMCI strategies have three primary components, each of which requires adaptation to the country context: \r
- Improving health worker performance: This involves training health workers to assess symptoms of diseases, correct mapping of illness to treatment, and provision of appropriate treatment to children and information to the caregivers. Through provision of locally adapted guidelines, health staff are taught case management skills for five major causes of childhood mortality: acute respiratory infections, especially pneumonia; diarrhoeal diseases; measles; malaria; and undernutrition.\r
- Improving health systems: This component seeks to strengthen health systems for effective management of childhood illnesses. Measures employed include supporting drug availability, enhancing supervision, strengthening referral and deepening health information systems. Planning guides are provided for managers at the district and national levels.\r
- Improving community and family practices: The final component is often referred to as Community Integrated Management of\r
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National immunization days and child health days\r
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National immunization days (NIDs) originated as one-day mass polio vaccination campaigns across the developing world. NIDs, which still take place in many countries, are supplementary and do not replace routine immunization. Their original aim was to prevent the spread of polio by immunizing all children under the age of five, regardless of their previous polio vaccination history.\r
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The concept of setting aside a day for mass interventions on child health is not new. Successful trials of days took place in the 1980s in such places as Burkina Faso, Colombia and Turkey. More recently, active civil wars have been halted to provide days of tranquility that allow children to be safely vaccinated in such countries as Angola, Sierra Leone and Somalia. Mass vaccinations allow for economies of scale, as skilled professionals can supervise a cadre of volunteers, especially for oral polio vaccine, which does not require a needle and syringe.\r
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Child health days have expanded the scope of interventions beyond polio immunization to include vitamin A supplementation, and in the case of Zimbabwe, distribution of insecticide-treated mosquito nets and other immunizations. Other countries that conduct similar events include Nepal and Nigeria. Nepal’s national vitamin A programme is particularly noteworthy because it employs an existing network of female community health volunteers to deliver the supplements. The programme is found to be highly cost-effective, with a cost per death averted estimated at US$37–$397, while the cost per disability-adjusted life year (DALY) gained was approximately US$11–$12. The programme was steadily expanded, from the original 32 priority districts to cover all 75 districts, in annual increments of 8–10 districts over an eight-year period. Expansion was assisted by using national immunization days to advance coverage.\r
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Integrating the delivery of a range of interventions in a single location and at a single point in time, child health days are efficient for both households and health service providers. Related concepts, such as child health weeks, are enhancing the opportunity to reach a large number of usually excluded children with essential interventions.\r
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The role of parents and other primary health workers and caregivers on disease prevention by educating the capacity and functions of local sizes adapting curative solutions to not just one or two. It also emphasises importance of adding the newborn component, mostly the home visits, which can be averted if parents recognized warning signs, could be averted if parents recognized warning signs, undertook appropriate feeding practices or had access to skilled health workers and facility-based care.

Positive results for IMCI have been noted in several countries in sub-Saharan Africa. A study conducted in rural districts of the United Republic of Tanzania, for example, found that those districts implementing a health system-strengthening initiative and IMCI demonstrated a 13 per cent greater reduction in child mortality than control districts.

Survey results in Malawi, South Africa, the United Republic of Tanzania and Uganda indicated that wide-scale implementation of the C-IMCI strategy can result in significant improvement in some of the key family practices, such as steps to improve nutrition and early survival, disease prevention, home care or caregiving for sick children, and provision of a supportive environment for child growth and development.

Successes such as these have led health policy experts to recommend the development of national policies based on country priorities, with clearly defined roles for IMCI and other child health interventions, and the need to critically analyse and address the system constraints.

Stimulated by a series of studies on maternal, newborn and child survival published by The Lancet, integrated models of health care have been developed within the context of the maternal, newborn and child health continuum of care (see Chapter 1, page 17 for further details on the continuum of care and the partnership). In effect, the continuum of care concept expands IMCI to include integrated management of neonatal illness.

Successful preliminary experience with the new approach, called the Integrated Management of Neonatal and Childhood Illnesses (IMNCI), modified IMCI with specific actions taken to promote neonatal health and survival. Like IMCI, IMNCI supports three pillars for the effective delivery of essential services to neonates, infants and young children: strengthening health-system infrastructure, enhancing the skills of health workers and promoting community participation – all with additional emphasis on neonatal health and survival.

In practice, IMNCI consists of three home visits in the first 10 days after birth to promote best practices for the young child; a special provision at the village level for follow-up of infants with low birthweights; reinforcement of messages through meetings of women’s groups and establishing a linkage between the village and the home; and assessment of the child at local health facilities based on referral.

IMNCI is incorporated as part of the government’s Reproductive and Child Health II programme, an integrated approach to women’s health that aims to provide a continuum of care from birth until adulthood. The additional cost of adding the newborn component, mostly the home visits, is just US$0.10 per child.

**Integrated Management of Neonatal and Childhood Illnesses in India**

During the 1990s, India experienced marked reduction in the under-five mortality and infant mortality rates. These trends were not been matched by declines in the rate of neonatal deaths. By 2000, neonatal deaths were around two thirds of all infant deaths in the country, and around 45 per cent of under-five deaths. Close to half of neonatal deaths occur in the first week of life. Many of these deaths could be averted if parents recognized warning signs, undertook appropriate feeding practices or had access to skilled health workers and facility-based care.

In 2000, the Government of India adapted the Integrated Management of Childhood Illness (IMCI) strategy to focus greater attention on neonatal care. The resulting approach, Integrated Management of Neonatal and Childhood Illnesses (IMNCI), modifies IMCI with specific actions taken to promote neonatal health and survival. Like IMCI, IMNCI supports three pillars for the effective delivery of essential services to neonates, infants and young children: strengthening health-system infrastructure, enhancing the skills of health workers and promoting community participation – all with additional emphasis on neonatal health and survival.

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**See References, page 106.**
The Bamako Initiative

The Bamako Initiative, sponsored by UNICEF and WHO and adopted by African ministers of health in 1987, was based on the realization that, despite accepting in principle the core tenets of comprehensive primary health care, by the late 1980s many countries – especially in sub-Saharan Africa – were burdened by a lack of resources and practical implementation strategies. In particular, many health facilities lacked the resources and supplies to function effectively. As a result, health workers were sometimes merely prescribing drugs to be bought from private outlets, often unlicensed and unsupervised, while many patients had lost confidence in the inefficient and under-resourced public health facilities. All of these developments threatened to reverse the gains of the 1980s. The core challenges were to promote additional donor investment, stop and reverse the decline of government expenditure on social spending in general and health in particular, and attract the money spent in the private and informal sectors back into the public system.

The Bamako Initiative aimed to increase access to primary health care by raising the effectiveness, efficiency, financial viability and equity of health services. Bamako health centres implemented an integrated minimum-health-care package in order to meet basic community health needs, focusing on access to drugs and regular contact between health-care providers and communities. Based on the concept that communities should participate directly in the management and funding of essential drug supplies, village committees engaged in all aspects of health-facility management, with positive results for child health in West Africa in particular.

The purpose of community financing was to capture a large share of funds previously spent in the private and informal sectors back into the public system. For example, the percentage of government expenditure on social spending in Benin, which had fallen to around 3% in the 1990s, rose to 8% by 2000. The most effective interventions were able to hold monitoring sessions during which coverage targets, inputs and expenditures were set, reviewed, analysed and compared. It is estimated that the initiative improved the access, affordability and use of health services in large parts of Africa, raised and sustained immunization coverage, and increased the use of services among children and women in the poorest fifth of the populace.

The Bamako Initiative was not without its limitations. The application of user fees to poor households and the principles of cost recovery drew strong criticism, and though many African countries adopted the approach, only in a handful were initiatives scaled up. Even in those countries where Bamako had been deemed a success, poor people viewed price as a barrier in the early 2000s, and a large share did not use essential health services despite exemptions and subsidies. The challenge that Benin, Guinea and Mali still face, along with other African nations that adopted the Bamako Initiative, is to protect the poorest and ensure that costs do not prevent access to essential primary health-care services for poor and marginalized communities.

Although countries followed different paths in implementing the Bamako Initiative, in practice they had a common core objective: providing a basic package of essential drugs, training and supervision, and monitoring.

‘Going to scale’ was a critical step in the implementation process. The pace of expansion varied depending on the availability of internal and external resources, local capacity, the need to work at the speed of community needs and pressure from governments and donors. Most of the sub-Saharan countries that adopted the Bamako Initiative implemented some form of phased scaling up, and several countries – most notably Benin, Mali and Rwanda – achieved significant results.

In essence, implementing the Bamako Initiative was a political process that involved changing the prevailing patterns of authority and power. Community participation in the management and control of resources at the health-facility level was the main mechanism for ensuring accountability of public health services to users. Health committees representing communities were able to hold monitoring sessions during which coverage targets, inputs and expenditures were set, reviewed, analysed and compared. It is estimated that the initiative improved the access, affordability and use of health services in large parts of Africa, raised and sustained immunization coverage, and increased the use of services among children and women in the poorest fifth of the populace.

The Millennium Development Goals and results-based approaches: 2000 and beyond

By 2000, global life expectancy had increased from 47 years in the early 1950s to around 65 years. However, many countries had failed to share in the health gains that contributed to this increase in longevity, and the AIDS pandemic threatened to reverse the gains in high-prevalence areas. This prompted the inclusion of three health-related goals in the eight Millennium Development Goals that were adopted by 189 countries in 2000, with the target deadline of 2015 (see Figure 1.9, page 9, for the full list of the health-related MDGs and their associated indicators.)

As Chapter 1 explained, progress towards the health-related MDGs has been less rapid than the architects of the MDGs had hoped. There are serious concerns that without a concerted, sustained drive to expand access to essential interventions to the millions of mothers and children who are currently missing out, the goals, particularly in sub-Saharan Africa, will be missed by a wide margin.

In recent years, a number of high-level meetings have taken place to identify opportunities for achieving the MDGs, explore best practices, make commitments to measurable results at the country level and support the pertinent institutional adjustments required at country, regional or global levels. A key concern of these meetings is progress in sub-Saharan Africa, the region with the highest rates of maternal, newborn and child mortality and the one making the least progress towards the health-related Millennium Development Goals and results-based approaches: 2000 and beyond.
Procurement and supplies per cent in 2015.

Despite this rather bleak outlook, there is hope from the experience of other countries, whose targeted approaches have brought about significant declines in under-five mortality rates.24 In recent years, several comprehensive reviews of evidence-based child survival interventions have reaffirmed that existing low-cost interventions can avert up to two thirds of under-five mortality and over half of neonatal mortality.25 In addition, 88 up to 98 per cent of maternal deaths are preventable.26

Diagonal approaches: The Mexican way

According to one of its leading proponents, Jaime Sepulveda of Mexico’s National Institute of Health, the diagonal approach is a “proactive, supply-driven provision of a set of highly cost-effective interventions on a large scale bridging health clinics and homes.”

Vertical interventions are often the starting point of diagonal approaches, with the caveat that the number of these interventions be expanded over time with support from existing facilities and field workers. The diagonal approach stresses the importance of integration and coordination between vertical interventions, community-based initiatives and health facilities or extension services. It addresses a number of key issues by applying specific intervention priorities, including drug supply, facility planning, financing, human resources development, quality assurance and national prescription.

In the 25 years from 1980–2005, Mexico implemented a number of successful vertical programmes that were subsequently scaled up. These programmes targeted diarrhoeal diseases (the distribution of oral rehydration salts and the Clean Water programme); vaccine preventable diseases (national vaccination days, measles vaccination campaign, the Universal Vaccination Programme, national health weeks); vitamin A supplementation and anthelmintic therapy (national health weeks); vitamin A supplementation and measles vaccination campaigns.

A more comprehensive package covering the continuum of maternal, neonatal and child health has been introduced since 2001, when the Ministry of Health launched Arranque Para la Vida (Equal Start in Life). This initiative promotes social and community participation, strengthens and expands antenatal and neonatal care, and provides folic acid supplementation for women, among other factors. It has reached a high level of coverage. Through Seguro Popular, a public health insurance initiative, maternal and child health became entitlements.

In part, the diagonal approach has emerged as a result of research into Mexico’s health system and its development over the past 25 years. Unlike other approaches, its genesis appears to have emerged as a practical response to the growing complexity of disease profiles and the pressure faced by the country to develop health interventions and systems that provide quality services, are affordable, and reach the poorest and most marginalized populations.

Its implementation has led to Mexico being one of only seven countries on track to reach the Millennium Development Goals among the 60 nations selected in 2005 for priority attention by the Child Survival Countdown to 2015. The diagonal approach is now formalized and being championed by Mexico’s former Minister of Health, Julio Frenk, who considers that the framework should be integrated into a broader health policy. It aims to bridge the dichotomies between horizontal and vertical approaches, intersectoral and sectoral policies, and national and international efforts by offering a ‘third way’ through which effective interventions become the drivers for health-system development.

See References, page 106.

Towards a unified framework for ensuring health outcomes for mothers, newborns and children

In recent years, governments and development partners have renewed their commitment to achieving the health-related MDGs and ensuring that their renewed resolve would translate effectively into joint or coordinated regional strategies. At the same time, experts in maternal, newborn and child health are increasingly coalescing around a set of strategic principles based on the lessons of the past century. These principles are threefold, namely:

A renewed recognition of the principles of primary health care, which emphasize the primacy of family and community partnership in the survival, growth and development of children.27 This has triggered a renewed interest in another principle of primary health care, namely the need for community partnerships to support families in improving their care practices for children and to hold health systems accountable for providing quality affordable services. (Chapter 3 examines community partnerships in support of maternal, newborn and child health and family-care practices.)

The ‘health systems development for outcomes’ approach to health-service delivery combines the strengths of selectivvertical and comprehensive/ horizontal approaches. This new approach is being adopted as the framework for scaling up cost-effective intervention packages and integrating them into a continuum of care for mothers, newborns and children. It emphasizes the expansion of evidence-based, high-impact health, nutrition, HIV and AIDS, and, water, sanitation and hygiene interventions and practices, and underlines the importance of removing system-wide bottlenecks to health-care provision and usage.

Conceptual framework for achieving health-related Millennium Development Goals

Accelerated Child Survival and Development in West Africa

A more recent example of an integrated approach to primary health care is the Accelerated Child Survival and Development (ACSD) initiative, which was launched by national governments in cooperation with UNICEF in West and Central Africa and aims to reduce infant (under-one), under-five and maternal mortality rates. The programme originated when the Canadian International Development Agency (CIDA) asked UNICEF to develop an innovative project that would reduce child mortality. It was initiated in 2002 in four countries, covering 16 districts and 3 million people. Since then, ACSD has grown rapidly and by 2004 was targeting more than 16 million people in selected districts in 11 countries of West and Central Africa that have high rates of under-five mortality. ACSD concentrates on three service-delivery strategies to augment coverage for women and children:

- Community-based promotion of a package of family health and nutrition practices, employing mostly volunteers.
- Outreach and campaigns to provide essential services and products, such as immunization, vitamin A, antiretroviral treatment and selected prenatal services.
- Facility-based delivery of an integrated minimum-care package consisting of all the selected priority interventions.

These priority interventions are also organized around three areas that build on the strengths of existing programmes and approaches:

- Antenatal Care plus (ANC+), which provides intermittent preventive treatment of malaria during pregnancy, iron and folic acid supplementation, tetanus vaccine and prevention of mother-to-child transmission of HIV.
- Expanded Programme on Immunization plus (EPI+), which includes immunization, vitamin A supplementation and deworming.
- Integrated Management of Childhood Illness plus (IMCI+), which covers promotion of insecticide-treated mosquito nets, oral rehydration therapy, antimalarial drugs, exclusive breastfeeding and complementary feeding.

The ‘three by three’ delivery and intervention framework is supported by cross-cutting strategies to address behavioural, institutional and environmental constraints. These strategies include:

- Advocacy, social mobilization and communication for behavioural change.
- A results-based approach to service delivery at the community level.
- District-based monitoring and micro-planning.
- Integrated training.
- Improved supply systems.

Accelerated Child Survival and Development adopts an integrative framework, building on existing interventions with international and local partners. The programme strongly emphasizes bringing the framework into the mainstream of national policies and programmes, such as health sector-wide approaches, poverty reduction strategies and associated medium-term expenditure frameworks, basket funding and budget support. It also emphasizes building capacity at regional, district and community levels.

ACSD has a strong community-based component and is considered a ‘behaviour-centred’ programme because the majority of interventions – such as utilizing insecticide-treated nets in communities where malaria is endemic, improving care of sick children and newborns, and encouraging breastfeeding and complementary feeding – promote behaviour change. ACSD also includes active outreach and mobile strategies that are essential to reaching the most remote areas.

Based on preliminary data presented by district health teams in Ghana, this integrated approach, which includes immunization, infant and young child feeding, integrated management of childhood illness and antenatal care, is already having a positive impact on routine immunization coverage. Subsidized insecticide-treated mosquito nets are being distributed in conjunction with immunization plus activities.

See References, page 106.

jointly scaled up and widely applied, these interventions are expected to have a dual and synergistic impact not only on child survival but also on children’s growth and development.

This approach defies the long-standing dichotomy between vertical approaches to achieve outcomes and integrated approaches to strengthen systems, arguing that both aims can be realized by adapting health systems to achieve results. It also recognizes that optimal child survival, growth and development are more likely to be achieved and sustained if preventive measures are available to future mothers (i.e., adolescent girls and young women) before their children are born and if they benefit from a continuum of care that is part of an evolving integrated approach to reproductive, maternal, newborn and child health.

(Chapter 4 elaborates on how to take these strategies to scale.)

Enhance ways of working at the national and international levels, with a strong focus on coordination, harmonization and results. A new way of working for the global community is needed to support countries in going to scale with diagonal approaches to primary health care. Harmonization of the multitude of health-related global initiatives and partnerships, and of donor support to health-related MDGs, is pivotal to a unified paradigm. Other requisites include:

- Stronger support to developing countries in national planning, policy and budgeting frameworks for the health-related MDGs.
- Aligning donors to support countries’ own priorities and plans and provide predictable long-term funding for health-related MDGs.
- Strengthening health systems and other sectors for MDG outcomes.
- Improving the effectiveness and efficiency of multilateral support in a context of UN harmonization by stimulating a global collective sense of urgency for reaching the health-related MDGs.
- Changing institutional ways of doing business so as to achieve the MDGs; developing a more systematic and robust approach to knowledge management and learning.
- Seizing the opportunity presented by the renewed interest in health outcomes.
- Recognizing that the role played by civil society and the private sector will be critical for success.

(Chapter 5 discusses this new way of working.)

Figure 2.4 demonstrates the complementarity of these new strategic principles to achieve the health-related Millennium Development Goals. It makes clear that though the MDGs will be primarily determined at the household and community level, their attainment requires that families and communities receive support from health systems and other sectors. Policies and financing at both global and national levels are needed to enable health systems and other sectors to support families and communities and ensure accountability for results.

Building on the lessons learned

As this brief review has shown, the public health community is continuously learning and evolving. There is...
HIV and AIDS in Africa and its impact on women and children

Elizabeth N. Mataka, United Nations Special Envoy of the Secretary-General for HIV/AIDS in Africa

It is disheartening to observe that nearly half of all adults living with HIV around the world are women. In sub-Saharan Africa alone, out of the 23 million adults aged 15-49 and infected with HIV, 13.1 million, or 57 per cent, are women. In Zambia for example, women and girls are highly vulnerable to HIV and AIDS, and women aged 15-24 are three times more likely to be infected than males in the same age group. The toll that HIV has taken on women, especially those in Africa, has been largely underestimated. Children have also not been spared from the effects of AIDS, and the impact is devastating. It is estimated that at the end of 2006 there were 2.3 million children less than 15 years old living with HIV.

Many children continue to lose parents as a result of AIDS, and this has led to an escalating number of orphans and vulnerable children, with predictions that by 2010 there will be around 15.7 million children orphaned by AIDS in sub-Saharan Africa alone. Children suffer long before their parents die, especially girls, who may be drawn out of school to look after sick parents, particularly their mothers. Children lose the opportunity for education and for the maximum development of their potential due to lack of support. When parents die, children may have to relocate — losing their friends, as well as the familiar surroundings and environment they are comfortable with. The real trauma suffered by these children remains unknown because child counselling services are not yet developed in Africa. I would guess that emphasis has been put on physical, visible needs to the neglect of the more complex and challenging psychological needs of children.

Children can no longer rely on the support of the traditional extended family system, which provided care and support for the aged, orphans and any vulnerable and disadvantaged family member. This coping mechanism has been overstretched by poverty and by the sheer numbers of children to be cared for, given the fact that AIDS affects the most productive family members in the prime of their productive and reproductive lives. As a result, children have sometimes become homeless and are therefore not welcome. Some become homeless and reproductive lives. As a result, children have sometimes been left alone on the streets of major capital cities in Africa. Children are not developed in Africa. I would guess that emphasis has been put on physical, visible needs to the neglect of the more complex and challenging psychological needs of children.

The crisis is far from being over. African governments must commit to strengthening initiatives that increase capacities of individuals, especially women and children, to protect themselves. Empowerment of women should no longer be dealt with under the general heading of ‘Mainstreaming Gender in All Aspects of Development’. Empowerment of women, as well as support for orphans and vulnerable children, must move to the next level of well-targeted, time-bound and well-funded programmes with measurable results.

There is a need for increased support of “beyond awareness” initiatives that focus on skills development, community-based health promotion, positive living, gender equity and universal access to prevention, care and treatment.

The ramifications of the AIDS pandemic are multiple and impact negatively on every aspect of development. There is much to be done in Africa to ensure that the response is commensurate to the human and financial challenges that are posed by HIV and AIDS. There is a need for long-term sustainable prevention, care and support programmes, and for consistent, predictable and sustained resource provision. There is also a need for the empowerment of women and for change in cultural practices that discriminate against women. Long-term sustainable responses are essential and can only be achieved if all relevant stakeholders work together.

The Partnership for Maternal, Newborn & Child Health

The Partnership for Maternal, Newborn & Child Health (PMNCH), launched in September 2005, brings together 180 member maternal, newborn and child communities in an alliance to reduce mortality and morbidity. The PMNCH is the product of an alliance between the three leading partnerships on maternal, newborn and child health: the Partnership for Safe Motherhood and Newborn Health, hosted by WHO in Geneva; the Healthy Newborn Partnership, based at Save the Children USA; and the Child Survival Partnership, hosted by UNICEF in New York.

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• Country support to include maternal, newborn and child health care in national development and investment plans, strengthen health systems and improve equity in coverage.

• Monitoring and evaluation of coverage of priority interventions, progress towards MDGs 4 and 5, and equity in coverage, to hold stakeholders accountable.

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See References, page 106.

Lessons learned from evolving health-care systems and practices

The State of the World’s Children 2008

LESSONS LEARNED FROM EVOLVING HEALTH-CARE SYSTEMS AND PRACTICES

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See References, page 106.
HIV and AIDS in Africa and its impact on women and children

Elizabeth N. Mataka, United Nations Special Envoy of the Secretary-General for HIV/AIDS in Africa

It is disheartening to observe that nearly half of all adults living with HIV around the word are women. In sub-Saharan Africa alone, out of the 23 million adults aged 15–49 and infected with HIV, 13.1 million, or 57 per cent, are women. In Zambia for example, women and girls are highly vulnerable to HIV and AIDS, and women aged 15–24 are three times more likely to be infected than males in the same age group. The toll that HIV has taken on women, especially those in Africa, has been largely underestimated. Children have also not been spared from the effects of AIDS, and the impact is devastating. It is estimated that at the end of 2006 there were 2.3 million children less than 15 years old living with HIV.

Many children continue to lose parents as a result of AIDS, and this has led to an escalating number of orphans and vulnerable children, with predictions that by 2010 there will be around 15.7 million children orphaned by AIDS in sub-Saharan Africa alone. Children suffer long before their parents die, especially girls, who may be drawn out of school to look after sick parents, particularly their mothers. Children lose the opportunity for education and for the maximum development of their potential due to lack of support. When parents die, children may have to relocate – losing their friends, as well as the familiar surroundings and environment they are comfortable with. The real trauma suffered by these children remains unknown because child counselling services are nonexistent in Africa. I would like to pause and emphasize that emphasis has been put on physical, visible needs to the neglect of the more complex and challenging psychological needs of children.

Children can no longer rely on the support of the traditional extended family system, which provided care and support for the aged, orphans and any vulnerable and disadvantaged family member. This coping mechanism has been overstretched by poverty and by the sheer numbers of children to be cared for, given the fact that AIDS affects the most productive family members in the prime of their productive family member. This coping mechanism has been overstretched by poverty and by the sheer numbers of children to be cared for, given the fact that AIDS affects the most productive family members in the prime of their productive and reproductive lives. As a result, children have sometimes found themselves with no one to look after them and giving them a renewed hope for the future. The rates of infection among women and girls are a cause for deep concern, and when combined with the workload that women take on as well – in caring for AIDS patients, AIDS orphans and their own families – the situation becomes untenable, especially in southern Africa.

The socio-economic status disparity between men and women has a great impact in fueling the spread of HIV, among women and girls in particular. Cultural norms and early marriages further increase the vulnerability of young girls to infection. Poor communication around sex issues limits their ability to negotiate safer practices and may force women to remain in risky relationships. And socio-economic problems may limit women’s access to counselling and treatment. In this kind of set-up, women do not own property or have access to financial resources and are dependent on their husbands, fathers, brothers and sons for support. Without resources, women are susceptible to sexual violence, and the threat of this violence also limits women’s ability to protect themselves from HIV and AIDS.

The crisis is far from being over. African governments must commit to strengthening initiatives that increase capacities of individuals, especially women and children, to protect themselves. Empowerment of women should no longer be dealt with under the general heading of ‘Mainstreaming Gender in All Aspects of Development’. Empowerment of women, as well as support for orphans and vulnerable children, must move to the next level of well targeted, time-bound and well funded programmes with measurable results.

There is need for increased support of ‘beyond awareness’ initiatives that focus on skills development, community-based health promotion, positive living, gender equity and universal access to prevention, care and treatment.

The ramifications of the AIDS pandemic are multiple and impact negatively on every aspect of development. There is much to be done in Africa to ensure that the response is commensurate to the human and financial challenges that are posed by HIV and AIDS. There is a need for long-term sustained prevention, care and support programmes, and for consistent, predictable and sustained resource provision. There is also a need for the empowerment of women and for change in cultural practices that discriminate against women. Long-term sustainable responses are essential and can only be achieved if all relevant stakeholders work together.

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See References, page 106.
Based on this broad definition of community, community partnerships are approaches and strategies that seek to actively engage community members in their own health care and well-being, along with those of their children and other dependants. Community partnerships in maternal, newborn and child health are rich in diversity. Some are small-scale, involving only a few thousand or even a few hundred people; other initiatives, such as the Brazilian community health workers’ network or the Lady Health Workers programme in Pakistan, encompass thousands of workers covering millions of children and women. Some programmes emphasize supply-side elements, such as service provision through community health workers, while others focus more on demand-side initiatives to mobilize social demand for accountability and results from governments. Some community health worker initiatives rely on voluntary participation, while others include payment in kind, in part or in cash. Some community-based programmes are nationally supported and integrated into sector-wide policies and the broader health system, while others have yet to be fully or partially incorporated.5

The multiplicity of programmes and approaches to community participation in health care reflects, in part at least, the diversity of communities. Each one has its own social characteristics, organizational structure and links with other groups. To be effective, programmes and approaches directed towards communities must therefore adapt to the local needs and context and be owned by the community.

Success factors in community partnerships

Several factors are commonly found in successful community-based approaches. Implementation in any setting depends on the local context. Identifying successful factors is not only a positive way of assessing programmes and ‘learning by doing’, it is far easier than trying to disaggregate the elements that did not work in a community-based programme from the contextual factors. Consequently, while the panel on page 48 lists several of the common challenges to community partnerships in primary health care, the chapter will concentrate mostly on identifying and explaining the common tenets of successful initiatives.

Success factors drawn from evidence and experience are identified as follows and summarized below. They include:

- Adequate programme supervision and support.
- Support and incentives for community health workers.
- Cohesive, inclusive community organization and participation.
- Feeding and fluids for sick children: Continue to feed and offer more fluids, including breast milk, to children when they are sick.
- Home treatment: Give sick children appropriate home treatment for infections.
- Care seeking: Recognize when sick children need treatment outside the home, and seek care from appropriate providers.
- Appropriate practices: Follow the health worker’s advice about treatment, follow-up and referral.
- Antenatal care: Every pregnant woman should have adequate antenatal care. This includes having at least four antenatal visits with an appropriate health-care provider and receiving the recommended doses of tetanus toxoid vaccination. The mother also deserves support from her family and community in seeking care at the time of delivery and during the postpartum and lactation period.

Further important practices that protect children include: providing appropriate care for those who are affected by HIV and AIDS, especially orphans and vulnerable children; protecting children from injury and accident, abuse and neglect; and involving fathers in the care of their children.

Many of these practices can be undertaken by community health workers or by community members themselves, given the appropriate support and distribution of products and services. The direct involvement of the community is perhaps most appropriate for those aspects of health care and nutrition that most closely affect members on a daily basis. These include infant and young child feeding, other caring practices, and water and sanitation.

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Basic practices for community-based health-care interventions

A number of agencies, including UNICEF and WHO, have agreed on 12 key household practices for neonates and infants that can help to promote child survival, health and nutrition in communities:

- Exclusive breastfeeding: Exclusive breastfeeding from birth to six months. (Mothers found to be HIV-positive require counselling about possible alternatives to breastfeeding.)
- Complementary feeding: Starting, at about six months old, feeding children energy- and nutrient-rich complementary foods while continuing to breastfeed for at least two years could prevent more than 10 per cent of deaths from diarrhoea and acute respiratory infections, particularly pneumonia; and increase resistance to measles and other illnesses.
- Micronutrient supplementation: Improving the intake of vitamins through diet or supplements in communities where it is deficient could reduce mortality among children aged 6 months to five years by 20 per cent.
- Hygiene: Better hygiene practices, particularly hand washing with soap (or ashes) and the safe disposal of excreta could reduce the incidence of diarrhoea by 35 per cent.
- Immunization: Vaccination against measles for children under age one could prevent most of the measles-related deaths each year. Caregivers should make sure children complete a full course of immunizations (bacille Calmette-Guérin; diphtheria, pertussis and tetanus vaccine; oral polio vaccine; and measles vaccine) before their first birthday.
- Malaria prevention: The use of insecticide-treated mosquito nets in households in malaria-endemic areas could lower malaria-related child deaths by as much as 23 per cent.
- Psychosocial care and development: Promote mental and social development by responding to a child’s need for care and by talking, playing and providing a stimulating environment.
Effective referral systems to facility-based care.

Cooperation and coordination with other programmes and sectors.

Secure financing.

Integration with district and national programmes and policies.

Each of these tenets is briefly summarized in the following pages.

Cohesive, inclusive community organization and participation

Cohesive, inclusive organization is a fundamental feature of successful community partnerships. Communities function under established norms and practices that are often deeply entrenched in social, religious or cultural heritage. Programmes that respect this heritage have been found to be among the most successful community-based approaches to health care and nutrition. In Asia, for example, the large-scale initiatives undertaken in Bangladesh (BRAC), India (Jamshed and others), Pakistan (Lady Health Workers) and other countries have been led by local organizations – often women's groups. These groups have built on the established structures within communities that extend to other areas of development, including education and credit, as well as health.7

Overarching aim

- Reduce maternal, newborn and child mortality and morbidity.

Objectives

- Improve access to basic preventive and curative services.
- Foster direct and more frequent contact between health workers and caregivers, mothers and children.
- Encourage sustainable behaviour change.
- Support caring practices.
- Stimulate social mobilization by the community to demand better services and accountability.

Central features

- Health care and nutrition activities take place outside formal health facilities.
- Community health workers, often volunteers or part-time workers, are frequently key participants in dispensing essential services and promoting better caring practices.
- Training, support and supervision for community health workers are common features of programmes.
- There is often a central point within the geographical vicinity for the delivery of services or home visits.
- A community organization supports the programme and contributes not only administration and implementation, but often design and evaluation as well.

Additional features common to some, but not all, community partnerships

- Referral to facility-based care.
- Support from outreach workers.
- Integration of the programmes into the wider health sector.
- Integration into national development programmes and policies.
- Measures to strengthen the supportive environment, e.g. gender equality initiatives.

Common constraints on community partnerships

- Lack of community health workers to deliver quality services.
- Inadequate coordination of diverse participants.
- Insufficient funding for community-based activities.
- Irregular supply of drugs and commodities.
- Poor support and supervision of community health workers.
- Entrenched traditional childcare practices.
- Low economic status of women.

See References, page 107.

Organization alone is not sufficient to bring lasting change. To be truly effective and universal in scope, community participation must be socially inclusive. Given that communities are often heterogeneous in composition and structure, establishing a socially inclusive community partnership may be challenging. Long-held patterns of exclusion and discrimination by gender, religion, ethnicity or disability can impede the reach of interventions. Divisions among community members may also be rooted in more recent events and circumstances, such as civil strife and the stigma attached to HIV and AIDS.8

Even when communities have respected, socially inclusive organizations, their participation in programmes is not automatic. Advocacy and communication are required to allow community organizations to state their preferences and needs for health care, nutrition, and water and sanitation services. Once a programme is launched and implemented, community members need to see that it is progressing towards their stated objectives, both individually and collectively. As programmes progress, their ongoing relevance should also be regularly assessed.9

Programmes that limit community participation to implementation run the risk of weak local ownership, with the result that participation will be tentative and tenuous.10 Periodic meetings of community organizations involved with community programmes are an important component of participation. At these meetings, the results and evidence can be discussed as part of planning, monitoring and evaluation.

Support and incentives for community health workers

Community health workers are established as an integral part of community-based programmes, serving as a bridge between professional health staff and the community, and helping communities identify and address their own health needs.

Community health workers are generally the main agents of community-based treatment, education and counselling, usually through house-to-house visits. They also attend local health facilities, obtain and dispense supplies of drugs and other essential products, participate in community meetings and fulfill their responsibilities in programme management. Other duties often include attending local district and regional meetings for training and feedback, and representing the community in dialogue with other communities and government personnel.

Because they can reach vulnerable children who may otherwise lack access to basic health services, community health workers have been particularly effective in improving child survival outcomes at project level in countries as diverse as Ecuador, Ethiopia, Colombia and Nepal. Successful scale-up efforts across the developing world confirm the potential of community health workers to deliver equitable health services to children living in remote areas and to help fill the unmet demand for regular health services in countries with weak health systems. Efforts to scale up community health worker programmes,
addressed in greater depth in Chapter 4, can face obstacles and bottlenecks. In fact, just being able to maintain adequate participant numbers and structure is often one of the greatest challenges. Existing programmes, regardless of their scale, grapple with poor training, inadequate supervision, lack of supplies and poor relationships with the communities they intend to serve. Attrition rates in community health worker programmes are often high. One review, for example, found attrition rates of 30 per cent over nine months in Senegal and 50 per cent over two years in Nigeria. Similar challenges have been identified in India, Sri Lanka and the United Republic of Tanzania.\(^{11}\)

Attrition is related to multiple factors. Fulfilling the responsibilities of a community health worker takes time and financial resources, and may involve significant opportunity costs. Community health workers, particularly those who are volunteers or paid in kind or part, may have obligations to meet and require income to support their families. If the demands on their time and resources prove overwhelming, there is a risk they will not function effectively as health workers or will drop out of community partnerships.

The sustainability of community health worker programmes depends on creating a package of incentives that is sufficiently attractive to prevent attrition. These packages will vary among settings, reflecting the different functions community health workers undertake in different communities. But all need to focus on priorities that include compensating community health workers for lost economic opportunities; providing adequate supervision and peer support; offering personal growth and development opportunities; and creating a strong support system within the community.\(^{12}\)

The incentives required to retain and motivate community health workers are not necessarily monetary. The disappointing results of evaluations of poor Alma-Ata large-scale training and deployment of community health workers underscore the fact that sound programme management and refresher training are more effective at sustaining workers’ effectiveness than initial training. Active community participation and support is a vital element of successful and sustainable community health worker programmes throughout the world. In the Philippines, for example, health workers at the barangay level, the smallest political unit in the country, have become a significant driving force behind improved child survival. This success has been encouraged by the Barangay Health Workers’ Benefits and Incentives Act of 1995, which includes such provisions as subsistence allowances, career enrichment and special training programmes, and preferential access to loans. Similarly, in Ceara, Brazil, a programme using a decentralized approach that allows community health workers to earn a substantial monthly income (twice the local average) has led to dramatic improvements in child health, including a 32 per cent reduction in child mortality.\(^{13}\)

### India: Reducing undernutrition through community partnerships

**Challenge** Despite vast improvements in the country’s economy, undernutrition continues to be a problem in India. In 1999, the National Family Health Survey found that 47 per cent of all children under age three were underweight – a higher average prevalence than in sub-Saharan Africa. Data from the most recent round of the survey, completed in 2006, show only a very small decline, with undernutrition levels remaining around 45 per cent for children under three in several states, such as Madhya Pradesh and Bihar. Undernutrition levels have increased since the previous survey. Reasons for this high prevalence include the inadequate knowledge of caregivers concerning correct infant and young child feeding, frequent infections worsened by bad hygiene, high population pressures, the low status of women and girls, and suboptimal delivery of social services.

To combat undernutrition in young children, the Government of India relies largely on the Integrated Child Development Scheme (ICDS). Begun in 1975, the scheme provides health and nutrition services to more than 4 million of infants and young children, along with other services, such as supplementary nutrition, basic health and antenatal care, growth monitoring and promotion, preschool non-formal education, micronutrient supplementation and immunization. These services are delivered through a network of some 700,000 community anganwadi workers. The effectiveness of ICDS has been limited, however, by a variety of factors, ranging from the limited skill and knowledge of anganwadi workers to a lack of supervision, vacancies and flaws in programme policy, such as inadequate focus on very young children.

**Strategy and approach** UNICEF is collaborating with the Government of India to increase the effectiveness of ICDS. The specific interventions supported include: strengthening the management and supervision system; improving the knowledge and skills of anganwadi workers and increasing the time and attention they give to infants; improving community involvement through joint village situation analysis, identifying village volunteers and providing them with basic training in infant care; and increasing the number of home visits made by anganwadi workers and volunteers in order to increase the caring behaviour of parents and improve the outreach of health services.

**Results** The strategy described above was carried out in six states, in each of which at least 1,000 villages were covered, affecting more than 44 per cent of underweight children under age five. After the interventions had been operational for about three years, impact assessments were conducted in several of the states, using representative household-based surveys to compare intervention villages with socially, economically and geographically similar control villages. In Rajasthan, for instance, it was found that early initiation of breastfeeding was higher and the prevalence of stunting significantly lower in intervention villages than in control villages (see Figure 3.1).

**Adequate programme supervision and support** Supervision and support systems for community partnerships in primary health care can diminish the community health workers’ sense of isolation and help sustain interest and motivation, reducing the risk of attrition. Skilled health workers based in, or closely linked to, health facilities generally undertake the supervisory function, which can add to their already heavy workloads. Supervisors themselves require training to acquire the appropriate skills for oversight of community-based programmes. Resource constraints – human, financial or organizational – can limit the breadth and

<table>
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<tr>
<th>Rajasthan Province, India</th>
<th>Intervention villages</th>
<th>Control villages</th>
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<tbody>
<tr>
<td>Age</td>
<td>≤6</td>
<td>&gt;6</td>
</tr>
<tr>
<td></td>
<td>6-12</td>
<td>12-24</td>
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<td></td>
<td>24+</td>
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The government of the state of Rajasthan, like those of other states, has decided to take the intervention to a larger scale using its own resources. UNICEF will continue to collaborate in order to assure that the quality of implementation remains adequate, as well as to address some behaviours that have been more difficult to change, such as the tendency of caregivers to delay the start of complementary feeding (much later than six months of age). Although the nutritional status of infants and children in the states involved has improved, it is clear there remains ample room for further improvement in the future.

**Remaining challenges** The governments of the states where these interventions are being implemented have decided to take them to larger scale using their own resources. UNICEF will continue to collaborate in order to assure that the quality of implementation remains adequate, as well as to address some behaviours that have been more difficult to change, such as the tendency of caregivers to delay the start of complementary feeding (much later than six months of age). Although the nutritional status of infants and children in the states involved has improved, it is clear there remains ample room for further improvement in the future.

See References, page 107.
depth of training, leaving both supervisors and community health workers at a considerable disadvantage in implementing and managing programmes. Visits by supervisors to communities, in particular, are important for on-site training and learning by doing for both parties, but these visits are frequently compromised by constraints on financial resources or by poor transportation infrastructure.

Efficient administration of community programmes aids evaluation, and monitoring can help ensure that coverage is as universal as possible. Records of patients, treatments and outcomes should be kept up to date, and regular meetings should be held to build cooperative relationships between health workers and supervisors and to inform programme assessment and modifications. Employing technology, such as computer-based databases, email and cellphones, can streamline the process of information gathering and dissemination while freeing time for workers and supervisors to visit communities and households and meet together.

Other types of support to programmes include logistics, supplies and equipment. Community health workers require sufficient tools, including training and products, to be able to do their job and maintain their standing in the community. The previously cited evaluations of large-scale community health worker programmes undertaken in the 1980s show that when these tools and products – especially drugs – are inappropriate or not resupplied regularly, the effectiveness of health workers is compromised. When communities are located far from supporting health facilities, evidence shows that programmes are more effective if there is a clear schedule of visits by supervisors and community health workers and preparations are in place for transportation to and from both locations.

Supervision should not be limited to the official health authorities, however, and community organizations have a role in oversight of health workers and programme outcomes. In principles widely accepted by practitioners, it is recommended that the community be involved in the initial selection of health workers, and that health workers accept community members’ participation in identifying priorities and planning projects.14

Effective referral systems

Effective referral systems are an essential complement to successful community-based programmes to ensure a continuum of care (see Chapter 4). Hospitals provide services that cannot be safely replicated elsewhere, such as Caesarean sections and other emergency obstetric care. However, in the poorest countries with the highest maternal and child mortality rates, health-care resources are often limited and access to referral hospitals frequently low. In these situations, millions of children can be assisted very rapidly by scaling up of proven, cost-effective interventions in primary health care, particularly those that are community-based.

At the same time, there is a need to invest in strengthening district health systems to provide basic referral care and to support expansion of essential primary health-care services. Community health workers have proved to be effective in managing many serious childhood illnesses, such as diarrhoea, malaria, acute undernutrition and pneumonia; supervision and access to referral services strengthen the quality of this activity.
Leadership brings change for mothers and children in Ethiopia

by Tedros Adhanom, Minister of Health, Ethiopia

Ethiopia’s experience with child survival shows that strong political leadership can bring about dramatic results. In 2004, Prime Minister Meles Zenawi challenged the Government and its partners to join him in charting a road map for universal health care, despite the enormous obstacles that stood in its path. While more than 80 per cent of child deaths are preventable, coverage and utilization of preventive services remained low, with less than 30 per cent of women receiving antenatal care and only 49 per cent of children receiving a full course of immunizations by their first birthday.

The Health Extension Program

The Government and its partners are tackling these challenges head-on through the Health Extension Program, a national strategy designed to promote community-based child and maternal health. Grounded in the philosophy that health is a product that can be produced by individuals, the Health Extension Program empowers communities to make informed decisions about their own health by equipping them with appropriate skills and knowledge.

To make this plan a success, the Government is deploying 30,000 female Health Extension Workers (HEWs) – a huge commitment of financial and human resources – to promote 18 basic interventions that address the major causes of child and maternal mortality. More than 17,000 HEWs have been employed to date, and an additional 7,000 are in training. Each kebele (the lowest administrative unit) is staffed by HEWs, who are locally recruited and trained by the Ministry of Health. The Government has also put in place an Enhanced Outreach Strategy, a transitional programme that delivers emergency and basic care to communities while they await the arrival of trained health workers.

At the same time, initiatives are under way to strengthen the infrastructure that supports referral-level hospitals. The Government is investing in a Health Management Information System designed to collect data at all levels, including the health post. In October 2006, the Government adopted a national Health Commodities Supply System to ensure that vaccines, essential drugs and other health commodities are readily available to public sector health facilities. These initiatives are vital to ensuring the sustainability of the progress made to date with vertical and community-based health initiatives.

Lessons learned

The Health Extension Program has taught a number of valuable lessons. The first is that scaling-up requires speed, volume, and quality. Robust planning processes have helped to ensure speed and volume. For instance, when the Government organized a national campaign for the distribution of insecticide-treated mosquito nets, donor partners, particularly the Carter Center, the Global Fund, UNICEF and the World Bank, coordinated their support for the national campaign, helping to achieve the target of 20 million nets within two years. Each household received two bed nets, which are used to protect primarily women and children against malaria.

The second lesson is that speed and volume do not necessarily ensure quality. Extra effort is needed to ensure that households know when and how to use health resources, including mosquito nets. The female HEWs are working to bridge communication gaps between the health sector and the communities it serves by winning the confidence of communities and talking directly to mothers.

The third, and perhaps most vital, lesson learned is the paramount importance of political leadership. Genuine political leadership requires active and meaningful engagement in every step of the process – from identifying the problem and setting targets, to mobilizing resources, and fostering community participation. Public discussion on health-care needs and priorities, and cooperation among all stakeholders, including donors, health-care providers, and communities, has helped foster broad ownership of the Health Extension Program.

Our partners, including UNICEF and other donors, support the national planning process, harmonizing their activities and support for Ethiopia’s priorities. It is a tremendous achievement that all donor partners have signed a code of conduct and endorsed a single harmonization manual, which aims to create one plan, one budget and one final report. This is an ambitious objective that we are working together to achieve over the long term.

Ethiopia’s road map to achieving MDG 4 still faces a number of hurdles, but the progress made to date demonstrates that our vision for universal access to affordable health care can be a reality.

Community health workers have been less effective in identifying and managing complications during childbirth. Reducing maternal mortality therefore requires the scaling up of skilled attendance at birth with referral systems for emergency obstetric care.

District health systems also serve as a focal point for public health programme coordination, integrating direct care for patients with population-based campaigns and supervision and coordination of community-based care and other lower level health services. At higher referral levels (regional or national hospitals) this role is often broadened to include such functions as training and research, and technical support and quality assurance for lower levels.

An essential component of an effective referral system is good communication between the community programme participants and facility-based staff. Reinforcing points made in the previous sections, referral hospitals should engage with community programmes, provide strong support for community health workers and spend a significant proportion of time providing advice through person-to-person contact or other modes of communication. Upgrading information and communication technology can facilitate dialogue and referral, even in low-income countries.

Coordination and cooperation with other essential services and sectors

Just as referral systems are essential to support and coordinate activities at the community level, cooperation and communication between programmes at the district level and intersectoral collaboration are also important. Coordination with other health services can take many forms. The possible benefits are multiple, including the sharing of new ideas, training, resources and evaluation skills; and early warning, management and containment of disease outbreaks.

In Cambodia, for example, non-governmental organizations share

Positive behavioural changes in the household and community lead to improvements in maternal, newborn and child health. A community health worker demonstrates the use of water-treatment supplies, Indonesia.
National strategies must give priority attention to the removal of obstacles to effective scaling up and implementation at different levels of the health systems (see Chapter 4 for further details on measures to address bottle-necks in health-service delivery). Well known bottle-necks include irregular immunization sessions, negative experiences with the health system, distance to health centres and lack of information. At the family and community level, effective coverage of primary-health-care services is often impeded by lack of basic affordable supplies, low demand and other fundamental challenges, such as mosquito nets not being treated with insecticide.

Both the short-term, disease-specific initiatives – increasingly supported by new international donor partnerships – and longer-term, health-sector development programmes are likely to continue to coexist. Sufficient human and financial resources must be invested in both sets of initiatives to produce sustainable gains for child health. Donor-driven, disease-specific partnerships should consider adapting their approaches into multisectoral frameworks that align with national health priorities, with equitable benefits for the whole national health system.

The ultimate responsibility for ensuring children’s rights to health and nutrition lies with national governments in partnership with civil society. Governments have an important role in developing and implementing policies to lower the barriers to primary health care, in improving the quality and efficiency of service providers and in increasing public accountability. At the same time, health policies must be accountable to the communities and districts they serve. Governments and health systems must be closely attuned to the needs and interests of the population. Developing effective, child-focused health policies and building strong institutions between communities and health systems is critical; in most countries, increases in health expenditures will need to be accompanied by substantial improvements in the policy environment to achieve significant progress towards the health-related Millennium Development Goals.

Finding the appropriate mix of solutions for enhanced health and nutrition outcomes

Each developing country has a unique mix of opportunities for, and constraints on, the development of its health system, owing to differing levels of economic progress, environmental and institutional circumstances, political situation and current health-system capacity. As a result, there is no universally applicable method of fostering improvement. Some may find that their greatest challenge lies not in scaling up community-based approaches to essential health-care packages nationwide, but in strengthening and expanding service delivery through facility-based programmes, decentralizing health services, and addressing non-communicable diseases and conditions, such as diabetes and obesity.

For low-income countries, particularly those where large proportions of infant and young child deaths are due to non-communicable conditions, a focus on health promotion and community mobilization for such as distribution of insecticide-treated mosquito nets and conducting immunization campaigns may be appropriate.

Mozambique: Reducing under-five mortality through a community-based programme

Context and challenge: Mozambique is one of the world’s poorest countries, with gross national income per capita of just US$340 in 2006 and an under-five mortality rate of 138 deaths per 1,000 live births. Life expectancy at birth is just 42 years, more than 40 per cent of children under five are suffering from moderate or severe stunting, and only one third of the population is using adequate sanitation facilities. Access to essential health-care services is limited, with 25 per cent of infants lacking a measles vaccine. Only 10 per cent of children sleep under a mosquito net (treated or untreated). And almost two thirds of the population live in rural areas, where only 1 in every 4 has access to an improved source of drinking water.

The challenge was to deliver an effective community-based child survival programme to rural communities with poor physical and environmental health infrastructure, and verify that the community programme contributed to mortality reduction.

Approach: The Chokwe Ministry of Health and World Relief partnership project in operation during 1999–2003 used the ‘Care Group’ approach to implement a child survival programme that aimed to address three elements of Community Integrated Management of Childhood Illness (C-IMCI):

- Improved partnerships between the health system and the community.
- Increased accessible care for community-based providers.
- Promotion of essential household practices for child health.

The Care Group approach trains community educators through group interaction. One volunteer Women’s Health Educator provides peer-to-peer health education to 15 surrounding households, and 10 Women Health Educators form a Care Group that meets once a month with a paid supervisor. During monthly Care Group meetings, a health field staff member or a Women’s Health Educator supervisor presents health messages about child survival and women’s health. The Care Group members then practise training with each other, sharing the information presented. Before the next Care Group meeting, each volunteer is responsible for visiting the households under her jurisdiction to relay the messages she has just learned.

The child survival programme was designed to be comprehensive, integrating breastfeeding, complementary feeding, use of oral rehydration therapy and insecticide-treated mosquito nets. The programme strengthened referral to local health facilities and care management of common illnesses at the facilities.

Results: The project also implemented a community-based vital registration and health information system through the 2,300 community volunteers who collected data on births, deaths and childhood illnesses every month. These data were aggregated during the monthly meetings and the registers sent to health posts operated by community providers, or socorristas, who were trained by the district Ministry of Health. The collated information was sent back to local village health committees, health centres and the Ministry of Health.

Data from the community-based vital registration and health information system showed a 66 per cent reduction in infant mortality and a 82 per cent reduction in under-five mortality. To check the reliability of these findings, an independent mortality assessment was carried out by experienced researchers using a pregnancy history survey based on standard methodologies applied in the Demographic and Health Survey. This mortality survey found reductions of 49 per cent and 42 per cent in infant mortality and under-five mortality, respectively.

These results demonstrated the effectiveness of the Community IMCI and validated the fact that community health workers can collect reliable health data for monitoring mortality.
of mothers and children remain excluded from facility-based programmes, and whose health system capacity has been undermined by years of underinvestment and mismanagement, weak governance, mass migration of professional health workers, complex emergencies or the AIDS epidemic, determining the best strategy is neither straightforward nor without risks. In such countries, an important and perhaps overriding consideration is feasibility, under the guise of the following question: What is the most appropriate, cost-effective, timely and sustainable strategy for improving maternal, newborn and child survival and health and increasing coverage of essential services and commodities, given the current strength of a country’s health, nutrition and environmental health systems?27

The feasibility paradigm aims to address the urgent needs of the poorest and most marginalized societies – where maternal, newborn and child mortality rates are highest – that are most lacking in basic preventive services, such as immunization and access to drugs and emergency care. In countries with relatively weak health, nutrition and water and sanitation systems and low health-system capacity, community-based approaches that rely less on health facilities and outreach services can help expand coverage of essential services, products and practices – particularly if basic preventive services, such as immunizations, are already in place.28 It must be stressed, however, that in order to underpin sustainability, the expansion of community partnerships must be conducted in conjunction with efforts to overcome system-wide bottlenecks in facility-based maternal and child health and nutrition services, and address other behavioural, institutional and environmental constraints.

The next chapter focuses on scaling up community partnerships in health, nutrition and environmental health care. Although many of the arguments cited are perhaps most applicable to low-income countries and marginalized or impoverished communities, much of the discourse is also relevant to countries and communities in less challenged circumstances.
Undernutrition is the underlying factor in up to 50 per cent of under-five deaths, and there is evidence of links between a mother’s nutritional status and the risk of maternal and child death. Among the developing countries and territories, more than one quarter of children under age five were moderately or severely underweight or stunted in 2000–2006, and 28 per cent of children aged 6–59 months were still not receiving vitamin A supplementation in 2005.

Food security, though necessary, is insufficient by itself to avert undernutrition, as evidenced by the many children who have been found to be underweight or stunted in food-secure or non-poor environments. Undernutrition results from an array of interrelated factors, including inappropriate feeding and care practices, inadequate sanitation, disease, poor access to health services, and weak knowledge of the benefits of exclusive breastfeeding, complementary feeding practices and the role of micronutrients. Diarrhoea, which often results from poor sanitation facilities and hygiene practices, is a contributing factor to undernutrition. Another contributing factor to undernutrition among infants and young children is the lack of supportive environments for many mothers, who may have limited time to care for themselves during pregnancy, or for their infants, due to household demands and insufficient access to health services.

Scaling up effective nutrition strategies across a continuum of care in mothers and children demands an integrated approach. It requires the sustained engagement of parents and communities, supported by local and national development of primary health care and environmental health services, particularly water and sanitation. When these prerequisites are in place, they can lead to remarkable results in a relatively short time. In Thailand, for example, moderate and severe undernutrition were reduced through such means by 75 per cent or more in a decade. And, in spite of considerable economic set-backs, many developing countries have made impressive progress in providing essential vitamins and minerals to their citizens. Nearly 70 per cent of households in developing countries consume iodized salt, about 450 million children now receive vitamin A capsules, and health strategies, particularly community partnerships, are employing new and innovative ways to promote and support breastfeeding.

Undernutrition in the developing regions is highest in South Asia, which has the highest rates of infants with low birthweights and of children under five who are moderately or severely underweight, wasted or stunted — and the lowest rates of vitamin A supplementation. Although sub-Saharan Africa has moderately better numbers for these indicators, it is the region with the lowest rates of exclusive breastfeeding for infants under six months, and severe acute undernutrition remains a pressing problem. The country examples below illustrate ways in which these issues are successfully being addressed in the region.

Benin: Teaching mothers about the importance of breastfeeding

In Benin, the 1996 Demographic and Health Survey (DHS) reported that only about 18 per cent of newborns in the Borgou Region were breastfed within the first hour, and in 1998 less than 1 in 5 infants under four months old, or 14 per cent, benefited from exclusive breastfeeding. To address this challenge, as well as some of the broader nutritional challenges associated the high rates of malnutrition and infant mortality, the Essential Nutrition Actions programme was introduced in 1997. In order to reinforce essential nutrition-related behaviours, the programme emphasized six measures in health facilities and communities:

- Exclusive breastfeeding for infants up to 6 months.
- Appropriate complementary feeding with continued breastfeeding from 6-24 months.
- Vitamin A supplementation for children.
- Iron and folic acid supplementation for pregnant women.
- Iodized salt supplementation.
- Support and counselling for undernourished and sick children.

Essential Nutrition Actions has effectively combined measures designed to strengthen the health system, such as training for health workers, with community mobilization and a large-scale communications campaign tailored to the specific conditions of the target populations. Community leaders were actively involved in selecting community volunteers, known as relais communautaires, who provided the link between communities and health facilities and were trained in nutrition activities. Youth, traditional singers, community theatre groups, and women’s and other community groups participated in workshops to develop messages and materials. Community theatre groups performed dramas in villages and neighbourhoods, while community radio stations broadcast spots, games and dramas developed in the workshops.

This vast community mobilization led to a genuine change in breastfeeding behaviour among mothers. In 2001, nearly 50 per cent of mothers with infants under four months old in these areas reported that their babies were exclusively breastfed. Furthermore, in 2002, selected communities in Borgou reported exclusive breastfeeding of infants under four months of life by 61 per cent, compared to 40 per cent in 1999.

Community-based management of severe acute undernutrition in Ethiopia, Malawi and Sudan

Severe acute undernutrition remains a major killer of children under five years of age. Until recently, treatment has been restricted to facility-based approaches, greatly limiting its coverage and impact, because in many poor countries infants who are severely malnourished are never brought to a health facility. New evidence suggests, however, that large numbers of these children can be treated in their communities without being admitted to a health facility or a therapeutic feeding centre. The community-based approach involves timely detection of severe acute undernutrition in the community and provision of treatment for those without medical complications with ready-to-use therapeutic foods or other nutrient dense foods at home. If properly combined with a facility-based approach for those undernourished children with medical complications and implemented on a large scale, community-based management of severe acute undernutrition could prevent the deaths of hundreds of thousands of children.

Recent evidence from Ethiopia, Malawi, and Sudan illustrates the high impact and cost-effectiveness of community-based management of severe acute malnutrition. In contrast to treatment in health facilities — where in most developing countries fatality rates have remained largely unchanged for the past five decades — community-based therapeutic care has brought about a fundamental shift in the understanding of the disease and the implementation of treatment. To date, data from more than 20 programmes implemented in Ethiopia, Malawi, and North and South Sudan between 2000 and 2005 indicate these programmes achieved recovery rates of almost 80 per cent and reduced mortality rates to as little as 4 per cent.

Coverage rates reached 73 per cent, while more than three quarters of the severely undernourished children who presented were treated solely as outpatients. Furthermore, initial data indicate these programmes are affordable, with costs varying between US$12 and US$132 per year of life gained.

Community-based therapeutic care programmes use new, ready-to-use therapeutic foods that in many cases are made locally from local crops. Their implementation is based on three premises:

- Underlying all programmes is a strong emphasis on the importance of early care in the evolution of malnutrition and the need for patients to remain in a nutritional programme until recovery.
- Programmes start from the assumption that in order to present early and comply with treatment, families and communities must understand, accept and participate in the programmes.
- Programmes focus on the involvement of key stakeholders who can benefit from the feedback and attention successful programmes generate and thus have a stake in their long-term sustainability.

The results of community-based programmes to address severe acute undernutrition suggest that, even though they cannot eliminate the need for external assistance, scaled-up treatment can have a major public health impact, preventing hundreds of thousands of child deaths.

See References, page 108.
Marginal Budgeting for Bottlenecks is a result-based planning and budgeting tool that utilizes knowledge about the impact of interventions on child and maternal mortality in a country, identifies implementation constraints and estimates the marginal costs of overcoming these constraints. This tool, which has been employed in the preparation of key strategic frameworks for maternal, newborn and child health in sub-Saharan Africa, was jointly developed by UNICEF, the World Bank and WHO. It is being used to assist in setting targets for proven high-impact interventions, and the estimation of their expected impact, cost per life saved and additional funding requirements, as well as a projection of the required fiscal space to finance these extra costs. (Fiscal space can be defined as the availability of budgetary room that allows a government to provide resources for a desired purpose, e.g., overcoming barriers to maternal, newborn and child health care without any prejudice to the sustainability of a government’s financial position.)

Marginal Budgeting for Bottlenecks consists of five key steps:

- An assessment of the key indicators, trends in and cause of maternal, newborn and child mortality and morbidity and access to essential services, and the selection and packaging of evidence-based, high-impact interventions to address the proximate causes by service delivery mode, i.e., family/community-based care, schedulable population-oriented services and mobile strategies, or individually oriented clinical care at primary- and referral-level facilities.
- Identification of system-wide supply and demand bottlenecks to adequate and effective coverage of essential primary-health-care services, and obstacles to the application of high-impact intervention packages in each of the main service delivery modes. Adequate coverage includes such factors as the availability of essential drugs and supplies, access to health services and health workers, initial utilization of health-care services and continuity of usage of service. Subsequent examination of underlying causes of bottlenecks and the development of promising strategies to overcome them allows for the setting of ‘frontiers’ – coverage levels of intervention packages that are adequate, effective and achievable once bottlenecks are removed.
- Estimation of the expected impact on survival rates for each of the interventions. These estimations are based on recent, in-depth analysis of the evidence on the efficacy of high-impact interventions and packages in determining maternal and child survival and health outcomes. They are calculated in a residual way to avoid double counting survival rates.
- Selection of the types, quantities and costs of additional inputs, such as salaries, drugs and training, which are needed to implement the actions to overcome bottlenecks and to lift the effective coverage of intervention packages to their frontiers.
- Analysis of budgetary implications, the identification of likely sources of funding and the comparison of the marginal costs and additional funding needs to the ‘fiscal space’ for health spending. (The fiscal space for health spending in each country is projected by the World Bank and the International Monetary Fund.)

Country examples of bottleneck analysis
Bottleneck analysis has been undertaken in around 25 developing countries and across the range of service delivery modes. Proxies used to assess the coverage determinants for each of the three modes of service delivery include the following parameters (the list is not exhaustive):

- Family and community care: Indicators include use of safe water and sanitation facilities, and of insecticide-treated mosquito nets; infant feeding and care for sick children and newborns.
- Population-oriented schedulable services: Indicators include levels of immunization and antenatal care.
- Clinical care: Indicators include skilled attendance at birth and emergency obstetric and neonatal care.

Results from countries where the tool has been used have revealed bottlenecks that were not immediately evident from the examination of levels or trend data.

As reported at recent workshops:

Honduras: A bottleneck analysis of water, sanitation and hygiene services revealed that despite ample access to improved drinking water, less than half of households consumed water that had been treated to make it safe. Strategies selected to address these bottlenecks include scaling up water treatment and providing information, education and communication initiatives to promote the exclusive use of safe drinking water.

Guinea: In 2000, 70 per cent of villages in the districts where the Accelerated Child Survival and Development (ACSD) programme was under way had a community health and nutrition promoter, 50 per cent of families owned a mosquito net, and 25 per cent of pregnant women slept under a net. However, effective coverage was found to be far lower than adequate coverage levels, since less than 5 per cent of individuals slept under a mosquito net that had been recently treated with insecticide. This bottleneck to protection against malaria was addressed through the free treatment of all existing mosquito nets with insecticide, combined with a heavily subsidized distribution of insecticide-treated mosquito nets that focused on pregnant women who were utilizing antenatal care and had completely immunized their children. By 2004, this integrated approach to removing bottlenecks had increased the effective coverage of insecticide-treated mos-quito nets by 40 per cent, while also increasing the effective coverage of immunization (full course for children under five) and antenatal care (at least three visits) from 40 per cent in 2002 to 70 per cent two years later.

See References, page 108.
Clean water and safe toilets have the potential to transform children’s lives. More than any other group, young children are vulnerable to the risks posed by contaminated water, poor sanitation and inadequate hygiene. Unsafe drinking water, inadequate availability of water for washing and cooking, and lack of access to sanitation altogether contribute to about 88 per cent of deaths from diarrhoeal diseases, or more than 1.5 million every year.

Better sanitation alone could reduce diarrhoea-related morbidity by more than a third; improved sanitation combined with better hygiene behaviours could reduce it by two thirds. Hand washing with soap or ashes would prevent 0.5 million to 1.4 million deaths per year. Improved household practices include consistent use of a toilet or latrine by each person in the household, safe disposal of young children’s faeces, hand washing with soap or ash after defecation and before eating, and the installation of safe water sources in households and communities. Providing communities with the knowledge and resources to implement these basic household practices is a vital first step towards improving sanitation and hygiene.

Nicaragua and Peru: Promoting better hygiene to reduce diarrhoea

Like South Asia, Latin America and the Caribbean has experienced significant progress in the areas of water and sanitation, with 16 of the region’s 33 countries reforms to meet their MDG targets. Yet persistent disparities remain, especially between urban and rural areas.

In 2002, the Joint Environmental Health Project-Pan American Health Organization ‘Hygiene Behavior Change Project’ initiated community-based strategies for the region suffering a combined total of 15,000 deaths and 75,000 hospitalizations due to rotavirus diarrhoea every year, despite enjoying a sound infrastructure of hand pumps and piped water. In Peru, reported cases of diarrhoea after implementation fell to 9 per cent, while in latrines and piped water. In Peru, reported cases of diarrhoea after implementation fell to 9 per cent, while in latrines and piped water. In Peru, reported cases of diarrhoea after implementation fell to 9 per cent, while in latrines and piped water. In Peru, reported cases of diarrhoea after implementation fell to 9 per cent, while in latrines and piped water. In Peru, reported cases of diarrhoea after implementation fell to 9 per cent, while in latrines and piped water. In Peru, reported cases of diarrhoea after implementation fell to 9 per cent.

Bangladesh and India: Community-led ‘total sanitation’

Although investment in toilet construction is an important prerequisite of increasing sanitation coverage, evidence from South Asia suggests it is not always sufficient in order to achieve improved public health outcomes. Studies of state-wide sector assessments in India, for example, show that most people continue to defecate in the open not due to a lack of access to toilets but primarily because they see no reason to change their behaviour, as awareness of associated health risks is limited or ignored. In fact, usage of toilets is highest where households recognize the need for a toilet and therefore build one of their own.

To get the other children’s attention, the committees use focus group discussions, posters, expressive songs, theatre, dance, interviews, drawings and competitions. Following this approach, child-to-child sanitation committees have been established and are operational in 251 schools.

Southern Sudan: Community-based water and sanitation in complex environments

It is often assumed that community-based approaches are difficult if not impossible to implement in areas that have been affected by armed conflict, natural disasters or other complex emergencies. Yet evidence from South Sudan suggests that when they are successfully implemented, community-based approaches can play a crucial role in difficult environments. In South Sudan, a water and sanitation project involving local water teams who specialize in hand drilling. Each team has 10 members, usually selected from the local communities; of these, seven are usually drillers and three are responsible for handpump maintenance, including a team supervisor. Hand drilling provides a low-tech, low-cost approach of providing access to water. The rigs can be dismantled and transported between sites by the communities themselves. Their portability allows them to be transported even over difficult terrain and, critically, enables the drilling to continue during the wet season. Furthermore, the low cost and portability of the rigs is essential in inaccessible areas. By working together with communities, this project has successfully extended tube wells across large areas of northern Bahrl el Ghazal.

Maharashtra went from having not even one open defecation-free village to having more than 3,800, with more than 5 million households now living in an environment free of open defecation.

Maharashtra’s success in turn led to a revision of national sanitation guidelines in India and to establishment of the Nirmal Gram Puraskar, or ‘Clean Village Prizes’, introduced by the Government of India in 2004. The scheme offers cash rewards to local governments that achieve 100 per cent sanitation. The response has been tremendous. In February 2005, 38 gram panchayats (the lowest tier of elected rural local government) received the prize; by February 2006, the number went up to 700 gram panchayats and a further 1,000 panchayats (an intermediate tier of elected rural government).

Ghana: Bridging the urban-rural divide

Among the largest disparities in safe water and basic sanitation are those between urban and rural populations. Globally, access to improved drinking-water sources is 95 per cent in urban areas, compared with 73 per cent in rural areas. The urban-rural divide in drinking water is at its widest in sub-Saharan Africa, where 81 per cent of people in urban areas are served, compared with 41 per cent in rural areas.

In Ghana, coverage of rural water and sanitation was, until recently, behind the average for sub-Saharan Africa but is currently expanding at a rate of about 200,000 people, or more than 1 per cent of the population, a year. The change has been dramatic and reflects a sweeping reform programme introduced by the government in the early 1990s in order to address the inefficiencies of a top-down system that was unresponsive and failed to deliver, especially in rural areas. As a result of the reform process, responsibilities for water supplies were transferred to local governments and rural communities, and new political structures for water governance have been developed. Village structures are now part of the new system. To apply for capital grants, communities must form village water committees and draw up plans detailing how they will manage their systems, contribute the cash equivalent of 5 per cent of the capital costs and meet maintenance costs. This participatory approach has resulted in a dramatic increase in access to water, from 55 per cent in 1990 to 75 per cent in 2004, and access is currently accelerating.

See References, page 108.
These countries are also consolidating their bottlenecks, strategies, expected health outcomes and additional fund- ing needs into ‘investment cases’ to leverage political and financial support for their national plans.

**Strengthen health systems at the district level**

Strengthening health systems remains a daunting and complex task, especially in many countries that are making insufficient progress towards the health-related MDGs. The decentralization of health systems and an increasing focus on the district level can be seen as an effective vehicle for delivering primary health care to marginalized children and families at the community level. But decentralization is not without risks: it can have unintended consequences, such as deepening existing inequalities in communities, based on factors such as poverty, gender, language and ethnicity. Furthermore, even where decentralization efforts have been successful, experience suggests that transforming an administrative district into a functional health system takes time. In 2000, for example, only 13 of Niger’s district hospitals were equipped to perform a Caesarean section. Only 17 of the 53 district hospitals in Burkina Faso had appropriate facilities 10 years after decentralization was established; moreover, only 5 of those 17 hospitals had the three doctors required to ensure continuity of care throughout the year.

Nevertheless, the experience of decentralization during the past decade suggests that, on balance, health districts remain a rational way for governments to roll out primary health care through networks of health centres, family practices or equivalent decentralized structures, backed by referral hospitals. Where districts have become stable and viable structures, they have demonstrated notable results, even under situations of complex emergencies, as in the Democratic Republic of Congo and Guinea. Similarly, Mali has broadened its health-centre networks and services for mothers and children. In countries where decentralization has been accompanied by reforms of public administration, there has been significant progress within a few years. Examples include Mozambique, Rwanda and Uganda, all countries that experienced many years of conflict and economic collapse but have since made significant progress in reforming government institutions and performance, including their health systems.

In recent decades, evidence on the performance of district health systems has grown. However, the evidence base is still relatively small, and the approaches advocated by practitioners do not enjoy the same level of consensus and visibility within the scientific community as those on essential interventions.

Training that is focused on local conditions can also help limit workforce attrition. Longstanding efforts to expand the numbers of health workers in rural areas suggest that training local workers – in local languages and in skills relevant to local conditions – facilitates retention. Such approaches to training often lead to credentials that do not have international recognition, which further limits migration. Success, however, is contingent on providing incentives and support at the local level.

There is a growing concern that affluent countries are benefiting from the brain drain at Africa’s expense. As a result, there has been a growing movement calling for an end to the recruitment of health workers from Africa, or, if that proves unrealistic, as is likely to be the case, to conduct recruitment only in a way that is mutually beneficial. In the past five years, a dozen international instruments have emerged from national authorities, professional associations and international bodies that have set norms for behaviour among the key stakeholders involved in the international recruitment of health workers; and similar concerns have been the focus of bilateral agreements.

**The urgent need to address the health worker crisis in Africa**

The lack of adequate human resources represents a major barrier to scaling up integrated approaches to maternal, newborn and child survival, health and nutrition at the community level. The current experience suggests that limited effectiveness, high staff turnover and inadequate supervision characterizes most programmes in developing countries. The massive migration of health professionals, the impact of AIDS, which in some high-prevalence countries has decimated the workforce, as well as the presence of armed conflict, serve to undermine the national health workforce in many developing countries. This has contributed to no or no progress in reducing child mortality. Within these contexts, community health workers can have an important role in improving community health in general and child health in particular. It should be emphasized, however, that community health workers are intended to complement, not substitute for, trained health professionals.

**Health workers at the district and community levels**

The migration of skilled health professionals is a cause of grave concern in many developing countries. A point of particular alarm is the massive migration of health professionals from poor countries to rich countries (the so-called ‘brain drain’). But other forms of movements of health professionals within a country – from rural areas to zones of conurbation, from the public domain to the private sector, and from the health sector to other sectors – are also limiting the pool of skilled health professionals involved in primary health care in developing countries. The reasons doctors and nurses leave the health sector altogether appear to be similar in places as diverse as the Pacific Islands and the European Union. They include low remuneration, inflexible hours with many extra duties, lack of continuing educational opportunities, difficult working conditions, demanding patients and shortages of supplies and equipment. Recent statistics indicate, for example, that half of medical school graduates from Ghana emigrate within 4.5 years of graduation, and 75 per cent leave within a decade. In South Africa, more than 300 specialist positions are vacant every month – many never to return. The main destinations for migrant health workers are Europe and North America. This is particularly true for the United Kingdom, where one third of the health workforce originates from other countries. Research suggests that the density of health workers (doctors, nurses, midwives) is more than 10 times higher in Europe and North America than in sub-Saharan Africa.

The negative impact of migration on the delivery of health services in developing countries is often severe, since this movement of human capital affects the most highly trained professionals, in whom the government has invested heavily through training and professional development.

In addition to these general causes, the AIDS epidemic and armed conflict have also been powerful causes underlying the loss of health personnel in sub-Saharan Africa in particular.

In situations of conflict and post-conflict reconstruction, qualified health providers are vital to provide general and specialized services to vulnerable populations that may have been displaced and injured as a result of the strife. However, in many conflict-affected countries years and sometimes decades of conflict have led to an acute shortage of trained health-care personnel.

To address these shortages of skilled health personnel, at least in the short to medium term, national health systems must build incentives for practising health care at home. While this remains an ongoing challenge, a number of countries have been successful in recruiting and retaining health workers, including in rural areas, where shortages are often most severe. Incentive packages to retain health workers or reverse migration are being devised to address the crisis. One such example is taking place in Mali, where the Ministry of Health encourages newly graduated doctors to serve in rural areas by offering them training, accommodation, equipment and transport if needed.

See References, page 108.
The strategies outlined in ‘A Strategic Framework for Reaching the Millennium Development Goals on Child Survival in Africa’ – prepared for the African Union in July 2005 – are expected to create, in a relatively short time frame, the minimal conditions needed to increase effective coverage of primary health care in sub-Saharan Africa – including a minimum package of evidence-based, high-impact, low-cost services that can be delivered through family and community-based care and through population-oriented services and clinical care. The key interventions are expected to be antibiotics to combat pneumonia and neonatal infection; antimalarial combination drugs; infant feeding and hygiene promotion; insecticide-treated mosquito nets; oral rehydration therapy; skilled attendance at birth, and vitamin A supplementation, prevention and care of pediatric AIDS, and emergency obstetric and neonatal care. These strategies and interventions are expected to have a substantial impact on improving child nutrition, maternal mortality, women’s status and poverty reduction through women’s empowerment. (The three implementation phases are outlined on pages 71-72.)

In phase one, it is estimated that this strategy could reduce Africa’s under-five mortality rate by more than 30 per cent and provide initial reductions of 15 per cent in maternal mortality at an incremental estimated annual cost of US$2–$3 per capita, or around US$1,000 per life saved.

In phase two, implementation at scale of an expanded package would lead to an estimated reduction in the region’s under-five mortality rate in excess of 45 per cent and would diminish maternal mortality by 40 per cent and neonatal mortality by around 30 per cent. The incremental annual economic cost is estimated at around US$5 per capita, or less than US$1,500 per life saved.

In phase three, it is estimated that reaching the effective coverage frontiers with the maximum package of interventions would allow countries to meet or approach key targets for MDGs 1, 4, 5 and 6 by reducing the under-five mortality and maternal mortality rates by more than 80 per cent, cutting the neonatal mortality rate by 50 per cent and halving the incidence of malaria and undernutrition. The incremental annual economic cost to achieve phase three is estimated at US$12–$15 per capita, or around US$2,500 per life saved.

Assuming an incremental pace of implementation, the additional annual funding required for the proposed phased acceleration will increase between US$2 and US$3 per capita and per year to take the minimum package to scale in Phase one; it will increase by more than US$12–$15 per capita and per year to take the maximum package to scale by 2015 in Phase three. It is noteworthy that these additional costs have recently been estimated using different costing tools, each of which has generated similar projections, suggesting that the estimates are robust. The cost is for commodities, drugs and supplies. Insecticide-treated mosquito nets represent a very sizable share of this cost, as do drugs. The cost is apportioned to human resources, health facilities and equipment, and for promotion, demand creation, monitoring and evaluation.

In the context of the Strategic Framework, the following co-financing scenario is proposed: In all three phases, almost half of the additional funding to scale up the minimum package would come from national budgets, including budget support, with 15 per cent coming from out-of-pocket expenditures, and one third from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), UNICEF, the World Bank, WHO and other donors.

See References, page 108.
The shortage of health workers in developing countries must be addressed in national plans to reverse its negative impact on the health of mothers, newborns and children. A health worker examines a child at the regional centre for AIDS prevention and protection, Russian Federation.

could yield important insights into the ways that current policy process function and might be improved. Some significant problems – such as building institutional capacity and obtaining strategic intelligence for steering and monitoring resource flows and health system performance – are already well recognized by practitioners.

It is clear that there is much work to be done in gathering evidence and knowledge on ways to build capacities for policy formation, regulation and steering that can inform governance of the health sector as a whole, as well as the organization of a continuum of maternal, newborn and child care at the district level.

III. Improving the quality and consistency of financing for strengthening health systems

Finding the money to finance health care is a significant obstacle to scaling up in low-income countries, where health-care sectors already face huge budget shortfalls. Policies determining government health-financing can have a profound effect on health outcomes for children and women, through subsidizing or taxing critical services affecting maternal, newborn and child survival, health and nutrition or by supporting equitable cost-sharing mechanisms.

Adequate financing of the health sector, in addition to fighting specific diseases, is imperative for effective, sustainable scale-up. The less than optimal outcomes from earlier and current support to the health sector have largely been attributed to several factors, namely:

- A lack of evidence and country-based budgeting for health outcomes. Given the predominance of disease-specific initiatives, national strategies for maternal, newborn and child health often do not give sufficient attention to a multi-sectoral approach to achieving health outcomes, removing systemic bottlenecks to service delivery or adequately budgeting for health strategies – including the costs of removing bottlenecks to the supply of and demand for primary health-care services.

- Slow progress and weak alignment to country processes and harmonization. Linkages between the health sector and broader development processes at country level (public sector and budget reform, poverty reduction strategies, macroeconomic and fiscal planning, etc.) often remain tenuous in low-income countries. Monitoring systems for tracking resource flows, progress and outcomes are often largely inadequate, and there is limited progress in translating global commitments on aid effectiveness into concrete action at country level – most particularly in relation to the provision of predictable long-term financing and the reduction of fragmented aid to health. Linkages between health systems as a means of achieving development outcomes – both directly and by influencing other donors and call for greater coherence in the health aid architecture.24 There is a growing agreement about the importance of supporting robust sectoral plans, and about the desirability of ensuring full coherence with existing efforts on health systems strengthening. Key issues related to these new initiatives include development and quality of scaling-up plans, monitoring processes and selection of countries, as well as flow and management of funds.25

In this context, a consensus is emerging on five principles for aid financing performance in a predictable way through compacts. Along with the renewed emphasis on results, there is an emerging consensus.

Focus On

Botswana: Going to scale with HIV prevention and treatment using community partnerships

Context and challenge: AIDS is a foremost cause of maternal, newborn and child death in southern Africa. In Botswana, almost 1 in every 4 people aged 15-49 is infected with HIV. The risk to children begins before birth, one third of pregnant women aged 15-24 in Botswana are HIV-positive. Maternal HIV-positive status leads to an increased rate of stillbirths and deaths in the neonatal period and infancy, even if HIV is not transmitted to the child. Women who contract HIV during pregnancy or while breastfeeding have a high risk of passing the infection to their newborn. Moreover, mothers are increasingly at risk of death, leaving behind babies with diminished chances of survival. AIDS is a significant cause of disability and death in babies and children beyond one month.

Interventions and approaches: In Botswana, prevention of mother-to-child transmission of HIV (PMTCT) was initiated in 1999 with strong political commitment and high resource allocation. From the outset, the Government of Botswana planned for national coverage of interventions. Services are provided free of charge to women and children and integrated into existing maternal and child health services. These interventions include safe obstetric practices, counselling, HIV testing, prophylaxis or treatment for HIV infection as indicated, and testing of babies for HIV infection at six weeks of age. Antiretroviral therapy is also provided to qualifying mothers and their families. Rigorous monitoring and evaluation is implemented and supply chains closely managed.

One of the central success factors in Botswana was the unified coordination mechanism around a single national scale-up plan. PMTCT was fully integrated with maternal and child health services, but ongoing adjustments were made to increase quality and service uptake. Political commitment was important, as was cohesive programme management. Community participation and male involvement were also crucial elements to support women who chose not to breastfeed and to facilitate follow-up paediatric care and support.

Results: In Botswana, the programme expanded to nationwide coverage by 2004. By 2005, 54 per cent of HIV-positive mothers were receiving antiretroviral drugs during pregnancy.

See References, page 108.

Slow progress and weak alignment to country processes and harmonization. Linkages between the health sector and broader development processes at country level (public sector and budget reform, poverty reduction strategies, macroeconomic and fiscal planning, etc.) often remain tenuous in low-income countries. Monitoring systems for tracking resource flows, progress and outcomes are often largely inadequate, and there is limited progress in translating global commitments on aid effectiveness into concrete action at country level – most particularly in relation to the provision of predictable long-term financing and the reduction of fragmented aid to health. Doing this requires strengthening health systems as a means of achieving development outcomes –
that resources should be allocated on the basis of such criteria as need (based on such factors as population size, poverty levels and current state of health), potential impact (health outcomes and capacity to absorb funds effectively). Performance would be related to key results and policy measures agreed at the country level in a ‘compact’ that builds on existing results-oriented frameworks, such as those developed by the European Commission, World Bank and African Development Bank and bilateral donors.\(^8\)

These compacts constitute mutual agreements between developing countries and donors based on accountabilities and meeting performance criteria by recipients and provision of predictable financing by donors.

**Aligning development assistance to country systems**

Alignment of disbursement and implementation to country systems financing can represent an advantage and effectiveness. In countries with fiduciary environments (public financial management and procurement) that are considered adequate overall by multilateral and bilateral donors and jointly monitored by partners through the public expenditure and financial accountability mechanism, funding for effective scale-up could flow as sector budget support – providing incremental funding for the implementation of the health-sector component of the national budget, as well as related activities. Monitoring the effectiveness of these funds would be integrated into the monitoring of the existing general and sector budget support. A similar mechanism could be used in countries with sector-wide approaches and basket fund mechanisms, complementing existing evaluation methods.

There is a growing consensus that resources for the health sector should be channelled through institutions that aim to provide universal coverage, rather than through projects and programmes. Maternal, newborn and child health services must be part of the basket of core health interventions that are covered in any benefit package funded through these institutions. Enhancing resources spent on maternal, newborn and child health may require trade-offs in government expenditures, either within the health budget itself or within the national budget. Such trade-offs need to be negotiated in the context of the overall macroeconomic environment, which can allow for incremental sector spending if health-care requirements are well argued. At the country level, resources also need to be mobilized outside of the public sector through the involvement of the private sector, civil society organizations, communities and households.

**Results-based financing**

One of the key areas supported by the new scaling-up initiatives is results-based financing. This is an important complement to existing funding flows and a potentially promising approach to surmounting existing obstacles within health systems to achieve health, nutrition and population results. Recent experiences in Afghanistan, Argentina, Cambodia and Rwanda (see Panel, page 44, on performance-based financing in Rwanda) have shown positive results, and more rigorous evaluation for the latter is planned.

Results-based financing offers several advantages over traditional, input-based approaches, including:

- An emphasis on achieving outputs and outcomes relatively quickly within a well defined time period.
- Incentives for performance at key junctures in the service delivery chain.
- Addresses important funding gaps, provides governments with flexible financing to counterbalance funding distortions and gives them the opportunity to focus on priorities, such as targeting the poor.
- By design, results-based financing is essentially a monitoring and evaluation tool, built on a measurable and targeted strategy that requires baselines, targets and progress data at the relevant levels. Consequently, results-based efforts will allow regular review of successes, shortfalls and bottlenecks, enabling midstream adjustments to implementation plans.
- Perhaps most importantly, results-based financing creates an opportunity to consolidate fragmented aid, thereby reducing high transaction costs to countries. This can be accomplished through results-based financing arrangements that focus on outputs to which many donors can simultaneously contribute.\(^27\)

**Strengthening accountability and governance in health-service delivery**

Accountability in service delivery may be conceived of as processes through which communities and households can hold providers responsible for the adequacy and effectiveness of the services they offer. For poor and marginalized communities and households, public accountability can be achieved through giving them both voice and suffrage; for policymakers, accountability can be demanded through the social compact in which governments assist, finance and regulate providers of health care, nutrition and environmental health services. When communities are empowered to demand adequate and effective services, families are informed of which services the State has committed to provide and the minimum standards that apply.

Embedding participation in public life and civic education in all maternal, newborn and child survival and development programmes ensures that families are empowered with knowledge of the measures they can take to protect their child’s life and enhance the child’s early development. Household and community knowledge of available services and the standards of quality required for these services enhance their ability to hold governments and service providers accountable.

Strengthening accountability must be tailored to different modes of service delivery. At the primary level of community and family services – including such factors as information and social support for promoting breastfeeding or newborn care services – the ability of households to purchase commodities, access information on services and transform both into better health outcomes is central to increasing demand-side accountability. Community and civil society organizations and commercial networks are often well placed to provide mechanisms for poor and marginalized households that can directly monitor the efficacy of services and exert accountability.

See References, page 108.

**Establishing benchmarks and outcome indicators for health-system development**

Indicators associated with the health-related MDGs can serve as appropriates tracers or proxy measures for the performance of health systems. New initiatives plan to provide support to governments to achieve agreed outcomes in selected target areas through results-based financing, establishing appropriate incentive frameworks. The objective is to achieve defined output targets for coverage of services that are strongly

Enhanced political commitment and adequate financing by governments are necessary to guarantee access to the continuum of care for mothers, newborns and children. A child holds his baby sister, Guatemala.
correlated with positive maternal, newborn and child health and survival outcomes – for example: the proportion of deliveries in an accredited facility; immunizations coverage of three doses of diphtheria, tetanus toxoid and pertussis vaccine; or coverage of insecticide-treated mosquito nets in malaria-endemic areas. These outputs and targets would be selected based on the risk factors contributing to mortality and morbidity for each country.

Key outcome indicators can be set in various forms. These parameters can measure either direct outputs, such as the absolute number of children immunized; coverage, such as the percentage of the target population vaccinated, by antigen, in a defined catchment area; or trends, such as increases in the number of children vaccinated or coverage levels achieved over time. A set of core indicators can also be defined for all projects to allow for some cross-country comparison and learning. Countries could also include additional indicators that monitor important elements of their maternal, child and newborn health programmes. Developing innovative and equitable financing strategies Investment in human resources and health-system strengthening requires significant resources. Countries where donor support plays a critical role in funding these programmes cannot plan for long-term activities unless financing is secure. Yet, research tracking donor assistance to maternal, newborn and child health found that the 60 priority countries that account for more than 90 per cent of child deaths received only US$1.4 billion in official development assistance in 2004, or just US$3.10 per child.20

While the Strategic Framework suggests that it is possible to fill the gap between present levels and near-universal coverage by 2015, it also shows that scaling up interventions will not be possible without massively increasing investment in maternal, newborn and child health.29

Moving towards universal access to a continuum of quality maternal, newborn and child health care, however, is not merely a question of finding money to expand the supply of services or to pay providers. Reaching the health-related MDGs will require that financing strategies focus on overcoming financial barriers to women and children’s access to services and give users predictable protection against the financial hardship that may result from paying for care. This has important implications. Calls for the immediate and universal elimination of user fees for health-care services may prove overly simplistic or unrealistic. Policy decisions regarding user fees should be addressed within the broader context of the health sector budget and the national budgetary framework. Over time, user fees may be phased out in favour of prepayment and pooling schemes, on condition that this is accompanied, from its inception, by structural changes to ensure the long-term sustainability of health financing.

IV. Obtaining national political commitment

Given the level of resources required to ensure access to quality primary health-care services and financial protection, scaling up is as much a political challenge as it is a technical one.

Performance-based financing in Rwanda

The Government of Rwanda, with support from donors, has recently scaled up several innovative programmes that transfer conditional grants from the central government to municipalities to finance the purchase of essential health outputs. The health programme includes three principal elements:

Community partnerships in health: This transfers resources (about US$0.25 per capita) directly to municipalities to engage, via a performance-based contract, community-based institutions, non-governmental organizations, health promoters, private health-care providers and other related services to deliver essential interventions at the household and community levels. A performance contract called IMIHUGO – a traditional word that has become synonymous with accountability in government services throughout the country – is signed between the President of Rwanda and district mayors on behalf of their constituencies every year. The services delivered under this approach are simple and low cost, focusing on the promotion of improved health and hygiene practices, behaviour-change interventions, and such preventive services as distribution of insecticide-treated mosquito nets, oral rehydration therapy, nutritional supplementation and safe water systems.

These partnerships were introduced in several districts during 2005 and have been scaled up at the national level since 2006 using treasury funds. The central government signed performance contracts with the 30 municipalities in April 2006 and selected coverage of insecticide-treated nets as the lead performance indicator. Marked results have been achieved since its inception. An evaluation undertaken in June 2007 found that utilization of mosquito nets by children under five had increased from less than 1 per cent in 2004 to more than 70 per cent in 2007. The number of cases of malaria has decreased dramatically, emptying paediatricwards, and population-based surveys using blood tests show a dramatic decrease in malaria prevalence. Policymakers rate the situation as unprecedented and are working now at a strategy to eliminate malaria altogether.

Health centres: This transfers resources (about US$1 per capita in 2007, or about 15 per cent of government resources appropriated to health) to primary care centres through a performance-based contract. The scheme was initially piloted in two provinces, Butare and Cyangugu, with the support of non-governmental organizations and bilateral aid from 2002. The performance-based contract includes indicators related to adequate coverage (quantity), as well as effective coverage (quality) of services. An evaluation has shown a significant increase in utilization of health services, including immunization and assisted deliveries, in the provinces where the contracts had been implemented compared with provinces that were not covered by the contracts.

The Government of Rwanda subsequently decided to gradually expand the programme to other provinces, incorporating lessons from the pilots. In 2005, budget allocations for the programmes were apportioned to two provinces that had undertaken the pilot schemes. The following year, the programme was expanded nationwide and fully transferred to the national budget, and it directly linked service delivery, results and payment.

A steering committee has been established in each province to independently monitor the performance of the health centres using lot quality sampling and satisfaction survey techniques. The results of the independent verification directly affect the amount of funding received by each centre. Again, results from the centres were impressive, with immunization coverage rates of 95 per cent and increases in the annual utilization of services from 0.4 visits per capita in 2004 to 0.7 per capita in 2006 and in assisted deliveries from 29 per cent in 2000 to 52 per cent in 2006. The full impact of these schemes on health outcomes is being evaluated through a randomized controlled prospective design. The programme has also been expanded to all district hospitals of the country.

Health micro-insurance schemes: Mutuelles – informal micro-insurance schemes that pool funds from community members to cover a package of basic health services provided by health centres and for the transfer of patients, if needed, to referral hospitals – have been piloted successfully during the past decade. Their aim is to smooth the cost of health services for members, eliminating the hardship of making out-of-pocket payments.

Mutuelles have an important role in intermediating between health centres, district hospitals and the general population. Evaluations show that they are more effective when they have strong community participation in their governance structures and make payments to the health centres on a per capita basis, essentially transferring all insurance risk to the health centres. Initially, the focus was on building administrative and management support and technical resources, including training and development of appropriate tools. But since 2006, the Rwandan Government has transferred funds (about US$0.15 per capita) to cover premiums for the poorest people in the community, who are identified on the basis of a participatory poverty assessment called Ubudehe. Rwanda has systematically supported the expansion of mutuelles, which covered about 70 per cent of the population in 2007, up from 7 per cent in 2003. Enrolment of the poor in mutuelles is a key indicator in the performance-based contract signed by the mayor and the president. The Government is also engaged in creating municipal pooled funds, as well as a national fund for reinsurance financed by contributions from formal workers.

See References, page 108.
Sustained improvements in maternal, newborn and child health will necessitate long-term commitments that go well beyond the political lifespan of many decision makers. Countries including Brazil, Sri Lanka and Thailand have rooted their impressive results in a step-by-step extension of health-system coverage and nutrition services over many years. During recent decades, Latin America’s performance in enhancing health-service coverage, despite periodic economic crises, institutional deficiencies and wide socio-economic disparities, has been noteworthy. All of the countries mentioned went through several distinct phases:

- Building up a cadre of professional health workers as the foundation.
- Developing an accessible network of community-based, primary and referral-level services.
- Consolidating advances by improving the quality of care, all in conjunction with improvements in living conditions and the status of women.
- Prioritizing broad social safety nets that ensured equitable access to health, nutrition and education, making health and nutrition services widely available.
- Reducing barriers to key services and providing primary and secondary schooling to all children.

Even in some of the poorest countries in Latin America, where economic crises, institutional deficiencies and wide socio-economic disparities continue to hinder advances, there has been marked progress towards generalized access to quality health care.

Country ownership and public sector leadership can vastly increase the prospects for successful scaling up. Time and again, it has been shown that when governments take the lead and are committed to expanding successful pilot and small-scale projects,

**Focus On**

**Brazil: Creating a national community-based health-system network**

**Context and challenge**: Brazil is one of 60 countries selected by the Countdown to 2015 group as a priority for child survival in the run-up to the deadline for the Millennium Development Goals. (For a more detailed explanation of Countdown to 2015, see Chapter 1, page 16.) These countries represent those with at least 50,000 child deaths or with a rate of under-five mortality of 90 deaths or more per 1,000 live births. In 2006, 74,000 children died before reaching their fifth birthday, according to the latest estimates published by UNICEF.

Although Brazil has made strong and steady progress in reducing mortality rates for children under five, there are clear geographical and ethnic disparities in death rates for infants. According to 2002 data, the aggregate infant mortality rate for the north-east region is twice as high as rates in south, south-east and central-west provinces. In Alagoas, the worst affected state in the north-east region, the infant mortality rate in 2002 was 58 per 1,000 live births, compared to a national average of around 28 per 1,000 births that year. Racial and ethnic disparities in child mortality risks are also evident, and children whose mothers are of indigenous or African descent are threatened by a much higher risk of mortality than children of European-descendent mothers.

The challenge facing Brazil, therefore, is to maintain the downward trend in overall child mortality while simultaneously adopting a strong regional and ethnic focus to health-care provision.

**Approach and interventions**: After pilot projects in Brazilian cities during the early 1980s, a community health worker network was created with UNICEF support as part of a comprehensive primary-health-care initiative, the Programa Saúde da Família (Family Health Programme). Each community health worker is responsible for visiting families in the community, providing up-to-date information on health, hygiene and childcare, and monitoring and evaluating the growth and health of children under 6 years old, as well as pregnant women. Community health workers also refer residents to local health units and alert family health teams — which usually include a doctor, a nurse, a nurse technician, a social assistant and a dentist — regarding local conditions or crises. Doctors and nurses participating in the Family Health Programme receive competitive salaries to encourage them to work in poor and rural areas. Each team is responsible for around 1,000 families. The teams are jointly financing their work through federal, state and municipal governments.

The activities of community health workers in the Programa Saúde da Família include providing education on child development and protection. UNICEF equips workers with Family Information Kits that include flip charts about breastfeeding and the role of all family members in promoting healthy lives for mothers and children. More than 222,280 community health workers cover nearly 110 million people across Brazil, making this network one of the largest in the world. The network is integrated within the national system, and federal, state and municipal governments are fully responsible for funding and administering the programme throughout Brazil.

The use of field trials before implementation of the programme established that it had the potential to generate marked improvements in health. Political commitment to the network ensured its viability. Roles for the community health workers are well defined, including their designation as part of local health units. Lines of referral and supervision are clear. The unit supports the health workers, and they, in turn, perform outreach for the health system in the communities. The community health workers become a central part of their local communities, and the integration of the network within national, state and municipal governments helps ensure both the sustainability of the programme and its extension into new areas of the national health system.

**Results**: The introduction of the community health worker programme has contributed to a reduction in infant deaths across the country since 1990. Moreover, the government has focused on the north-east region and on marginalized ethnic groups during recent years. It has also adopted a strong regional focus to child and maternal health care, and almost half of the participants who receive cash benefits from Programa da Saúde live in the north-east.

**Figure 4.5**

Brazil: Wide disparities in infant mortality rates between and within selected regions, by family income and by mother’s ethnicity, 2002

<table>
<thead>
<tr>
<th>Infant mortality rate (per 1,000 live births)</th>
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<tbody>
<tr>
<td><strong>2000</strong></td>
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<tr>
<td>Disparities by family income</td>
</tr>
<tr>
<td>20 per cent richest households</td>
</tr>
<tr>
<td>20 per cent poorest households</td>
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<tr>
<td>Disparities by mother’s ethnicity</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Afro-descendent</td>
</tr>
<tr>
<td>Indian</td>
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<tr>
<td>National Average</td>
</tr>
<tr>
<td><strong>2002</strong></td>
</tr>
<tr>
<td>Regions/selected states</td>
</tr>
<tr>
<td>Central-West</td>
</tr>
<tr>
<td>Federal District</td>
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<tr>
<td>Northeast</td>
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<td>Alagoas</td>
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<td>North</td>
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<td>Southeast</td>
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<td>Sao Paolo</td>
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<td>South</td>
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<tr>
<td>Rio Grande do sul</td>
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<td>National Average</td>
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| 15.8                                        |
| 34.9                                        |
| 22.9                                        |
| 38                                          |
| 94                                          |
| 30.2                                        |
| 20.4                                        |
| 17.5                                        |
| 41.4                                        |
| 57.7                                        |
| 27.7                                        |
| 20.2                                        |
| 17.4                                        |
| 17.9                                        |
| 15.4                                        |
| 28.4                                        |


See References, page 108.
A new way of working together for multilateral institutions

In New York, 19 July 2007, global health leaders from eight international organizations met informally to discuss ways of strengthening their collaboration to achieve better health outcomes in developing countries. Capitalizing on the recent appointments of several leaders, the objective of the meeting was to review progress made during recent years, assess current trends and future challenges for global health, and agree to collective action, in the context of current opportunities. Several key commitments were recommended, including:

- **Stimulate a global collective sense of urgency for reaching the health-related MDGs.** Participants agreed that, despite important advances in health care for mothers, newborns and children in some countries and for some indicators, the international community – in partnership with national governments – must accelerate and intensify efforts dramatically in order to reach all of the health-related Millennium Development Goals. The eight organizations represented have an important role in stimulating a sense of urgency in their own organizations and support it through budgetary and human resources decisions.

- **Modify institutional ways of doing business.** Achieving the health-related MDGs will require increased collaboration and teamwork. Emphasis was placed on clarifying the core responsibilities of each agency; the need for a coordinated inter-agency approach to providing high-quality, demand-driven technical assistance; and implementation of a collectively supported, remotely monitored and evaluated system. Such approaches need to build on existing structures and programmes at the global, regional and country levels. Each of the organizations agreed to evaluate their personnel, training programmes and incentives structure to reflect this new, collaborative way of doing business, recognizing that new skills will need to be developed, particularly at the country level. The development of a framework for mutual accountability would ensure more clarity on roles, responsibilities and milestones, and a system for monitoring commitments.

**Action:** The global health leaders agreed to work together to better define their individual and collective accountabilities for better and faster results.

- **Stabilize a more systematic and robust approach to knowledge management and learning.** Given the significant new investments in global health, opportunities are available to capture knowledge and lessons learned in health programmes. The participants emphasized the opportunity to conduct more systematic mapping of the health sector at the country level, including the role played by the private sector.

**Action:** The global health leaders agreed to explore means to systematically capture knowledge gained in health programmes and to develop a more robust and coordinat-ed approach to knowledge management in general. Finally, the group agreed to pool resources when their organizations conduct mapping exercises and health sector assessments.

- **Recognition of the important opportunity presented by the renewed interest in health systems.** Participants welcomed the commitment to the health-related MDGs as articulated in several new global initiatives being developed around health-system strengthening. Such support is well aligned with the priorities of the participating organizations. There was strong agreement for adopting a ‘systems for outcomes’ approach whereby strengthening would be evaluated by its ability to deliver against health outcomes. In addition, the group recognized the key brokerage role of the UN agencies in bridging the need for accountability and countries’ desires to lead their own development processes.

**Action:** The global health leaders expressed their commitment to involve the private sector and civil society more systematically as the work on the health-related MDGs expands at global, regional and country levels. The group has agreed to monitor progress towards achieving the commitments made at this meeting.

The global health leaders agreed to engage emerging global initiatives in a coordinated manner to ensure their organizations effectively support countries through funding and/or technical and policy assistance. In addition, WHO and the World Bank committed to fast-track the benchmarking of health system performance.

- **Recognition that the role of civil society and the private sector will be critical for success.** The private sector has several roles to fulfil in delivering health services, in financing health care and in bringing new technologies to market. Innovations can help accelerate progress, whether they are technologically driven or new programme models, such as micro-venture and performance-based financing. Non-governmental organizations have a long history of delivering services in developing countries, and their field experience is a source of important lessons. Support to developing countries in reaching the health-related MDGs will require strengthening integrated delivery systems across the public and private sectors, and creating opportunities for private sector involvement and investment.

**Action:** The global health leaders expressed their commitment to involve the private sector and civil society more systematically as the work on the health-related MDGs expands at global, regional and country levels.
Human rights, community-based health care and child survival

by Paul Farmer and Jim Yong Kim

With 20 years of experience in rural Haiti introducing modern medical care to millions who had not previously enjoyed it, we now know many of the requirements for a successful health-care programme in areas devastated by disease and poverty. To provide primary care alongside specialized treatment for infectious disease, while promoting women’s and children’s health, community health-care workers must be trained and mobilized to prevent illness and to deliver quality health care. With recent expansion to Lesotho, Malawi and Rwanda, we now see that many of the lessons learned in Haiti are universal in improving the health of children and adults worldwide.

In each of the settings in which Partners In Health works, our goal is to “do whatever it takes” to improve the health and well-being of those we serve, almost all of whom live in poverty. In each setting, we have learned that health problems do not occur in isolation from other basic needs, such as adequate nutrition, clean water, sanitation, housing and primary education. We have also learned that non-governmental organizations cannot work in isolation but must collaborate with members of the communities served and with local health authorities to strengthen public health so that future generations may come to regard these services as rights rather than privileges.

This rights-based, community-based approach to promoting health leads to a clear vision regarding the health of children.

In Haiti, Lesotho, Malawi and Rwanda, Partners In Health – in collaboration with local communities and a wide range of partner organizations, including the Clinton Foundation, ministries of health, UNICEF and the François-Xavier Bagnoud Center for Health and Human Rights – has identified five key components for a comprehensive, community-based child survival programme.

First, we work with public health authorities to roll out the interventions shown to be crucial to improved child survival. These include expanded vaccination campaigns; vitamin A distribution; the use of oral rehydration salts to treat diarrhoeal disease and safe-water programmes to prevent it; an aggressive programme for prevention of mother-to-child transmission of HIV; malaria prevention with mosquito nets, backed by improved community-based and clinical care; nutritional assistance for children suffering from or at risk of malnutrition; and the provision of high-quality in-patient and ambulatory paediatric services for those children who do fall ill. Currently, we are working with the Government of Rwanda and other partners to show how an integrated package of key child survival interventions, including prevention of mother-to-child transmission of HIV, can be rapidly deployed under the Government’s strengthened rural-health-care model. With support from the international Joint Learning Initiative on Children and HIV/AIDS, a cross-sectoral, interdisciplinary exercise in collaboration between leading practitioners, policymakers and scholars, practitioners scaling up child survival interventions in rural districts are sharing innovations and results through a collabora-
tive network that will enable them to improve service quality, even as they reach greater numbers of children and families in previously underserved areas.

Second, since the health and well-being of mothers are key determinants of child survival, our efforts promote access to maternal and child health. Our work on behalf of children is linked to efforts on behalf of their mothers and other family members through family planning programmes, pre-natal care and modern obstetrics as part of women’s health programmes, efforts to promote adult literacy and poverty alleviation in general.

Third, we initiate and/or strengthen paediatric AIDS prevention and control programmes. As part of an upcom-
ing campaign, and in the manner outlined above, we are launching a major paediatric AIDS initiative in Rwanda in concert with the Clinton Foundation and Rwandan health officials and providers. This initiative will establish a nation-
al centre of excellence for paediatric AIDS care. Quality paediatric services will be linked to community-based care for children with HIV and also to prevention efforts within primary and secondary schools in rural Rwanda.

Fourth, we need to launch operational research and train-
ing programmes designed to improve the quality of care afforded to rural children. Such research will examine the programmatic features of successful efforts to prevent HIV transmission from mother to child; the diagnosis and management of HIV among infants; paediatric tuberculosis diagnosis and care; the role of community health workers in improving care for chronic paediatric conditions, including AIDS and tuberculosis, and in preventing, diagnosing and providing home-based treatment for such common ailments as malaria and diarrhoea; and assessing the impact of social interventions, including those designed to curb food insecurity and illiteracy, on the health and well-being of children worldwide.

Fifth, we work to advance these efforts in tandem with those designed to promote the basic rights, in particular, the social and economic rights, of the child. The Partners In Health Program on Social and Economic Rights (POSER) disseminates, through tangible projects and through advocacy, a rights-based model of poverty allevi-
ation, using access to health care as a means of maternal and childhood health, using access to health care as a means of meeting the needs of the poorest children and families in the communities we serve. POSER backs education, agricul-
ture, housing and water projects to guarantee basic social and economic rights for every child and every family. If we know that hunger and malnutrition are the underlying cause of millions of child deaths each year – and we do – then we must face up to the challenge of pre-
scribing food as an essential medicine for immunization and paediatric care. Similarly, if studies show that educa-
tion reduces the risk of infection with HIV – as they do – then we must be prepared to invest in access to schooling as a potent and cost-effective element in our formulae for combating HIV and other diseases of poverty.

We now know that without a community-based, compre-
hensive strategy, efforts to treat children – and subsequent-
ly mothers, fathers and siblings – fail to provide the desired outcomes. Working in conjunction with ministries of health, international institutions and other non-profit organizations, we are committed to stemming the tide of childhood death and disease in the areas we serve. From experience in Haiti and now around the world, we know that community-based services to improve health and reduce poverty, linked, when necessary, to excellent clinical resources, offer the highest standard of care in the world today and the key to improving child survival.

Are affordable and cost-effective at scale.

Fit within existing structures and hierarchies and have the support of professional groups and lobbies.

These political considerations are likely to constrain some of the tech-
nical choices that advocates of the continuum prefer, but unless such political concerns are acknowledged and addressed, the strategies they promote are unlikely to succeed.

Stability, in political and macro-

economic terms, and sound budget-
ings are prerequisites for mobilizing the institutional, human and financial resources required to strengthen health systems and nutrition services. Many of the countries struggling to meet the MDGs, particularly in sub-Saharan Africa, do not enjoy political or economic stability. Under such circumstances, it is important to mobilize all forms of effective leadership in society, whether at the national level where broad sectoral decisions are made or at various sub-
national levels (provincial, district) where the interaction with communi-
ties takes place.

In contrast to the extensive knowl-
edge of the technical and contextual interventions required to improve maternal, newborn and child health, there is less known on how political commitment to a result-oriented approach to health services delivery is both effected and sustained, partic-
ular in settings of low health systems

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In sub-Saharan Africa, where the situation of young children is most dire, UNICEF, WHO and the World Bank collaborated in 2006 on an analysis of what it would cost to reduce child mortality there (see Panel, Chapter 4, page 78). By scaling up the existing interventions highlighted in this report, deaths of children under five could be reduced by 35 per cent by 2009 at an additional cost of about US$2.50 per capita (or about US$800 per life saved). To fully achieve MDG 4, a reduction in under-five mortality by two thirds by 2015, would require additional strengthening of Africa’s health systems, as well as the introduction of new interventions, such as vaccines against rotavirus and pneumococcal infections. The analysis found that it is entirely feasible to save the lives of more than 5 million children and nearly 200,000 mothers a year. What would saving these lives cost? An additional US$10 per capita per year (or less than US$2,000 per life saved). 10

At the 2005 G8 Summit in Gleneagles, Scotland, the major industrialized nations pledged to double their aid to Africa by 2010. Yet, as of mid-2007, there is little advance in this direction. 11 African countries, too, have been remiss in demonstrating their commitment to their own children. In the Abuja Declaration, adopted at the Organization of African Unity’s special summit on AIDS in 2001, African leaders included a commitment to devote 15 per cent of their national budgets to health. Yet six years later, only a few countries have managed to do so. 12

The resources are available to meet the health-related MDGs. The world is richer than it has ever been. Financial flows to developing countries are at record levels, in terms of private debt inflows, foreign direct investment, portfolio equity and remittances. And yet, while official development assistance has doubled since 2000, its increase has lagged marginally behind other financial flows (see Figure 5.1, page 99). Donors have yet to make good on their promise to increase assistance to Africa and will need to step up efforts markedly in the coming years.

Make maternal, newborn and child survival a global imperative

Many have heard the cry for child and maternal survival. Since the early years of the child survival revolution, global partnerships for health, often financed through private sources, have proliferated and reinvigorated the field: including, for example, the Flour Fortification Initiative, the Global Alliance for Improved Nutrition, the GAVI Alliance, the Partnership for Maternal, Newborn & Child Health, Roll Back Malaria and the Special Programme for Research and Training in Tropical Diseases, among many others.

As a consequence of these and other alliances, public attention to global health issues is at an all-time high. Research and development sponsored by these partnerships are beginning to yield results, with 25 drugs, 8 microbicides and 50 vaccines in the pipeline to address diseases predominately affecting the poor. A number of these partnerships have proved remarkably effective in offering communities free or reduced-cost medicines whose quality is assured, along with vaccines. Others are improving national policymaking and supporting institutional reforms. Still others are contributing to the establishment of norms and standards in treatment protocols. 13

Yet, in their single-mindedness to produce results, it has been argued that global partnerships are often donor- and commodity-driven rather than country- and community-centred. Moreover, a frequent focus on single diseases has sometimes meant an over-reliance on vertical interventions and insufficient emphasis on integrating services and strengthening national health systems. The message that has been widely heard – and heeded – is that developing countries must take the lead and ‘own’ the solutions to their health problems. This will require greater harmonization and alignment with developing countries’ own priorities, systems and procedures. Indeed, this was the position adopted in the Paris Declaration on Aid Effectiveness in March 2005, which is providing a framework through which donor

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UNITING FOR CHILD SURVIVAL 101
The other side of the mat: Uniting for maternal, newborn and child survival and health

by Melinda French Gates, Co-chair, Bill & Melinda Gates Foundation

When Bill and I meet people in the developing countries we visit, it’s easy to see what we have in common with them, in spite of our different circumstances. Like us, they have hopes for the future. They have parents who love them and children who need them. They have intellectual curiosity, an entrepreneurial spirit and a determination to make life better for themselves and their children.

I am especially moved by the mothers I meet. They invite me into their homes, and we sit on the floor, often on opposite sides of a small mat, talking. I have young children myself, and I try to put myself in their position. What would I do if I were on the other side of the mat? What would I want for my children?

If I were a pregnant mother in Bangladesh, I would want a skilled attendant who knew how to help me deliver my baby safely. If I were a young mother in India, I would want to know the facts: that breastfeeding instead of using formula is one of the best ways to save my newborn from cholera. If I were a mother in Malawi and my daughter got sick with diarrhoea, I would hope that she could get the electrolytes she needed before it was too late.

Those would be my hopes, my dreams, my wishes. But for many, they are not the reality of their daily lives. The reality is this: In 2006, 9.7 million children died before they turned five – most from easily preventable or treatable causes.

In some countries I’ve visited, mothers don’t give their children names for weeks or even months because they don’t want to start caring about them. The chance that their children will die in those first weeks is just too high. When I hear such stories, I am jolted back to my side of the mat. How can such widespread tragedy be so common in the developing world?

On my side of the mat, when my kids are sick, they get antibiotics. On the other side of the mat, when their children get sick, they may be receiving a death sentence. Those of us in wealthy countries must try to put ourselves on the other side of the mat.

Fortunately, the story is starting to change. Governments around the world are doing more for children’s health. Efforts to treat and prevent the world’s most devastating diseases are improving the lives of millions of children.

To keep this momentum going, we must remember that these mothers love their children just as much as we love ours. We must see that these children have boundless potential. And we must help them realize their potential by bringing more governments, more businesses and more individuals to this work – to unite for maternal, newborn and child survival and health. When we do, all mothers will have a chance to see their children grow up happy and strong, and all children will have a chance to make their dreams come true.

The challenge is to build on the progress achieved across the developing world in preventive interventions delivered by outreach services, particularly in recent years. Expanded interventions delivered by outreach – notably expanded immunization programmes, enhanced distribution of insecticide-treated mosquito nets, greater distribution of oral rehydration therapy and a broadening of vitamin A supplementation – have enhanced the input side of the child and maternal health balance sheet. Analysis of these results, together with the enhanced frequency of data collection, promises to show a marked impact on child and maternal survival outcomes in the coming years.

Notwithstanding the many initiatives, programmes and policies that have proliferated since the first year of the new millennium, the opportunity to reduce deaths among children under five has never been clearer. What needs to be done for progress in child survival is clear. When it needs to be done, and who needs to be involved is also clear. The need to be united – in both word and deed – to ensure the right of mothers, newborns and children to quality primary health care is clearest of all.

The challenge is, therefore, to shake off any cynicism and lethargy and put aside the broken promises of the past. At the midpoint between the inauguration of the MDGs in 2000 and their target date for fulfilment in 2015, much has already been achieved. The basis for action – data, research, evaluation – is already well established. It is time to rally behind the goals of maternal, newborn and child survival and health with renewed energy and sharper vision, and to position these goals at the heart of the international agenda to fulfill the tenets of social justice and honour the sanctity of life.

The means are at hand. It is now a question of will and of action – for there is no enterprise more noble, or reward more precious than saving the life of a child.