

THE STATE OF AFRICA'S CHILDREN 2008



Child Survival

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United Republic of Tanzania: A village 'health day'.

Introduction

Child survival in Africa: Communities unite to find solutions

Every year, the United Nations Children's Fund (UNICEF) publishes *The State of the World's Children*, the most comprehensive and authoritative report on the world's youngest citizens. *The State of the World's Children 2008*, published in January 2008, examines the global realities of maternal and child survival and the prospects for meeting the health-related Millennium Development Goals (MDGs) – the targets set by the world community in 2000 for eradicating poverty, reducing child and maternal mortality, combating disease, ensuring environmental sustainability and providing access to affordable medicines in developing countries.

This year, UNICEF is also publishing the inaugural edition of *The State of Africa's Children*. This volume and other forthcoming regional editions complement *The State of the World's Children 2008*, sharpening from a worldwide to a regional perspective the global report's focus on trends in child survival and health, and outlining possible solutions – by means of programmes, policies and partnerships – to accelerate progress in meeting the Millennium Development Goals.

The State of Africa's Children 2008 highlights the need to position child survival at the heart of Africa's development and human rights agenda. It begins by examining the state of child survival and progress

Editor's Note: Much of the discussion in *The State of Africa's Children 2008* concentrates on sub-Saharan Africa, composed of the 46 countries in the UNICEF subregions of Eastern, Southern, West and Central Africa. Except where indicated, the trend analyses and data for sub-Saharan Africa do not cover two countries, Djibouti and Sudan, which, while lying mostly south of the Sahara in continental Africa, are nominally part of UNICEF's Middle East and North Africa region. For the purposes of statistical analysis, as in Figures 1.2, 1.6 and 1.9, Djibouti and Sudan are included only in the data for Eastern Africa. See Figure 1.1 on page 2 for a breakdown of subregions and country classifications. Some countries are included in more than one subregion. Solutions and recommendations referring to 'sub-Saharan Africa' will also be relevant to Djibouti and Sudan.

towards the health-related MDGs for children and mothers in each of the continent's five main subregions: Eastern, Central, North, Southern and West Africa. Although much of the report concentrates on Africa south of the Sahara, cases and analysis from North Africa are examined as well.

The report outlines five broad priorities that are required to accelerate progress and then seeks to examine each of these issues in depth, illustrating them with side panels that provide examples from the African experience. The priorities discussed chapter by chapter are:

- Focus on the countries and communities where the burden of child mortality is highest.
- Apply the lessons learned and evidence collated over the past century.

- Provide a continuum of care for mothers, newborns and children by packaging interventions for delivery at key points in the life cycle and according to their mode of delivery.
- Strengthen community partnerships and health systems, with a strong emphasis on results.
- Advance the joint international agency framework for child and maternal survival.

A call for unity permeates the report from beginning to end. The basis for action – data, research, evaluation, frameworks, programmes and partnerships – is already well established. The report concludes that it is time to rally behind the goals of maternal, newborn and child survival and health with renewed vigour and sharper vision, to fulfil the tenets of social justice and honour the sanctity of life – especially the life of the African child.

Figure 1.1
Subregions and regions of Africa*

North Africa

Algeria; Egypt; Libyan Arab
Jamahiriya; Morocco; Tunisia

Central Africa

Cameroon; Central African Republic;
Chad; Congo; Democratic Republic of
the Congo; Equatorial Guinea; Gabon;
Sao Tome and Principe

Eastern Africa†

Burundi; Comoros; Djibouti; Eritrea;
Ethiopia; Kenya; Madagascar; Malawi;
Mauritius; Mozambique; Rwanda;
Seychelles; Somalia; Sudan; Uganda;
United Republic of Tanzania

Southern Africa

Angola; Botswana; Lesotho; Namibia;
South Africa; Swaziland; Zambia;
Zimbabwe

West Africa

Benin; Burkina Faso; Cape Verde;
Côte d'Ivoire; Gambia; Ghana;
Guinea; Guinea-Bissau; Liberia; Mali;
Mauritania; Niger; Nigeria; Senegal;
Sierra Leone; Togo

Sub-Saharan Africa

Angola; Benin; Botswana; Burkina
Faso; Burundi; Cameroon; Cape
Verde; Central African Republic;
Chad; Comoros; Congo; Côte d'Ivoire;
Democratic Republic of the Congo;
Equatorial Guinea; Eritrea; Ethiopia;
Gabon; Gambia; Ghana; Guinea;
Guinea-Bissau; Kenya; Lesotho;
Liberia; Madagascar; Malawi; Mali;
Mauritania; Mauritius; Mozambique;
Namibia; Niger; Nigeria; Rwanda;
Sao Tome and Principe; Senegal;
Seychelles; Sierra Leone; Somalia;

South Africa; Swaziland; Togo;
Uganda; United Republic of Tanzania;
Zambia; Zimbabwe

Horn of Africa

Djibouti; Eritrea; Ethiopia; Somalia

Sahel

Burkina Faso; Cape Verde; Chad;
Gambia; Guinea-Bissau; Mali;
Mauritania; Niger; Senegal

* Subregional and regional classifications have been compiled for the purposes of this report and may not strictly conform to standard UNICEF regional groupings.

† UNICEF subregion plus Djibouti and Sudan.

Source: UNICEF classifications for *The State of Africa's Children 2008* based on United Nations regional groupings.



Uganda: A mother takes her son to a health outreach station.

1 Child survival – Where we stand

Child mortality above and below the Sahara

The African continent is divided by the Sahara, the world's largest desert, and this demarcation is more than geographical. In countries lying mostly north of the Sahara – Algeria, Egypt, the Libyan Arab Jamahiriya, Morocco and Tunisia – the average under-five, or child, mortality rate for 2006 was 35 per 1,000 live births, meaning that in that year, approximately 1 in every 29 children died before their fifth birthday. Since 1990, each of the five countries in North Africa has reduced its child mortality rate by at least 45 per cent, at a subregional average annual rate of 5.3 per cent – putting them well on track to meet Millennium Development Goal 4, which seeks to reduce the under-

five mortality rate by two thirds between 1990 and 2015.¹

The contrast with trends for child survival in sub-Saharan Africa (including Djibouti and Sudan) could not be more striking. In 1970, the average under-five mortality rate in North Africa was 215 deaths per 1,000 live births. This was not significantly different from the 1970 rates for Eastern Africa, at 216 per 1,000 live births, or Southern Africa, 208 per 1,000 live births. But between 1970 and 2006, North Africa reduced its under-five mortality by 84 per cent, while the corresponding reductions in Eastern and Southern Africa were just 43 per cent and 30 per cent, to 123 and 146 per 1,000 live births, respectively. With Central Africa and West Africa also failing to post strong reductions, sub-

Saharan Africa as a whole (including Djibouti and Sudan) lowered its under-five mortality rate by little more than one third during the same 36-year period.

Although this contrast provides a poignant example of the growing gap in child survival between sub-Saharan Africa and other parts of the world, it also encourages hope in the fact that some African countries have been able to sustain high annual rates of reduction in child mortality over the past four decades. The experience of North Africa shows it is possible to lower child mortality at a sharp pace, even from high rates, when concerted action, sound strategies, adequate resources and strong political will are consistently applied in support of child and maternal health.

Figure 1.2**Progress in reducing child mortality by region**

Average annual rate of reduction (AARR) in the under-five mortality rate (U5MR) observed for 1990–2006 and required during 2007–2015 to achieve MDG 4.

	U5MR		AARR (%)*		Progress towards the MDG target
	1990	2006	Observed 1990–2006	Required 2007–2015	
Sub-Saharan Africa	187	160	1.0	10.5	insufficient progress
Eastern and Southern Africa	165	131	1.4	9.6	insufficient progress
Eastern Africa†	171	123	2.1	8.5	insufficient progress
Southern Africa	125	146	-1.0	13.9	no progress
West and Central Africa	208	186	0.7	11.0	no progress
Central Africa	187	193	-0.2	12.6	no progress
West Africa	215	183	1.0	10.4	insufficient progress
North Africa	82	35	5.3	2.8	on track
South Asia	123	83	2.5	7.8	insufficient progress
East Asia/Pacific	55	29	4.0	5.1	on track
Latin America/Caribbean	55	27	4.4	4.3	on track
CEE/CIS**	53	27	4.2	4.7	on track
Industrialized countries	10	6	3.2	6.6	on track
Developing countries	103	79	1.7	9.3	insufficient progress
World	93	72	1.6	9.4	insufficient progress

* A negative AARR indicates an increase in the under-five mortality rate since 1990.

† Includes Djibouti and Sudan.

** Central and Eastern Europe/Commonwealth of Independent States.

On track: U5MR is less than 40, or U5MR is 40 or more and the AARR in the under-five mortality rate observed for 1990–2006 is 4.0 per cent or more.

Insufficient progress: U5MR is 40 or more, and AARR is between 1.0 per cent and 3.9 per cent.

No progress: U5MR is 40 or more, and AARR is less than 1.0 per cent.

Source: UNICEF estimates based on the work of the Inter-agency Group for Child Mortality Estimation.

Child survival in Africa south of the Sahara

Africa south of the Sahara remains the most difficult place in the world for a child to survive until age five. In 2006, the latest year for which firm estimates are available, the under-five mortality rate for sub-Saharan Africa was 160 per 1,000 live births, meaning that roughly 1 in every 6 children failed to reach their fifth birthday. Although this represents a 14 per cent reduction since 1990, it remains by far the highest rate of under-five mortality in the world (*Figure 1.2*).

In addition to having the highest regional rate of child mortality, sub-Saharan Africa is the furthest behind on most of the health-related Millennium Development Goals (*Figure 1.7*) – particularly MDG 4 and also MDG 5, which seeks to reduce maternal mortality by three quarters between 1990 and 2015. In a number

of countries, such major impediments as deeply entrenched and widespread poverty, the onslaught of AIDS and civil conflict, inadequate physical infrastructure and low health-system capacity have contributed to stagnation in recent decades – or even rising rates and numbers of child deaths.

Progress towards the health-related MDGs in Africa

Progress on all eight Millennium Development Goals is vital to the survival and well-being of children, and six of the goals have targets that relate directly to children's health (*Figure 1.3*). To reduce child mortality in sub-Saharan Africa, and to sustain the progress achieved in North Africa, greater effort is needed to meet the health-related MDGs. This section

examines progress in the five principal African subregions towards each of these goals, with particular attention given to MDG 4.

MDG 4: Reducing child mortality

North Africa is on track, but the four main subregions of Africa south of the Sahara lag behind

North Africa is on track to meet MDG 4, having reduced its under-five mortality rate by 57 per cent since 1990. All five countries in the subregion have under-five mortality rates below 40 per 1,000 live births. Egypt, in particular, has made striking progress towards MDG 4 during recent years, posting a 62 per cent reduction in its under-five mortality rate between 1990 and 2006. Nonetheless, in part due to its large population of children under five (8.6 million), Egypt has the highest number of under-five deaths in North Africa – 64,000 in 2006, greater than the combined total of 56,000 for the four other countries in the subregion.

Prospects for child survival in sub-Saharan Africa are immensely challenging. Although the aggregate under-five mortality rate for sub-Saharan Africa has fallen since 1990, the base year for many of the Millennium Development Goals, the average annual rate of reduction (AARR) of just 1 per cent between 1990 and 2006 was far below the 4-plus per cent annual rate required during that period to keep countries and regions on track for MDG 4 by 2015.

A further disturbing trend is the increase of sub-Saharan Africa's share of global under-five deaths during recent decades. This is due in part to a higher average fertility rate than is found in other regions of the world. Sub-Saharan Africa's 2006 fertility rate, for example, was 5.3* compared with 3.0 for South Asia, and 2.8 for developing countries as a whole. The region's rising share of global under-five deaths is also the product of slow advances in providing



Malawi: A community-based care centre for orphans and other vulnerable children.

Figure 1.3

Health and the Millennium Development Goals

GOAL	HEALTH TARGETS	HEALTH INDICATORS
Goal 1: Eradicate extreme poverty and hunger	Target 2 Halve, between 1990 and 2015, the proportion of people who suffer from hunger	Prevalence of underweight children under age five Proportion of population below minimum level of dietary energy consumption
Goal 4: Reduce child mortality	Target 5 Reduce by two thirds, between 1990 and 2015, the under-five mortality rate	Under-five mortality rate Infant mortality rate Proportion of one-year-old children immunized against measles
GOAL 5: Improve maternal health	Target 6 Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio	Maternal mortality ratio Proportion of births attended by skilled health personnel
GOAL 6: Combat HIV and AIDS, malaria and other diseases	Target 7 Have halted by 2015 and begun to reverse the spread of HIV	HIV prevalence among pregnant women aged 15–24 years Ratio of school attendance of orphans to school attendance of non-orphans aged 10–14 years
	Target 8 Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	Prevalence and death rates associated with malaria Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures Prevalence and death rates associated with tuberculosis Proportion of tuberculosis cases detected and cured under the Directly Observed Treatment, Short-course (DOTS) strategy
GOAL 7: Ensure environmental sustainability	Target 10 Halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation	Proportion of population with sustainable access to an improved water source, urban and rural Proportion of population with access to improved sanitation, urban and rural
GOAL 8: Develop a global partnership for development	Target 17 In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries	Proportion of population with access to affordable essential drugs on a sustainable basis

Source: Adapted from World Health Organization, *Health and the Millennium Development Goals*, 2005, p. 11.

quality primary health care, inadequate nutrition, and a lack of improved water sources and basic sanitation facilities, among other factors.

Comparing sub-Saharan Africa's share of under-five deaths over the past three and a half decades with that of the rest of the world puts its position into sharper relief (*Figure 1.4*). In 1970, sub-Saharan Africa accounted for 11 per cent of the world's births and 19 per cent of global under-five deaths. By 2006, while sub-Saharan Africa's share of global births doubled to 22 per cent, its share of global under-five deaths soared to almost 50 per cent. West and Central Africa's combined share of global under-five deaths has tripled since 1970, from 10 per cent to 30 per cent, while the share for Eastern and Central Africa combined has more than doubled. When child deaths for Djibouti and Sudan are combined with those for sub-Saharan Africa, the combined total accounted for 50 per cent of all global under five deaths in 2006. In contrast, the proportion for the rest of the world has fallen.

Differences in child mortality between Central, Eastern, Southern and West Africa

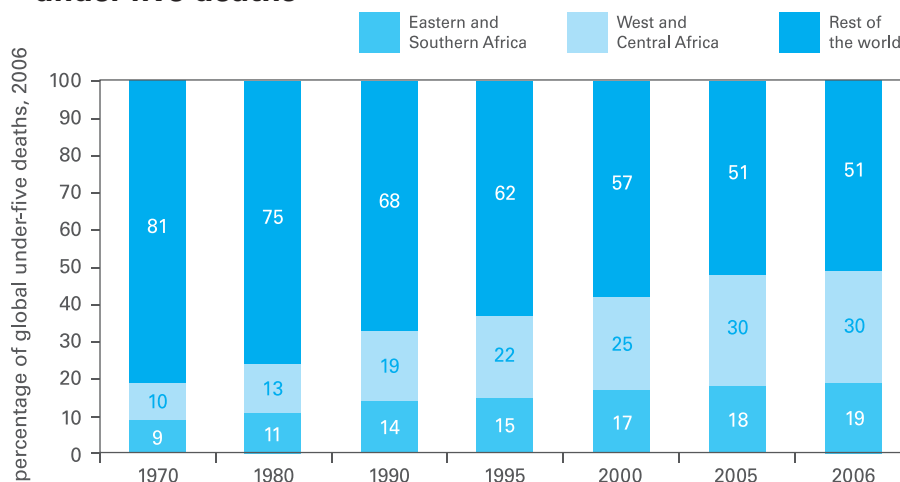
This section examines under-five mortality rates in four separate subregions of sub-Saharan Africa. The purpose is to assess disparities in trends, rates and levels between subregions, and to discuss the possible implications for programmes, policies and partnerships.

The findings are compelling. Of the four subregions, Central Africa has made the least progress in reducing its numbers of under-five child deaths since 1990. Indeed, its subregional aggregate has edged upward from 187 per 1,000 live births in 1990 to 193 per 1,000 live births in 2006. West Africa, starting from a higher base rate of 215 per 1,000 live births, managed to reduce its under-five mortality rate by 15 per cent to 183 per 1,000 live births by 2006.

Eastern Africa has seen steady progress, with a 28 per cent reduction in the

Figure 1.4

Sub-Saharan Africa bears an increasing burden of global under-five deaths



Source: UNICEF estimates based on the work of the Inter-agency Group for Child Mortality Estimation.

under-five mortality rate between 1990 and 2006. Southern Africa has posted a 17 per cent increase in the under-five mortality rate over the period, although its absolute numbers of child deaths are still far lower than those of the other subregions (*Figure 1.6*). In a number of countries in Southern Africa – Botswana, Lesotho, South

Africa, Swaziland, and Zimbabwe – the devastating impact of AIDS has caused under-five mortality to soar well beyond its 1990 rate, inflating the subregional average.

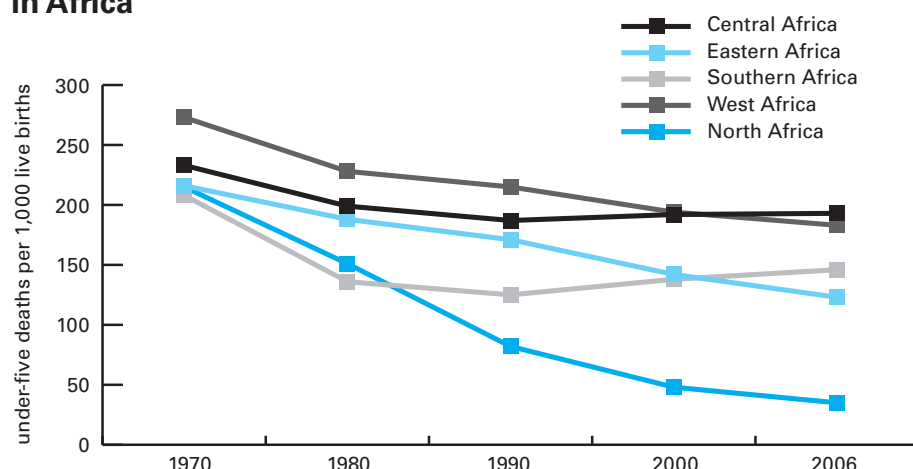
The countries of the Horn of Africa have made good progress, managing to reduce their under-five mortality

* The total fertility rate equals the number of children who would be born per woman if she lived to the end of her childbearing years and bore children at each age in accordance with prevailing age-specific fertility rates.



Somalia: A health worker measures a child's arm to determine her nutritional status.

Figure 1.5
Subregional comparisons of under-five mortality rates in Africa



Source: UNICEF estimates based on the work of the Inter-agency Group for Child Mortality Estimation.

rates by 39 per cent since 1990. More rapid advances are possible if key issues, particularly the poor nutritional status of children under age five – with nearly half moderately or severely stunted – are addressed. Any advances will also depend on an end to the conflict in Somalia, where women and children have borne the brunt of a debilitating combination of conflict, natural disaster and outbreaks of disease that have produced a growing humanitarian crisis. The countries of the Sahel have made less progress, with the under-five mortality rate declining by just 11 per cent since 1990. Heightening rates of exclusive breastfeeding – only 1 in every

6 infants is exclusively breastfed during the first six months of life – would contribute to improving children's nutritional status.

An examination of the distribution of child deaths among Africa's subregions, including Djibouti and Sudan, reveals that despite posting the sharpest increase in under-five mortality rates since 1990, Southern Africa accounts for only 8 per cent of child deaths in the region as whole. The bulk of child deaths is borne by West Africa (42 per cent), followed by Eastern Africa (30 per cent). Just less than 20 per cent of child deaths in sub-Saharan Africa

occur in Central Africa. The countries of the Sahel and the Horn of Africa account for 12 per cent and 10 per cent, respectively, of the entire continent's under-five deaths. Three countries – the Democratic Republic of the Congo, Ethiopia and Nigeria – account for more than 43 per cent of total under-five deaths in all of Africa.

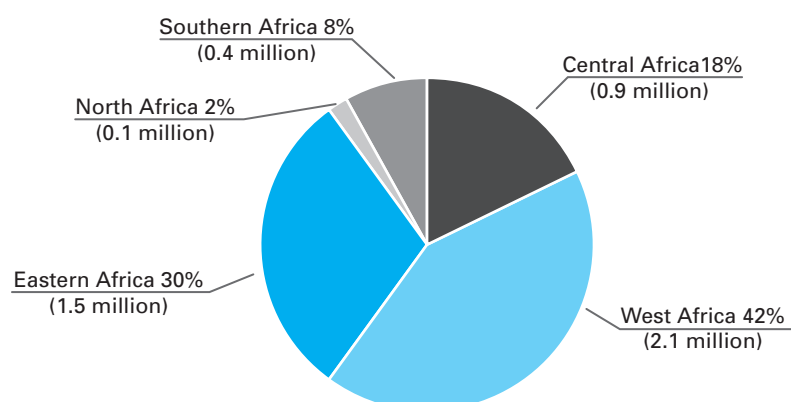
Of the 46 countries in sub-Saharan Africa, only Cape Verde, Eritrea, Mauritius and Seychelles are on track to attain MDG 4, according to the December 2007 special edition of *Progress for Children: A world fit for children statistical review*, UNICEF's flagship report card on progress towards internationally agreed targets for children. Of greatest concern are the 24 countries in the region registering no progress, or increases, in under-five mortality rates since 1990. Both Djibouti and Sudan are making insufficient progress towards MDG 4, and will need to increase their annual rate of reduction of under-five mortality from 1.9 per cent in 1990–2006 to 8.9 per cent in 2007–2015 to meet the goal.

Sub-Saharan Africa faces an immense and unprecedented challenge to meet Millennium Development Goal 4 on time. Achieving MDG 4 will require reducing the number of child deaths between 2007 and 2015 at more than 10 times the rate recorded between 1990 and 2006. If current trends persist, 2.8 million children under five in sub-Saharan Africa will die in the MDG target year of 2015 whose lives could have been saved in that year alone if MDG 4 had been met.

Sub-Saharan Africa also lags on the other health-related MDGs (Figure 1.7). According to *Progress for Children*, sub-Saharan Africa is:

- Making insufficient progress towards eradicating extreme poverty and hunger (MDG 1).
- Displaying rates of maternal mortality (MDG 5) classified as very high.
- Yet to halt and begin to reverse the spread of HIV (MDG 6).
- Making no progress towards ensuring environmental sustainability (MDG 7).

Figure 1.6
West Africa accounted for more than 40 per cent of Africa's child deaths in 2006



Source: UNICEF estimates based on the work of the Inter-agency Group for Child Mortality Estimation.

The main causes of child deaths in sub-Saharan Africa

The major causes of death among children under five in sub-Saharan Africa are well known (Figure 1.8). According to the latest figures published in the World Health Organization's *World Health Statistics 2007*, neonatal diseases account for more than one quarter of deaths in the WHO Africa region, which differs from UNICEF's

standard classification for sub-Saharan Africa only in that it includes Algeria and omits Somalia. The next major killer is pneumonia, which is responsible for more than one fifth of child deaths. Malaria and diarrhoeal diseases account for 18 per cent and 17 per cent, respectively, of child deaths. Other significant causes are AIDS, particularly in the countries of Southern Africa, and measles.

The essential interventions and practices required to avert most child deaths in Africa are also well known. Practices

and services that have been identified as the most basic, yet important, include:

- Skilled attendants at birth and follow-up care after delivery.
- Prevention of mother-to-child transmission of HIV and paediatric treatment of AIDS.
- Adequate nutrition, particularly in the form of early and exclusive breastfeeding during the first six months of life.
- Complementary feeding combined with continued breastfeeding for at least two more years.
- Micronutrient supplementation to boost immune systems.
- Immunization to protect children against the six major vaccine-preventable diseases.
- Oral rehydration therapy and zinc to combat diarrhoeal diseases.
- Antibiotics to fight pneumonia.
- Insecticide-treated mosquito nets and effective medicines to prevent and treat malaria.
- Hygiene promotion, including hand washing with soap, point-of-use water treatment and excreta disposal.²

Although coverage rates of many of these interventions remain low across much of the region, there have been significant advances in providing preventive measures against childhood illness, as outlined in the next section, *New hope for child survival*. There has been less progress, however, in increasing coverage rates for effective treatment of childhood illness – particularly of pneumonia and diarrhoeal diseases, which together account for 38 per cent of child deaths in the WHO Africa region. Of those children younger than five in sub-Saharan Africa with suspected pneumonia, only 40 per cent are taken to an appropriate health-care provider. Coverage of treatment for diarrhoeal diseases is even lower, with fewer than one third of under-fives with diarrhoea in sub-Saharan Africa receiving the recommended treatment: oral rehydration therapy or increased fluids with continued feeding.

Figure 1.7 Sub-Saharan Africa is making insufficient or no progress towards all of the health-related MDGs

INDICATORS OF PROGRESS IN MEETING MILLENNIUM DEVELOPMENT GOALS	LATEST FIRM ESTIMATE	AVERAGE ANNUAL RATE OF REDUCTION (1990–2006)	PROGRESS TOWARDS THE MDG TARGET
MDG 1			
Underweight prevalence in children under five	28% (2000–2006)	1.1	Insufficient progress
MDG 4			
Under-five mortality rate	187 per 1,000 live births (1990); 160 per 1,000 live births (2006)	1.0	Insufficient progress
MDG 5			
Maternal mortality ratio, adjusted	920 per 100,000 live births (2005)	n/a	'Very high'*
MDG 6			
Malaria, under-fives sleeping under an insecticide-treated net	8% (2003–2006)	n/a	Yet to halt and reverse the spread of malaria
Paediatric HIV infections (children aged 1–14)	2.0 million (2005)	n/a	Yet to halt and reverse the spread of HIV
HIV prevalence among young pregnant women (aged 15–24) in capital city	9.7% (2005)	n/a	Yet to halt and reverse the spread of HIV
MDG 7			
Use of improved sources of drinking water	48% (1990); 55% (2004)	n/a	No progress
Use of improved sanitation facilities	32% (1990); 37% (2004)	n/a	No progress

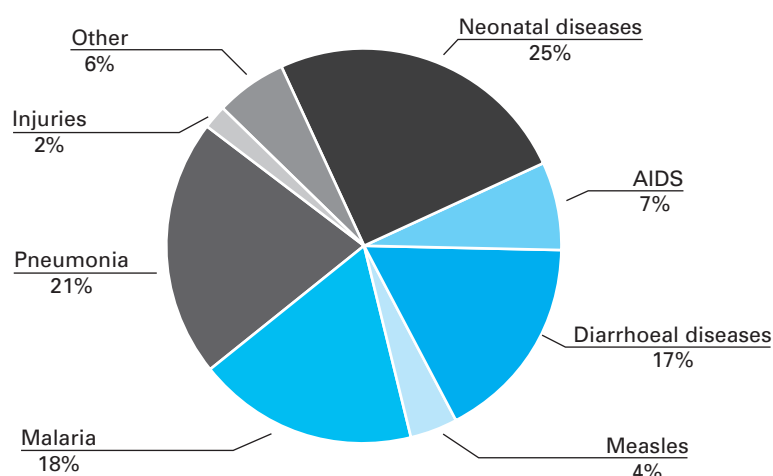
* 'Very high' indicates a maternal mortality ratio of 550 or more deaths of women from pregnancy-related causes per 100,000 live births.

Source: UNICEF, *Progress for Children: A World Fit for Children statistical review*, Number 6, December 2007; and *The State of the World's Children 2008*; Joint United Nations Programme on HIV/AIDS, *2006 Report on the Global AIDS Epidemic*, UNAIDS, Geneva, 2006.



Côte d'Ivoire: A mother breastfeeds her child as a community health worker looks on.

Figure 1.8
The main causes of child deaths in the World Health Organization's Africa region, 2000*



* WHO's Africa region differs from UNICEF's regional grouping for sub-Saharan Africa in that it includes Algeria and excludes Somalia. For a list of the countries in UNICEF's regional grouping for sub-Saharan Africa, see *Figure 1.1*, p. 2.

Source: World Health Organization, *World Health Statistics 2007*, p. 31.

Tackling undernutrition and improving environmental health are also urgent concerns in sub-Saharan Africa.

More than one third of child deaths are attributable to maternal and child undernutrition. Achieving MDG 1, which aims to reduce poverty and hunger, would help avert child deaths from diarrhoea, pneumonia, malaria, HIV and measles and reduce neonatal mortality. In other words, improving

child nutrition is a prerequisite to achieving MDG 4.

Adequate nutrition must begin during pregnancy. Maternal undernutrition can have lifelong consequences for children, including impaired prenatal growth, low birthweight birth and increased risk of developmental disabilities later in life. Indeed, the nutritional status of women is a telling indicator of the health and nutrition of children.³

The four subregions of sub-Saharan Africa, including Djibouti and Sudan within Eastern Africa, have high rates of undernutrition, as measured by rates of moderate or severe underweight, wasting and stunting (*Figure 1.9*). Undernutrition is most acute in the Sahel and in the Horn of Africa, owing in part to food insecurity. In addition, rates of exclusive breastfeeding up to six months remain low, particularly in Central, Southern and West Africa. Southern Africa has fallen behind on vitamin A supplementation, with only half of children aged 6–59 months receiving full coverage, or two doses, of this micronutrient, while less than half of households in Eastern Africa consume iodized salt.

Although North Africa has far lower rates of undernutrition as measured by underweight and wasting, challenges in child nutrition remain. Roughly 1 in every 6 children under five in North Africa is moderately or severely stunted, and more than 1 in every 4 households do not consume iodized salt. Contrastingly, among wealthier households, obesity and overnutrition are emerging as key health issues for young children and adolescents.

Enhancing environmental health remains particularly challenging for sub-Saharan Africa. Around 45 per cent of sub-Saharan Africa's population

Figure 1.9
Child nutrition in Africa's subregions

	% of infants with low birthweight	% of children (2000–2006*) who are:			% of under-fives (2000–2006*) suffering from:				Vitamin A supplementation coverage rate (6–59 months) 2005		% of households consuming iodized salt
					underweight		wasting	stunting			
	1999–2006*	exclusively breastfed	breastfed with complementary food	still breastfeeding	moderate and severe	severe	moderate and severe	moderate and severe	at least one dose (%)	full coverage** (%)	2000–2006*
		(<6 months)	(6–9 months)	(20–23 months)							
Central Africa	13	21	75	47	29	9	12	37	93	86	65
Eastern Africa	16	42	69	56	30	8	8	41	79	71	47
North Africa	12	31	61	29	6	1	5	16	-	-	71
Southern Africa	12	17	66	41	23	-	6	41	56	50	-
West Africa	15	21	58	46	28	8	10	36	82	80	74
The Sahel	18	16	55	66	34	11	13	37	89	85	45
Horn of Africa	19	45	50	-	38	11	11	45	59	58	20

* Data refer to the most recent year available doing the period specified.

** Refers to the percentage of children reached with two doses.

Source: UNICEF estimates based on data from Demographic and Health Surveys, Multiple Indicator Cluster Surveys, World Health Organization, UNICEF, other national household surveys and data from routine reporting systems.

does not use improved drinking-water sources, and more than 60 per cent remain without access to improved sanitation facilities as of 2004, the most recent year for which firm estimates are available (*Figure 1.7*).

Some progress has been achieved since 1990 in increasing access to improved drinking-water sources throughout Africa. Progress towards improved sanitation, however, has been grossly insufficient, with only eight countries – the five North African nations plus Djibouti, Malawi and Senegal – on track to meet the MDG7 target of halving the proportion of people without access to basic sanitation by 2015.⁴

In West and Central Africa combined, the number of people without access to improved water sources and basic sanitation facilities was higher in 2004 than in 1990. In Eastern and Southern Africa combined, the proportions were 56 per cent with access to improved water sources (up from 48 per cent in 1990) and 38 per cent with access to basic sanitation (a slight improvement from 35 per cent in 1990), but the increase in coverage has not kept pace with

population growth. Rapid population expansion in sub-Saharan Africa translates to 54 million children under five without access to an improved drinking-water source; in Eastern and Southern Africa, the number of people without basic sanitation increased by one third between 1990 and 2004.⁵

The repercussions of inadequate environmental health facilities are often deadly. Recent estimates of the number of children under five dying from diarrhoea stand at nearly 2 million a year worldwide, and in some countries the proportion of child deaths due primarily to diarrhoea is as high as 20 per cent. An estimated 88 per cent of global diarrhoeal deaths are attributed to lack of water for hygiene, unsafe drinking-water supplies and poor access to sanitation.

Equally unacceptable is the fact that 70 per cent of children with diarrhoea in sub-Saharan Africa do not receive oral rehydration therapy, a simple salt and sugar solution that treats dehydration from diarrhoea and prevents possible death – and costs less than five U.S. cents per dose.

Running taps and decent toilets have the potential to transform children's lives. Better sanitation alone could reduce worldwide diarrhoea-related morbidity by more than a third; improved sanitation combined with hygiene awareness and behaviour change could reduce it by two thirds.

While several African countries have made substantial progress in improving water and sanitation, none can afford to rest on its achievements. Among the largest disparities in safe water and basic sanitation are those between urban and rural populations. The urban-rural divide in drinking water is at its widest among the world's regions in sub-Saharan Africa, where 81 per cent of people in urban areas are served, compared with 41 per cent in rural areas.⁶

New hope for child survival: Seven key gains of recent years

Sub-Saharan Africa's lack of progress towards many of the health-related MDGs is a cause for concern at

the midway point between the establishment of the goals in 2000 at the Millennium Summit and the 2015 deadline for their completion. However, faster progress may ensue during the coming years as a result of recent reductions in children's deaths from measles – by a remarkable 91 per cent between 2000 and 2006 – and notable increases in rates of exclusive breastfeeding, vitamin A supplementation, the use of insecticide-treated mosquito nets, and improvements in identifying HIV-positive pregnant women and interventions to prevent mother-to-child transmission of HIV, among other interventions. There is also cause for optimism in the fact that national governments, international agencies, donors, non-governmental organizations, national administrations and communities are increasingly

uniting around frameworks, programmes and policies to expand quality health care rapidly to mothers and children through a continuum of care across time and location.

Seven key gains in child survival within sub-Saharan Africa during recent years indicate that faster advances are possible. These include:

- Rapid progress in child survival in several sub-Saharan African countries since 1990.
- A remarkable reduction in measles deaths among children between 2000 and 2006.
- Advances in malaria prevention and treatment.
- Increased access to antiretroviral treatment for HIV-positive mothers and children.

- Rising rates of exclusive breastfeeding up to six months.
- Expanded distribution and use of micronutrient supplementation.
- A growing consensus on the framework and strategies required to accelerate progress.

1. Rapid progress in child survival in several countries

Gains in child survival are evident even in some of Africa's poorest countries. Furthermore, the examples of several countries in the region that have made significant advances in reducing child mortality rates since 1990 inspire hope. Statistics show that dramatic improvements in child mortality and health can be attained rapidly. According to data from *The State of the World's Children 2008*, the under-five

Malawi: One country and its progress in child survival

ALTHOUGH child mortality in Malawi remains high by global standards, the country has achieved significant progress in reducing child deaths. From 1990 to 2005, the under-five mortality rate fell from 221 to 125 per 1,000 live births. Its 2006 under-five mortality rate of 120 per 1,000 live births is the same as or lower than that of 30 other countries in Africa south of the Sahara.

Factors contributing to this rapid reduction in child mortality include very high immunization coverage and vitamin A supplementation. Among Malawian children aged one year or younger, 99 per cent receive tuberculosis, polio and hepatitis B vaccines, as well as three doses of diphtheria/pertussis/tetanus and three doses of *Haemophilus influenzae* type b vaccines, and 85 per cent are immunized against measles. In 2006, 94 per cent of Malawian children aged 6–59 months received at least one dose of vitamin A,

and 86 per cent received the full two-dose coverage.

At 56 per cent, exclusive breastfeeding for children up to six months is also relatively high by regional standards. About 73 per cent of households use an improved water source. The Government of Malawi reported that more than 1 million insecticide-treated mosquito nets had been distributed by December 2006 – exceeding the Abuja target of 60 per cent by reaching 65 per cent of pregnant women and children under age five. The government also claimed that polio had been eliminated in Malawi in 2002, with no new cases reported since then.

According to the Government's 2006 'A World Fit for Children' report, the reduction in under-five mortality can also be attributed to the expansion of high-impact health interventions under the Integrated Management of Childhood Illness (IMCI) approach, which focuses on parental care and targets malaria, undernutrition, anaemia, pneumonia, measles and diarrhoea. If this reduction rate continues, the report states, the Millennium Development

Goal 4 target for reducing child mortality will be reached.

A 2005 UNICEF report reaffirms the success of the IMCI strategy: "In 2000, following an initial pilot phase, Malawi started scaling up the implementation of intermittent preventive treatment (IPT) for pregnant women, and distribution of subsidized insecticide-treated mosquito nets to mothers during visits to antenatal care and child-welfare clinics. The high antenatal coverage, development of a clear policy on IPT in pregnancy, and the active and positive support from partners (particularly UNICEF, WHO, USAID, Population Services International and Roll Back Malaria) have all contributed significantly to the positive results attained by this strategy."

One factor that has not changed since the 1990s is the prevalence of undernutrition, which remains the underlying cause of almost half of child deaths in Malawi. Nineteen per cent of children under five are moderately or severely underweight, and 46 per cent are moderately or severely stunted.

See References, page 50.

mortality rate has fallen by 40 percent or more since 1990 in Eritrea, Ethiopia, Malawi and Mozambique – countries whose per capita gross national income is below US\$350 a year.

2. Remarkable reduction in measles deaths

After slipping back during the 1990s, particularly in Central and West Africa, immunization rates in the region have edged steadily upward for all major vaccines, including the third dose of diphtheria, pertussis and tetanus (DPT3) and the measles vaccine – the latter is one of the three indicators used to measure progress towards MDG 4.

Increased coverage of routine measles immunization and follow-up campaigns giving a second opportunity for children to be vaccinated have contributed to a 91 per cent decrease in measles deaths in Africa between 2000 and 2006. This represents a major breakthrough because it implies that the challenge of reducing global measles mortality by 90 per cent by 2010 compared with 2000 rates, a goal established at the 2005 World Health Assembly, has been met ahead of schedule in the African region.⁷

Measles control activities are contributing to health-system development in Africa

in several ways – for example, through the promotion of safe injection practices, enhanced cold chain capacity for vaccination storage and the development of a global public health laboratory network. In addition, vaccination campaigns are being combined with such other essential interventions as vitamin A supplementation, deworming medicines and insecticide-treated mosquito nets.

3. Advances in malaria prevention and treatment

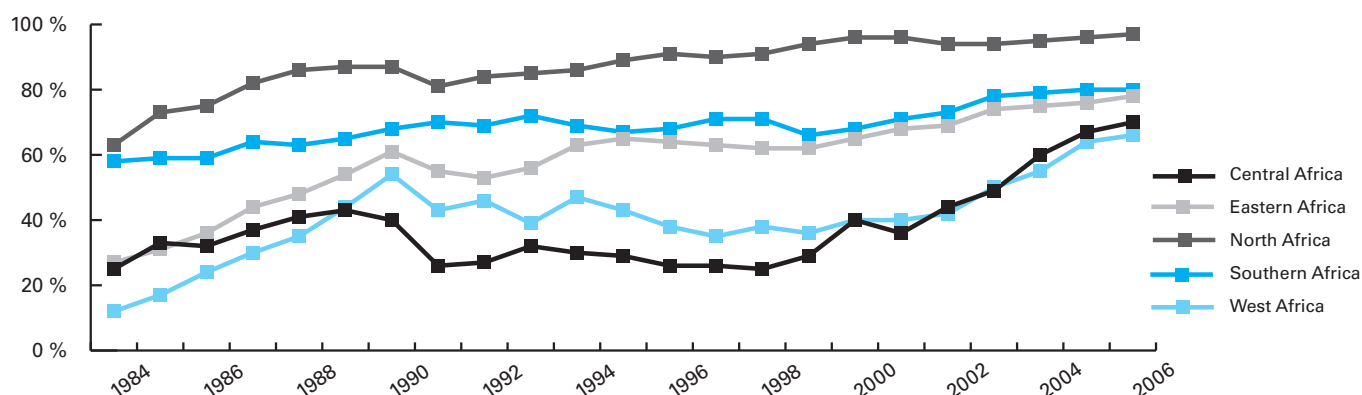
In much of sub-Saharan Africa, the region hardest hit by malaria-related disease and death, notable progress has been made in the distribution of insecticide-treated mosquito nets. Recent evidence from the region shows that all countries with trend data available have expanded their use among children under five, with 16 of 20 countries at least tripling coverage since 2000. The latest comprehensive regional figures, however, indicate that only 15 per cent of children in sub-Saharan Africa sleep under any type of mosquito net, while only 8 per cent sleep under an insecticide-treated net. Several countries have surpassed the regional average usage rate: Gambia (49 per cent around 2005), Sao Tome and Principe (42 per

cent), Guinea-Bissau (39 per cent) and Togo (38 per cent). Other countries are on the brink of registering much higher figures for distribution and usage of insecticide-treated mosquito nets. For instance, since its last household survey in 2005, Ethiopia has distributed more than 18 million nets, and Kenya has distributed more than 10 million since its last survey in 2003.⁸ Across sub-Saharan Africa, local production of insecticide-treated mosquito nets more than doubled, from 30 million to 63 million a year, between 2004 and 2006.

Recent data from Kenya indicate that coverage and socio-economic equity are both enhanced when insecticide-treated mosquito nets are delivered at highly subsidized prices through routine health services or free through mass campaigns. More than 10 million nets have been distributed in Kenya since 2003 through integrated child and maternal health services that include immunization and antenatal care. A recent survey in four Kenyan districts shows this increased distribution resulted in 67 per cent of children younger than five sleeping under an insecticide-treated net.

Treatment for malaria has also increased in sub-Saharan Africa, and around one third of children with fever are treated with antimalarial drugs. Despite recent

Figure 1.10 Immunization rates* have risen across all of Africa in recent decades



* Percentage of infants receiving three doses of diphtheria, pertussis and tetanus vaccine (DPT3). DPT3 is used as the benchmark indicator of annual routine immunization coverage by UNICEF and the World Health Organization.

Source: UNICEF estimates based on data from UNICEF and World Health Organization.



Senegal: Schoolgirls bring their mosquito nets in for insecticide treatment.

gains in prevention and treatment, however, overall levels of coverage remain low, particularly considering that the region accounts for 80 per cent of worldwide deaths from malaria among children under five. One potential breakthrough is artemisinin-based combination therapy, which is safe, effective and fast-acting against strains of malaria that are multi-drug resistant. It also has the advantage of preventing recurrence of the disease. Nearly all sub-Saharan African

countries have adopted artemisinin-based combination therapy as their first treatment against malaria.

In childhood, malaria and another major child-killing disease, pneumonia, have major overlaps in terms of symptoms. Once a child develops pneumonia, a caregiver must recognize the symptoms and seek appropriate care immediately. In Senegal, for example, a programme to teach health workers and parents to identify these early signs and,

if positive, to put free antibiotics into the parents' hands, has had a marked effect in treating affected children promptly.

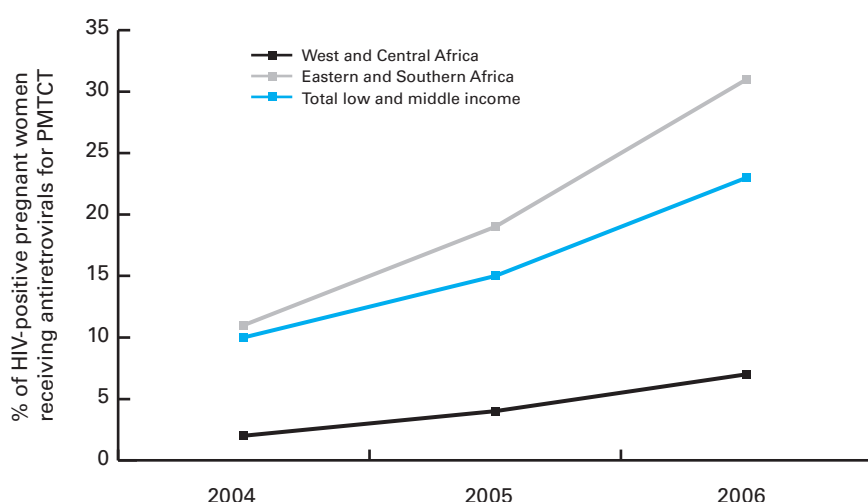
4. Increased access to antiretroviral treatment for HIV-positive mothers and children

The AIDS epidemic is a major threat to child survival in sub-Saharan Africa: Nearly 90 per cent of global paediatric cases of HIV-infection and most deaths from AIDS occur in this region. Southern Africa has been particularly affected, seeing its under-five mortality rate rise from 125 per 1,000 live births in 1990 to 146 per 1,000 live births in 2006. Although the burden of death has been highest in Southern Africa, the other subregions have also been affected.

More than 400,000 children under 15 were newly infected with the virus in 2007, mostly through mother-to-child transmission.⁹ Once a pregnant woman is infected, there is a 35 per cent chance that, without intervention, she will pass the virus on to her newborn during pregnancy, birth or breastfeeding.¹⁰

Preventing mother-to-child transmission of HIV, and identifying and providing treatment for infected mothers and children are among the

Figure 1.11
Rising rates of antiretroviral coverage for HIV-positive pregnant women to prevent mother-to-child transmission



Source: UNICEF estimates based on preliminary data from Joint United Nations Programme on HIV and AIDS.

South Africa: Saving children's lives by scaling up early infant diagnosis

SOUTH Africa has the highest AIDS burden in the world, with an estimated 5.5 million people living with HIV, around a quarter of a million children younger than 15 are HIV-positive (as of 2005). As many as 64,000 newborns contract HIV each year through mother-to-child transmission. About half of HIV-positive infants who do not receive treatment die before their second birthday, making AIDS the biggest killer of children – accounting for half of under-five deaths in South African hospitals.

The high mortality rate stems partly from the fact that access has been limited for pregnant women seeking services for prevention of mother-to-child transmission (PMTCT), and for children who need paediatric AIDS care and treatment.

In 2005, only 30 per cent of pregnant women who were infected with HIV received single-dose nevirapine, 26 per cent of HIV-exposed infants received cotrimoxazole prophylaxis, and 18 per cent of eligible children received antiretroviral therapy. One of the major challenges has been that children's HIV status was rarely diagnosed at the ideal age, four to six weeks after birth. Subsequently, most infected babies were not given antiretroviral therapy, despite the increasing availability of life-

prolonging medicines through the Operational Plan for Comprehensive HIV and AIDS Care, Management and Treatment for South Africa.

The Government of South Africa identified children's access to care and treatment for AIDS as a priority in its national response. As early as April 2004, it recommended early diagnosis of infection in infants born to women who were infected with HIV, using the preferred virological method for diagnosing HIV in infants at six weeks of age called 'DNA PCR'. Prior to this, the test was not widely available in the public sector and National Health Laboratory Services capacity was limited to fewer than 60,000 tests per year – despite the estimated annual required capacity of at least 400,000 DNA PCR tests.

Action: In 2004, the National Department of Health initiated a programme to expand DNA PCR testing capacity in three laboratories in three provinces: Gauteng, KwaZulu-Natal and Western Cape. As one of the most rural provinces challenged by long distances between health facilities, KwaZulu-Natal introduced dried blood spot technology, with support from UNICEF, to facilitate specimen transportation between health facilities and the laboratory.

By 2005, the three laboratories were able to perform more than 5,000 tests per month. In 2005, National Health Laboratory Services began to expand testing capacity.

By the end of 2006, the national services had established eight DNA PCR laboratories with capacity to perform more than 300,000 tests per year.

Impact: From 2004 to 2006, the number of DNA PCR tests performed increased from less than 20,000 to more than 140,000 per year – contributing to a remarkable boost in access to paediatric antiretroviral therapy. The number of eligible children receiving treatment increased from fewer than 3,000 in 2004 to 25,000 by September 2006 and 32,000 by December 2007. This has contributed to saving the lives of hundreds of young children who would have died without these medicines.

AIDS remains the primary challenge to child survival in South Africa. To achieve MDG 4 will first require accelerated scaling up of PMTCT services to prevent as many new infections as possible and reduce the demand for care and treatment. In addition, it will require scaling up access to early infant diagnosis, care and treatment for those who are infected despite PMTCT. Through the 'HIV and AIDS and STI National Strategic Plan 2007–2011', the Government and people of South Africa have committed to achieving universal access to PMTCT, care and treatment services for children by 2011.

See References, page 50.

most pressing health-care needs in Africa. Antiretroviral drug therapy can greatly reduce the chances that transmission will occur and is essential to stemming the rise in child mortality in countries where AIDS has reached epidemic levels. There are signs that coverage levels are improving, albeit from a low base. Preliminary estimates for 2006 indicate a marked rise in the coverage of antiretroviral therapy in sub-Saharan Africa (*Figure 1.11*). In Eastern and Southern Africa combined, access to antiretroviral treatment for children under 15 increased to 17 per cent in 2006 from 12 per cent in 2005.

Nonetheless, given the scale of the problem, these levels are still strikingly low, and much more needs to be done to expand access rapidly.

5. Rising rates of exclusive breastfeeding

Immediate and exclusive breastfeeding is the best source of nutrition for newborns, providing physical warmth and strengthening immune systems. While still low, rates of exclusive breastfeeding in sub-Saharan Africa have seen significant improvement in recent years, with the percentage of

infants exclusively breastfed for the first six months of life rising from 22 per cent in 1996 to around 30 per cent in 2006. Several countries, including Benin, Ghana, Madagascar and Malawi, managed to raise their rates of exclusive breastfeeding above 50 per cent over the 10-year period.

The potential of exclusive breastfeeding as a child survival strategy should not be underestimated: It has the potential to avert around 13 per cent of all under-five deaths in developing countries. Countries in sub-Saharan Africa have already shown it is possible to elevate

rates, and the challenge is to ensure that others make rapid progress in this area.

6. Expanded distribution and use of micronutrient supplementation

Micronutrients such as iodine, iron and vitamin A can have a profound impact on a child's development and a mother's health. Despite their proven benefits and cost-effectiveness, many infants and mothers in sub-Saharan Africa are still missing out on micronutrient supplementation. A telling statistic is that 10 million newborns in sub-Saharan Africa remain without protection from iodine deficiency, which is the principal cause of preventable mental retardation.

Rising coverage of vitamin A supplementation in recent years provides a source of hope for scaling up other micronutrient supplementation. Sub-Saharan Africa, along with other developing areas, has seen a marked rise in coverage of children aged 6–59 months with at least one dose of vitamin A per year. Of the regions assessed by UNICEF in *The State of the World's Children 2008* for which there were sufficient data to form a regional aggregate, West and Central Africa has the highest combined rate of vitamin A coverage, along with East Asia and the Pacific.

The expansion of vitamin A supplementation has been achieved through a combination of strategies, encompassing advocacy and the packaging of vitamin A with other high-impact health and nutrition interventions, such as immunization. National health days and child health days have often been the instruments used to deliver the supplementation.

7. Growing consensus on the framework required to accelerate progress

The seventh source of hope for accelerating progress on child survival in sub-Saharan Africa is the

growing consensus on the framework required to deliver essential services and commodities. In recent years, partnerships and programmes addressing maternal, newborn and child health have increasingly integrated their efforts around the 'continuum of care' framework, which has emerged in recognition of the

fact that maternal, newborn and child deaths share a number of similar and interrelated structural causes along with undernutrition. Delivering interventions across the life cycle, in packages and in dynamic health-care systems that integrate home-, community-, outreach- and facility-based care, can increase their efficiency and cost-effectiveness.

Sierra Leone: A unified plan gives hope of reducing maternal and child deaths from the world's highest rates

The devastating impact of conflict on maternal and child survival is perhaps most evident in Sierra Leone, a war-ravaged country with the world's highest rates of under-five and maternal mortality. Of every 1,000 live births in 2006, 270 children will die before the age of five – around 1 in every 4 children. Maternal mortality is the highest in the world, with the maternal mortality ratio at 2,100 per 100,000 live births in 2005, and the lifetime risk of maternal death at 1 in 8, compared to the sub-Saharan Africa average of 1 in 22 and an average of 1 in 8000 in industrialized countries.

The latest estimates for 1999–2006 show that almost one quarter of infants have low birthweight and only 8 per cent are exclusively breastfeeding during the first six months of life, 30 per cent of children under five are moderately or severely underweight, and 40 per cent are moderately or severely stunted. Over one third of infants are missing out on essential vaccines, such as three doses of diphtheria, pertussis and tetanus (DPT3) and polio. Access to improved drinking water sources in 2004 (the latest year for which firm estimates are available), at 57 per cent, and adequate sanitation, at 39 per cent, remain low.

In order to better address the devastatingly high rates of maternal and child death in Sierra Leone, a national Reproductive

and Child Health Strategic Plan 2008–2010 has been developed by the Ministry of Health and Sanitation in collaboration with key partners. Several key UN agencies – UNICEF, World Food Programme, World Health Organization and the United Nations Population Fund – have developed a joint programme in support of the Plan. The programme covers basic and comprehensive emergency obstetric care, immunization, and prevention and management of undernutrition. The venture is one of several collaborative initiatives related to the Reproductive and Child Strategic Health Plan that draw on the input of the government and a variety of international partners, including the World Bank and the United Kingdom's Department for International Development. The overarching aim of these initiatives is to reduce the 2005 rates of maternal, under-five and infant mortality by 30 per cent by 2010.

The Reproductive and Child Health Strategic Plan represents a significant shift in addressing maternal and child survival, because it prioritizes integration and the involvement of all key partners. It uses the continuum of care framework, delivering health services first to women before, during and after pregnancy and then to newborns and young children. To maximize aid effectiveness, the plan emphasizes ownership, alignment, managing for results, mutual accountability and harmonization among key stakeholders – with the aim of bringing a unified approach to support Sierra Leone's efforts to improve maternal and child survival and health.

See References, page 50.

Accelerating progress on the health-related MDGs

The challenges facing North Africa and sub-Saharan Africa related to achieving the MDGs are divergent. North Africa has a firm foundation on which to push ahead – not only to reach the MDG 4 target but to go beyond it, particularly through addressing socio-economic inequalities in health-care provision. Sub-Saharan Africa will need to undergo a radical transformation of its health systems in the coming years, with several key priorities forming the basis of change. These priorities include strengthening health systems through community partnerships, establishing continuums of care across time and location, and developing health systems for outcomes.

Strengthening health systems through community involvement

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 gain support through the community. As an integral part of the larger health system, community partnerships in support of maternal and child 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 can foster local ownership of child survival efforts and add vitality to a bureaucracy-

laden health system. And it is essential for reaching those who are the most isolated or excluded. As the following chapters in this report will show, many countries in Africa have implemented successful community-based programmes addressing health, nutrition, AIDS and environmental health. The challenge is to learn from these experiences, formulate strategies to take successful programmes to scale, and reach the millions of mothers and children whom the health system has passed by.

Establishing the continuum of care across time and location

An effective continuum of care connects essential maternal, newborn and child health services through pregnancy, childbirth, postnatal and



Democratic Republic of the Congo: A community religious leader administers a polio vaccination to a child.

newborn periods and into childhood and adolescence. Each stage builds on the success of the previous stage. Providing integrated services to adolescent girls, for example, results in 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 appropriate care during delivery. 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.

A continuum of care also addresses the gaps in care, whether in the home, community, health centre or hospital. For instance, newborns with birth asphyxia, sepsis or complications from a preterm birth can die within hours or even minutes if appropriate care is not provided. Because the majority of African mothers 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.¹¹ Quality of care at all points in the continuum is crucial.

Strengthening health systems with results-based strategies, and unified programmes and partnerships

Accelerating progress on child survival will require applying the lessons learned from a century of health-sector development and taking effective approaches to strengthen community partnerships, the continuum of care and health systems. Based on the joint framework developed by leading international agencies, including the World Bank, WHO and UNICEF, and presented to the African Union, *The State of Africa's Children 2008* lays out a framework in Chapter 4 for building up health systems across Africa through programmes, policies and partnerships in the coming decade.

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, as well as by the provision of essential services and practices. Infant and child mortality rates in Africa, as elsewhere, are highest in the poorest countries, among the most impoverished, isolated, uneducated and marginalized districts and communities, and in countries ravaged by civil strife, AIDS, food insecurity, weak governance and chronic underinvestment in public health systems and physical infrastructure. 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 for their citizens.

Institutional and environmental factors can sometimes be the dominant factor in child survival. In those countries in Eastern and Southern Africa where AIDS reaches high levels, for example, combating the disease has presented 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 drought, such as those in the Horn of Africa, are also at risk of having weaker child survival outcomes. The inability to diversify diets can lead to chronic undernutrition for children, increasing their vulnerability to ill health and, ultimately, death.

The challenge of reaching children in countries with such intractable problems is substantial. Nevertheless, with committed, concerted and sustained actions, there are steps these countries can take to create a supportive environment for child survival and development.

The legacy of conflict and instability

Civil conflict poses one of the biggest obstacles to maternal and child survival in Africa. Of the 10 African countries where 20 per cent or more of children die before age five – Angola, Burkina Faso, Chad, the Democratic Republic of the Congo, Equatorial Guinea, Guinea-Bissau, Liberia, Mali, Niger and Sierra Leone – more than half have suffered a major armed conflict since 1989. In the Democratic Republic of the Congo, four years of conflict have driven more than 1 million people, mostly women and children, from their homes, forcing them into makeshift villages where child-killing diseases such as cholera and measles can spread like wildfire. The struggle to restore essential services continues long after conflicts end, particularly for children and families whose homes and communities were destroyed by war.

Despite their desperate circumstances, African countries in post-conflict situations are rising to the monumental challenge of rebuilding their war-torn societies. Stronger national leadership in support of maternal and child health, assisted by international partners, is resulting in Angola, Côte d'Ivoire, Ethiopia, Liberia, Rwanda, Sierra Leone and other countries taking courageous action to reverse war's toll on essential services.

At the same time, efforts must be taken to ensure that the children of war-torn societies have the opportunity to grow up in a safe and stable environment. Many states remain fragile long after the cessation of conflict. Durable peace requires social and political structures that address both the root causes and consequences of violent conflict. This is a long-term process that requires the full participation of all members of society and the sustained commitment of international partners.

Children of conflict: Helping them survive

ACROSS Africa, civilian populations are caught in the crossfire of conflict, and women and children are all too often among the casualties. Of the estimated 3.6 million people affected by the ongoing crisis in the western Sudan region of Darfur, for example, 1.8 million are children.

The conflict in Darfur continues to displace large segments of the indigenous population, and more than 240,000 Sudanese – 85 per cent of them women and children – have found refuge in neighbouring Chad.

What the world may not be hearing about are the 173,000 Chadians who have also been displaced as a result of internal conflict and violence in their country – 30,000 of them in the closing months of 2007. Funding to support the internally displaced and the communities that have borne the cost of hosting them has been much harder to come by than assistance for Darfuri refugees. At the beginning of 2008, more than 100 international non-governmental organizations and United Nations agencies were working on behalf of the Sudanese in and around Abéché, in eastern Chad. Much of their work focused on public health and other interventions that enhance the chances for child survival among the refugees and displaced.

At each of 12 refugee camps, 10 litres of water are provided per person per day and the same coverage is extended to communal latrines.

Teams of camp youth are assigned to clear out stagnant water that threatens to flow into a nearby feeding centre. The same group also cleans rubbish from the common areas of the camp.

Children attend temporary schools and prepare for exams. Given their number, two teaching sessions are held every day, in the morning and afternoon. Teachers are mainly volunteers who have completed one month of training. A parent-teacher association takes responsibility for working with the children to clean and maintain the schools.

In camp discussion groups, mothers talk about the importance of breastfeeding their newborns for the first six months, while health workers remind them of a forthcoming measles vaccination campaign for children six months to four years old. Children play in places set aside for them. Community-based networks have been set up to look after the welfare of Sudanese and Chadian children in both the camp and the community.

A high-protein, high-energy peanut paste is distributed to undernourished children under five, and mothers say it is easy to get their

children to eat it. Children showing signs of acute undernutrition are transferred to a therapeutic feeding centre.

Outside the refugee camp, native Chadians live a different kind of life. They are reluctant to work in this part of the country, where life is hard and unstable. Chadian teachers, already paid irregularly by the state, have left their posts to work in the refugee camps, where salaries are better. Meanwhile, five doctors and midwives staff the only hospital in Abéché town.

International and local support for both the internally displaced and the host communities has been growing. The population's essential survival needs – water, food, health care, protection, shelter and education – are being covered. Here, as elsewhere in Africa, there is a concerted effort by all humanitarian actors to recognize a critical link between these emergency interventions and development support for affected local communities. This, in turn, may allow the internally displaced to become self-sufficient and integrated into the host communities, as well as provide all those affected – displaced and host communities alike – better access to life-saving services and support.

See References, page 50.

The education factor

Low levels of education, particularly among women and girls, represent a major obstacle to child and maternal survival throughout much of sub-Saharan Africa. Several African countries are making tremendous strides in girls' education. Much of this progress is recent, however, and illiteracy remains relatively high among women.

The consequences of female illiteracy can be devastating. Compared to women with relatively high levels of education, uneducated women are less likely to have a skilled attendant present

during pregnancy and childbirth. Women who have acquired some formal education are more likely to delay marriage and childbirth, to ensure that their children are immunized, to be better informed about their own and their children's nutritional requirements, and to adopt improved birth-spacing practices. As a result, their children have higher survival rates and tend to be healthier and better nourished.

Birth registration: An important step towards accessing essential services

The right to a name and a nationality is 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 the births of around 51 million children worldwide went unregistered in 2006. The right to be registered is a fundamental human right and a prerequisite to fulfilling other rights and practical needs. These include access to health care and education, as well as protection from child labour, child marriage, underage military service or conscription, separation from family members after conflict or natural disaster, trafficking, and harassment by police or other law enforcement officers.

Figure 1.12
Educational differences by gender

	PRIMARY SCHOOL NET ENROLMENT/ ATTENDANCE RATIO* (%, 2000–2006†)			YOUTH (15–24 YEARS) LITERACY RATE** (2000–2006†)	
	Total	Male	Female	Male	Female
Central Africa	58	61	54	76	60
Eastern Africa	66	66	66	74	63
North Africa	93	95	91	90	78
Southern Africa	77	77	78	-	-
West Africa	64	67	59	76	65

* *Primary school net enrolment/attendance ratio*: Number of children enrolled in or attending primary school, expressed as a percentage of the total number of children of primary school age. This indicator is either the primary school net enrolment ratio or the primary school net attendance ratio. In general, if both indicators are available, the primary school net enrolment ratio is preferred unless the data for primary school attendance is considered to be of superior quality.

** *Youth (15–24 years) literacy rate*: Number of literate persons aged 15–24, expressed as a percentage of the total population in the age group.

† Data refer to the most recent year available during the period specified.

Sources: UNICEF estimates based on UNESCO Institute of Statistics, Demographic and Health Surveys and Multiple Indicator Cluster Surveys.

In 2006, 19.7 million children in sub-Saharan Africa were not registered at birth. Indeed, sub-Saharan Africa has the highest proportion, 66 per cent, or more than 33.6 million children not registered at birth. The challenges are particularly felt in some countries, such as the United Republic of Tanzania and Zambia, where birth registration rates are very low due to the absence of effective and functioning registration systems. UNICEF estimates that in the 1999–2006 period, only 10 per cent of births were registered in Zambia, while in the United Republic of Tanzania the registration rate was just 8 per cent.

Birth registration and access to health care are closely linked, especially for children under five. For example, data from several African countries suggest a close correlation between the presence of a skilled birth attendant during delivery and birth registration. In Benin, for example, 74 per cent of children who were delivered by a skilled attendant were registered at birth; among children who were not delivered

by a skilled attendant, only 28 per cent were registered. Furthermore, the data also suggest that birth registration levels tend to increase with the number of vaccinations received and with the provision of vitamin A supplements, as well as with the level of medical care available. In Chad, for example, 38 per cent of children receiving vitamin A supplements have been registered, compared to 15 per cent of those not receiving supplements.

In the absence of birth registration, children in many countries may be denied access to vital interventions or programmes. The challenges encountered by parents in registering the birth of their children often signal an overlap with broader patterns of social exclusion and lack of access to social services. 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 as many as 20 developing countries across the world, 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 wide 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 in Africa will require governments, parents and communities to work together to make it a priority. An integrated approach, such as combining national immunization campaigns with birth registration campaigns, often provides the best strategy. Fulfilling a child's right to acquire a name and a nationality is a tangible goal, as well as an essential step towards ensuring that all children have access to the care and protection they deserve.

Empowering women

Empowering women socially and economically is central to improving child survival. It is well known that when women have influence in household decision-making, including over household finances, they tend to direct a large portion of household resources towards food and other necessities for children. For the same reasons, giving women the means to become more economically self-reliant will likely have positive spin-offs for children.

Analysis of the data from recent Demographic and Health Surveys in 30 countries suggests that in many households, especially in South Asia and sub-Saharan Africa, women have little influence in health-related decisions, whether about their own health or that of their children. In

Burkina Faso, Mali and Nigeria, for example, almost 75 per cent of women respondents reported that husbands alone make decisions about their partners' health care.¹²

Initiatives that enhance women's empowerment and leadership at the community level have been important in improving the health status of women and children. In Ghana, Guinea worm disease – a painful disease that is spread by water and can incapacitate an infected person for months – was sufficiently prevalent to require a comprehensive eradication campaign. Women volunteers, who were more familiar with the improved water sources than their male counterparts, conducted door-to-door surveillance, distributing filters, identifying potentially contaminated water sources and educating the community. As a result, incidence of the disease fell by 36 per cent between 2002 and 2003.

Promoting social equity

Millions of women and children have been excluded from social and economic progress in recent decades because they are poor and disenfranchised. The

disparities in child survival prospects between poor and better-off children is stark, not only among countries but within them. In every country with available data, children living in the poorest 20 per cent of households are far less likely to reach the age of five than children from the richest quintile of the population. Poor children, compared to those born to better-off families, are more exposed to the risk of disease through inadequate water and sanitation, indoor air pollution, crowding, poor housing conditions and high exposure to disease vectors.

Policy interventions to eliminate socio-economic inequalities – that is, bringing child mortality rates in the poorest 80 per cent of the population on par with those of the richest 20 per cent – would have a dramatic effect on the under-five mortality rate for a country as a whole. In sub-Saharan Africa, about 35 per cent of under-five deaths could be prevented in this way.¹³

African countries are particularly vulnerable to macro-level factors, ranging from armed conflict to natural disaster to weak governance and economic shock. Many countries in sub-Saharan Africa have suffered

during recent years from emergencies ranging from drought and floods to outbreaks of disease, such as Ebola haemorrhagic fever. Sub-Saharan Africa has also been at the epicentre of the AIDS epidemic, and its toll on families and children has been enormous. A five-year retrospective study in Zambia from 2001, of 232 urban and 101 rural families affected by AIDS, reported that the monthly disposable income of more than two thirds of the families had fallen by more than 80 per cent.¹⁴

In the absence of risk prevention and mitigation strategies, households must often cope by decreasing investment in child nutrition, especially for boys, and in education, particularly for girls. There is considerable evidence that AIDS has worsened already weak coping mechanisms, with affected households resorting to unsustainable selling of vital assets such as livestock, resulting in lower income levels and increased poverty.

Successful approaches used to tackle social inequities can include removing user fees in health-care programmes that bring health interventions to those who are hardest to reach, and subsidizing health care for the poor and those who have been excluded.

Rising to the challenge

The main challenge for child survival is less about determining the proximate causes of, or solutions to, child mortality than it is about ensuring that the services and education required for these solutions reach the most marginalized countries and communities. 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. Effectively scaling up these services, 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.



Uganda: A day-old child being vaccinated outside a village clinic.



Mali: A traditional birth attendant explaining the dangers of tetanus.

2 Lessons learned from evolving health-care systems and practices

An examination of diverse approaches to the delivery of essential services from the beginning of the 20th century to the present demonstrates that a range of effective interventions and policies holds the most potential for accelerating progress in Africa – especially sub-Saharan Africa. These span from initiatives targeted towards a single disease or condition, such as malaria or undernutrition, to the ideal of providing a continuum of comprehensive primary-health-care services that integrates hospital and clinical facilities, outpatient and outreach services, and household- and community-based care.

A brief review of the accomplishments in child health in Africa during the past century and the remaining challenges

for health-care systems and public health-care practices on the continent can provide important perspectives on the current situation and help guide the way forward. This review focuses on five major stages in public health care: mass disease control; comprehensive primary health care; selective primary health care; integrated approaches; and the unified health-care framework that is emerging from the lessons learned.

Each of these stages is covered in detail in *The State of the World's Children 2008*, the international report on which this and other regional editions are based. The main points of that review are summarized here, together with specific examples of how they relate to Africa.

Disease control

Efforts to control specific diseases in Africa began early in the 20th century. In the first half of that century, mass disease control efforts centred on malaria programmes, linking research with control of the disease on the African continent. These preliminary, fragmented efforts were undertaken by colonial governments. Despite their narrow focus, some of the initiatives – for example, malaria control from 1930–1950 in and around copper mines in what is present-day Zambia – were quite successful. However, malaria control was never seriously attempted across Africa, which still accounts for the vast majority of global cases and deaths.

Mass disease control programmes were expanded markedly in the 1950s to 1970s with the advent of mass campaigns focusing on the reduction or eradication of a specific disease by using a particular technology. Such campaigns addressed diseases, including Guinea worm, smallpox, leprosy, trachoma, yaws, elephantiasis, and other conditions affecting the ability to work. Several of these campaigns were highly effective, most notably smallpox, which was eradicated from the continent and elsewhere in 1977. Onchocerciasis, or river blindness, was defeated in West Africa and significantly reduced in the rest of sub-Saharan Africa.¹ The success of several of these ‘vertical’ mass campaigns, particularly smallpox, paved the way for the most successful health programme in history: the Expanded Programme on Immunization, launched in 1974.

Efforts to control specific diseases and conditions such as measles are

continuing to advance. The remarkable 91 per cent reduction in measles deaths in Africa between 2000 and 2006, recently reported by the Measles Initiative, is testimony to the merits of vertical approaches – as are gains noted in the opening chapter of this report in such interventions as exclusive breastfeeding, micronutrient supplementation and insecticide-treated mosquito nets in sub-Saharan Africa.

Comprehensive primary health care

One of the key lessons learned from the malaria eradication of the 1950s and 1960s campaign is that without basic services to support and consolidate vertical approaches to disease eradication, it is difficult to promote improved health-care practices over the longer term. Accordingly, clean water, basic sanitation facilities and adequate nutrition are now viewed as critical to

child survival, health and well-being. Another key lesson drawn from these experiences is the need for disease-specific programmes to promote community involvement, whenever possible, while contributing to the ongoing development and strengthening of national health systems.²

Successful innovation in community health in Nigeria and such countries as China and Indonesia after World War II showed the potential for delivering a range of health-care services beyond those targeting specific diseases. The comprehensive primary-health-care approach, consolidated at a landmark international conference in Alma-Ata (now Almaty), Kazakhstan, in 1978, broadened the concept of health-care provision beyond the control of specific diseases to include the tenets of community involvement, equity, health promotion, integrated approaches to health-service delivery and intersectoral collaboration. These and other primary-



Côte d'Ivoire: Immunization day at a health centre.

Children of conflict: Helping them survive

ACROSS Africa, civilian populations are caught in the crossfire of conflict, and women and children are all too often among the casualties. Of the estimated 3.6 million people affected by the ongoing crisis in the western Sudan region of Darfur, for example, 1.8 million are children.

The conflict in Darfur continues to displace large segments of the indigenous population, and more than 240,000 Sudanese – 85 per cent of them women and children – have found refuge in neighbouring Chad.

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Eritrea finds ways to reach the goal

ERITREA is one of the few countries in sub-Saharan Africa currently on track to meet Millennium Development Goal 4. Its under-five mortality rate fell by roughly 50 per cent, from 147 per 1,000 live births in 1990 to 74 per 1,000 in 2006. The decline can be attributed to a number of factors. Chief among them is increased immunization coverage, leading to a decreased prevalence of vaccine-preventable diseases. Eritrea is polio free, maternal and neonatal tetanus have been eliminated, and there have been no measles deaths during the past two years. There has also been a sharp reduction in malaria morbidity, from 125,750 cases in 2001 to 34,100 cases in 2005, and in malaria mortality, from 129 deaths in 2001 to 38 deaths in 2005.

Since independence in 1993, and after a 30-year-long conflict with neighbouring Ethiopia, Eritrea has made great efforts to ensure access to health-care services by investing in reconstruction of destroyed facilities, training for health workers, and increased provision of drugs and equipment. As part of its strengthening of the health system, the Ministry of Health has used campaigns to protect children from such illnesses as polio and measles and to provide vitamin A supplements to boost the immune system and avoid *nyctalopia*, or night blindness. However, many children living along the Red Sea coast miss out on health care, and, not surprisingly, child mortality is higher in the two coastal regions than in the other four regions.

Community Integrated Management of Childhood Illness (C-IMCI):

This approach was introduced in 2005 in 17 villages or clusters of villages. Equipped with information, education and communication materials, timers, thermometers, scales, medicines, registers and medical cards, 37 community health workers assisted more than 2,000 children and gave advice to caregivers. In 2006, the first C-IMCI evaluation revealed that community

action through volunteers had the potential to reduce child mortality and that bringing care to the community might remove some barriers to seeking care in health facilities, thereby increasing health-care coverage. It was observed that enthusiasm on the part of community health workers was high, and that workers who provided curative care had a higher level of motivation than those who were limited to health promotion. Monthly refresher training in health facilities – and with it the opportunity to follow up on the work of community health workers – also proved successful.

Based on ‘lessons learned’, it was decided to launch C-IMCI in another 63 villages in 2007. Adi-Rosso is one of those villages, and the community health workers – one for every 75 children – selected by each village committee were being sent on training courses according to the village plan. By the end of the process they will be able to identify and, if necessary, prescribe drugs for the most common childhood illnesses, and to refer severe cases to appropriate health facilities. Because half of all under-five deaths occur when children are less than one month old – and a majority of those deaths occur during the first week after birth – the Government has decided to add a neonatal component to the Integrated Management of Childhood Illness at both facility and community levels.

Community-based therapeutic

feeding: Based on successful community participation in addressing threats against children’s health and survival, community-based therapeutic feeding was introduced in Eritrea in 2006. Still early in the implementation phase, it is evident that this intervention may be able to reach those children who cannot access facility-based therapeutic feeding. Community-based feeding is allowing children and their caregivers to stay in their community and family while being treated – thus addressing women’s workloads, one of the main obstacles to facility-based treatment.

Outreach: Families in Adi-Rosso take their children to a health centre in Nefasit for immunization. The

journey takes at least a day and costs families 120 nakfa (US\$8) for the rent of a camel. Eight dollars is a lot of money in a country where more than 60 per cent of the population lives on US\$16 a month. Another way of reaching the most vulnerable children in very remote villages has been to send out teams from health centres with enough equipment to treat common illnesses, refer severe cases, and provide essential immunization and vitamin A supplementation. Health staff from Foro in the Northern Red Sea region, where an estimated 40 per cent of the population does not have access to health services, explain how they use camels to reach the most remote and mountainous villages – rides that sometimes take up to five days. Although implementation is very recent, it looks as if the outreach initiative, coupled with campaigns, has boosted immunization coverage.

Vitamin A campaigns: Since 2006, the Eritrean Government has been committed to reaching all children aged 6 to 59 months with vitamin A supplementation. This is especially important because undernutrition rates are high in most regions and there is a strong chance that children already weakened by undernutrition will have severe complications due to other illnesses; thus a boost to the immune system can become a life-saving measure. Vitamin A-plus campaigns in 2006 were complemented by measles vaccination and a hand-washing campaign in elementary schools and kindergartens. In May 2007, the activity was combined with a catch-up campaign in 16 subregions to increase routine child vaccination to at least 80 per cent and increase coverage of two doses of tetanus toxoid vaccine among pregnant women to at least 50 per cent. Screening of undernutrition among children under age five was included in the Anseba region campaign. Coverage of vitamin A supplementation is more than 95 per cent in the campaigns – reaching children in even the most remote areas through the use of donkeys, camels and boats.

See References, page 50.

- 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.

This 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 behaviour 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 strongly emphasizes bringing its integrative framework into the mainstream of national policies and programmes, such as health sector-

wide approaches, poverty reduction strategies – including Poverty Reduction Strategy Papers – and associated medium-term expenditure frameworks, basket funding and budget support. It also underscores 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 – aim to promote behaviour change. ACSD also supports active outreach and mobile strategies that are essential to reaching the most remote areas.

The ACSD partners, which include national governments and donors, have set targets of increasing coverage of



Morocco: Carefully monitoring child growth.

Improving and harmonizing national health plans

IN November 2007, at the Second Pan-African Forum on Children, held in Cairo, the African Union endorsed the 'Strategic Framework for Reaching the Millennium Development Goals on Child Survival in Africa', which had been developed by UNICEF, the World Health Organization and the World Bank. Even before that, however, ministries of health throughout the continent had been revisiting and revising their national health plans along the lines of the Strategic Framework.

In **Benin**, for example, the president announced in early 2007 the abolition of all user fees for health services provided to pregnant women and to children under age five. National health and financial specialists worked with UNICEF, the World Bank, the United Nations Population Fund and the World Health Organization (WHO) to refashion the state budget to reflect this new reality. Both domestic and foreign assistance funds were shifted to cover shortfalls the change engendered. As a result, the poverty reduction strategy for Benin, particularly as it relates to maternal and neonatal health and child survival, is much more child-friendly – and more likely to help Benin reach the MDGs.

Certain national health plans in Africa have been in existence for so long, and accumulated such extensive bases of data and lessons learned, that achieving harmony with the Strategic Framework is more a matter of fine-tuning than major overhaul. **Mali** presents one such example. The nation's Programme de Développement Sanitaire et Social (PRODESS) has advanced to the stage where the 2008–2012 strategy for child survival presents detailed interventions appropriate to the smallest administrative district. This meticulous planning enables districts in Mali to understand their needs and constraints better, and consequently manage their local health systems responsively.

In 2007, **Ghana** launched a High Impact Rapid Delivery strategy for health care that has generated impressive results. Fully 100 per cent of Ghanaian newborns and 78 per cent of pregnant women have been reached by basic preventive actions. Vitamin A supplementation rose to

100 per cent among children aged 6 to 59 months. Polio vaccination coverage rose to 100 per cent. No measles deaths have been recorded since 2004, and more than half of Ghanaian children and pregnant women now sleep under insecticide-treated mosquito nets. Another lesson to be drawn from the experience in Ghana is that much can be accomplished when governments, donors and UN agencies work in harmony towards a common goal.

'Harmonization for Health in Africa'

Facing various degrees of progress in African health-care systems, UN agencies, including UNICEF, have chosen to utilize their strengths by creating a consultative structure called Harmonization for Health in Africa (HHA). Coordinated by WHO and the World Bank, and growing out of a 2003 meeting of development agencies and developing countries in Canada, three 'High Level Forums' have been held since 2004.

At these forums, discussions focused on resources, aid effectiveness and harmonization, global health partnerships and monitoring progress towards the MDGs. The forums recommended the establishment of a regional mechanism to facilitate and coordinate country-led development of evidence-based policies, plans and budgets – with the aim of strengthening health systems and service delivery to reach the poor and vulnerable.

The objective of the HHA action framework is to coordinate the efforts of international health agencies and other stakeholders as they work to overcome the grave challenges Africa faces in its progress towards achieving the MDGs and increasing health outcomes. The six focus areas are:

- Supporting countries to identify, plan and address health-system constraints to improve outcomes in a sustainable and effective manner.
- Developing national capacity through training in relevant areas and stimulating peer exchange, establishing a roster of technical expertise in the region and developing partnerships with Africa-based academic institutions.
- Promoting the generation and dissemination of knowledge, guidance and tools in specific technical areas – focusing on strengthening health-service

delivery, monitoring health-system performance, results-based financing, and synthesizing experience on aid effectiveness and health.

- Supporting countries to leverage predictable and sustained resources for the health sector, developing investment cases and providing a platform for bringing together funding from all global mechanisms.
- Ensuring accountability and assisting in monitoring performance of national health systems, aid effectiveness and the performance of the International Health Partnership.
- Enhancing coordination in support of nationally-owned plans and implementation processes, and helping countries to address the country-level bottlenecks arising from constraints within international agencies.

The agencies provide support to countries within existing national development and financing frameworks – including Poverty Reduction Strategy Papers, multi-budget support and sector-wide approaches, medium-term expenditure frameworks and sector investment plans. The following are identified as initial critical interventions:

- Support identified country-level action by mobilizing expertise from across the participating agencies and beyond.
- Produce evidence-based reports for boards and global decision makers that influence health development in Africa.
- Provide all stakeholders with a comprehensive assessment of progress and country needs and demands in achieving the health-related MDGs.
- Serve as a broker and, where appropriate, provide support in facilitating resource mobilization and grant proposal preparation for countries.
- Facilitate exchange of experience across countries and regional institutions to develop regional centres of excellence.

The partnering international agencies have started to implement the HHA action framework, and 23 countries will be supported by 2010.

See References, page 50.

ANC+, EPI+ and IMCI+ to 80 per cent within two years and reducing under-five mortality rates in the districts where the programme is operating by 15 per cent within three years and 25 per cent within five years.

Based on preliminary evaluation and data presented by district health teams in Ghana, this approach is already having a positive impact. Coverage levels of routine immunization among districts have increased by 10–20 per cent, and there have been major gains in the proportion of children sleeping under insecticide-treated nets, antenatal care coverage, and the expansion of oral rehydration therapy and vitamin A usage. In addition, subsidized insecticide-treated nets are being distributed in conjunction with immunization-plus activities. The challenge in West and Central Africa, which have among the highest incidence of maternal, newborn and child mortality in the world, is to scale up effective but sustainable approaches rapidly. ACSD partners are carefully examining the evaluations, with a view to expanding the approach to many more districts and countries in Africa.

Towards a unified framework for maternal and child health care

Distilling the lessons of the past century of public health care in Africa, experts in maternal, newborn and child health are coalescing around a set of strategic principles that have a strong general application to developing countries and a specific focus on reducing maternal and child survival in Africa. The three core principles are:

- A renewed recognition of the principles of primary health care, which emphasize the importance of family and community partnerships in the survival, growth and development of children.
- The health-system development for outcomes approach to health-service delivery, which combines the

strengths of selective/vertical and comprehensive/horizontal approaches through scaling up cost-effective intervention packages and integrating them into a continuum of care for mothers and children. This approach, which is being advanced by a joint international agency framework in Africa (*see Chapter 4*), defies the long-standing dichotomy between vertical approaches to achieve specific outcomes and integrated approaches to strengthen health systems and improve general health, arguing that both aims can be realized by adapting health systems to achieve results.

- Enhanced ways of working at the national and international levels, with a strong focus on coordination, harmonization and results, most prominently the achievement of the health-related Millennium Development Goals.

Key lessons learned from evidence and experience

One overarching principle that has emerged from the review is that no single approach is applicable in all circumstances. The organization, delivery and intervention orientation of health-care services must be tailored to meet the constraints of human and financial resources, the socio-economic context, the existing capacity of the health system and the urgency of achieving results. A focus on results requires strategies that build on the collective knowledge of maternal, newborn and child survival and health in order to identify the solutions that work best for each country and community.



Mozambique: A young mother and her baby.



Nigeria: Mothers wait their turn at a primary health-care centre.

3 Community partnerships in primary health care for Africa's mothers, newborns and children

The household is the front line of health care and treatment of childhood illness in Africa. Recent data from 24 countries in sub-Saharan Africa show that 42 per cent of children who took antimalarial medicines received treatment at home.¹ Across the region, fewer than 40 per cent of women give birth with the assistance of a skilled attendant.² In Eritrea, for example, 72 per cent of women give birth at home with no skilled personnel to help them.³

Empowering African households and communities to participate in the health and nutrition of mothers, newborns and children is a logical and practical way to enhance the provision of care – especially in countries and communities where basic primary health care and

environmental services are lacking. In marginalized and impoverished areas, in both rural and urban settings, community participation can be crucial for households and families to obtain the food, health and caregiving needed by mothers and children to ensure their health and nutritional status. In most cases, this involves the support of trained, motivated workers to attend to their health-care needs.

A multiplicity of community-based approaches

Community partnerships in maternal, newborn and child health are as diverse

as the communities they are designed to serve. Not only are there marked differences among communities in a particular country or district, but there are likely to be disparities within them as well. Even though members of communities may share common heritage, assets and interests, or suffer similar deprivations and disadvantages, different members will have specific needs, concerns and expectations regarding health care.

Nevertheless, there are some common factors associated with successful community partnerships in Africa and elsewhere in the developing world. An overarching objective is that these programmes aim to increase the local population's access to health services

and interventions. Evidence shows that such programmes can help accelerate advances in behaviour change, care practices and care seeking, and empower communities and households to demand quality health care, nutrition, and water and sanitation services.

The importance of community participation goes beyond the direct health benefits to family and community members, and indeed lies at the heart of a rights-based approach to human progress. Participation is essential to enabling people to achieve their full capabilities, exercise their rights to engage in public and community affairs, and foster equity, equality and empowerment. To be effective, community-based programmes and approaches must be owned by the community and adapted to local needs and context.

Success factors in community partnerships

Experience shows that successful community partnerships are based on several common factors. These factors are explored in detail in Chapter 3 of *The State of the World's Children 2008* and are summarized here:

- **Support and incentives for community health workers:** Community health workers, the main agents of community-based treatment, education and counselling, require incentives and support to avert attrition, meet their own commitments and obligations, and sustain worker motivation. They have been particularly effective in improving child survival outcomes in countries across Africa.
- **Cohesive and inclusive community organization and participation:** Programmes that build on established structures within the community, are socially inclusive, and include community members in planning

and evaluation as well implementation are among the most successful in developing countries.

- **Adequate programme supervision and support:** Supervision is required to sustain community members' interest and motivation and reduce the risk of attrition. Other important types of support programmes include logistics, supplies and equipment.
- **Effective referral systems to facility-based care:** Hospitals and clinics are essential complements to successful community partnerships, providing services that cannot be safely replicated elsewhere, such as emergency obstetric care. District health systems also serve as focal points for public health programme coordination.
- **Cooperation and coordination with other programmes and sectors:** An integrated approach to maternal, newborn and child health necessitates collaborative action between programmes and sectors related to health, nutrition, hygiene, major diseases and food security, as well as intersectoral collaboration to address the lack of transportation infrastructure and access to water and sanitation facilities.
- **Secure financing:** To be successful over the longer term, financing for community partnerships should address sustainability and equity, including such issues as user fees and financial incentives for community health workers.
- **Integration with district and national programmes and policies:** Consultative, multi-stakeholder processes are needed for developing sound strategies and ensuring that maternal and child survival feature prominently in national and decentralized plans and budgets, with clear goals and concrete benchmarks.



Zambia: Caring for an infant suffering from malnutrition.

Examples of successful community partnerships in primary health care in Africa

Africa provides rich examples of community-based programmes in a broad spectrum related to maternal and child health and survival. Although these cases differ in terms of their goals and methods, they all demonstrate that engaging community members in programme design is crucial to the success of each initiative. This section will examine community partnerships in health, nutrition, HIV and AIDS, and environmental health in Africa and highlight the factors that have made them successful.

Nutrition

Adequate nutrition benefits children, their families and communities as a whole. Just as important as the availability of food in ensuring nutrition are the decisions households make about food storage, preparation and feeding. For infants and young children, proper nutrition starts with exclusive breastfeeding from birth to six months. Continued breastfeeding is

Community partnerships in nutrition in Ethiopia, Malawi and Sudan

EVIDENCE from Ethiopia, Malawi and Sudan shows that community-based management of severe acute undernutrition can be both successful and cost-effective. Where severe acute undernutrition is common, case fatality rates are typically 20–30 per cent and treatment coverage is commonly less than 10 per cent. Recent evidence shows that programmes of community-based therapeutic care can substantially reduce case fatality rates and increase coverage rates. These programmes use new, ready-to-use therapeutic foods and are designed to increase access to services, reduce opportunity costs, encourage early presentation and compliance, and increase coverage and recovery rates.

Community-based programmes implemented in Ethiopia, Malawi, and northern and southern Sudan

between 2001 and 2005 achieved recovery rates of 78.1 per cent and reduced mortality rates to 4.3 per cent. Coverage rates reached 73 per cent, while 74 per cent of the severely undernourished children who presented were treated solely as outpatients. Initial data indicate these programmes are cost-effective, with costs varying between US\$12 and US\$132 for each year of life gained.

The high cost-effectiveness of these community-based therapeutic care programmes is due to the precise targeting of resources towards severely undernourished children who are at a high risk of dying, and compares favourably with other mainstream child survival interventions such as vitamin A supplementation. Wherever possible, programmes build on local capacity and existing structures and systems, helping to equip communities to deal with future periods of vulnerability.

See References, page 51.

recommended for two years or longer, with age-appropriate complementary feeding to sustain growth and development. In countries where mortality among young children is high, ensuring that children 6–59 months of age receive enough vitamin A is one of the most cost-effective child survival interventions. Another cost-effective measure is fortifying staple foods that most of the population consumes, such as oils or flour.⁴

Care for mothers and newborns

Close to 40 per cent of all under-five deaths occur in the first month of life, the neonatal period, with two thirds occurring during the first week of life, and approximately two thirds of those within 24 hours of birth.⁵ Prenatal care and skilled birth attendants significantly increase the odds of newborn survival during this critical period. Yet more than half of mothers throughout the developing world give birth at home, and nearly half are cared for by family members, neighbours or untrained attendants.⁶ Equipping communities with the skills and knowledge for safe motherhood and newborn care is therefore crucial, particularly in the absence of accessible and affordable health facilities.

Evidence shows that community-based strategies for maternal and newborn survival can make a powerful difference. Up to 72 per cent of newborn deaths could be avoided with simple, cost-effective interventions, such as maternal immunization for tetanus toxoid, nutritional support, birth planning, counselling on breastfeeding, skilled attendants at delivery, immediate postnatal care for the baby, and continued and routine visits with a trained health-care provider.⁷ Various trials at the community level in Africa have shown substantial reductions in child mortality, particularly with case management of sick children by community health workers.



Ethiopia: A proud mother with her just-vaccinated child.

Preventive interventions

The evidence in favour of community-based approaches to child survival and comprehensive health care for children is perhaps strongest in the area of disease prevention and treatment. Through such initiatives as the distribution and increased utilization of insecticide-treated mosquito nets to protect children and pregnant women from malaria, prevention and treatment of HIV, or immunization against a range

of illnesses, community engagement can maximize the effectiveness of low-cost, affordable interventions.

Hygiene and sanitation

More than any other group, young children are vulnerable to the risks posed by contaminated water and poor sanitation and hygiene.⁸ Unsafe drinking water, inadequate availability of water for washing and cooking and lack of

access to sanitation together contribute to more than 1.5 million of the 1.9 million deaths of children under age five each year that are due to diarrhoeal diseases.⁹

Better sanitation alone could reduce diarrhoea-related morbidity by more than one third; improved sanitation combined with hygiene awareness and behaviour change could reduce it by two thirds. Improved household practices would include consistent use

Gambia, Morocco and Ghana: Expanding immunization services and saving children's lives

Vaccinating children against *Haemophilus influenzae* type b (Hib) meningitis in the Gambia:

Experience in the Gambia disproves the notion that integrated approaches must struggle to function in resource-poor countries with weak health systems. In spite of its very limited health and physical infrastructure – the country had only 19 telephone lines per 100 people in 2005, and only 11 doctors for every 100,000 people in 2004 – and frequent breakdowns in the vaccination supply chain, the Gambia managed to improve its Hib vaccine cold chain with the use of solar power, decentralized vaccine storage, and health-care management to provide vaccines where and when they are needed. Compared with the children who received no vaccine, the Hib-immunized group had 95 per cent fewer cases of invasive Hib disease, confirming that the vaccine was as highly protective as it is in industrialized countries. The trial also helped reduce all types of pneumonia in Gambian infants by 21 per cent.

Immunization as a key to enhancing child survival in Morocco: Steady advances in immunization coverage have been the key to Morocco's success in reducing its under-five mortality rate by 58 per cent between 1990 and 2006 – from 89 to 37 per 1,000 live births, for an average annual reduction rate of 5.5 per cent.

Morocco's immunization rates for five of the six preventable childhood diseases have risen impressively since 1990. In 2006, more than 95 per cent of Moroccan children were immunized against the six major vaccine-preventable diseases by age one. High rates of coverage for the third dose of the combined diphtheria-pertussis-tetanus (DPT3) vaccine have been found to be representative of a country's capacity to succeed with its immunization programme, as well as an indicator of the effectiveness of health-service delivery overall. Since 1990, Morocco's national coverage rates for DPT3 have improved from 81 per cent to 97 per cent, according to WHO-UNICEF estimates recorded in 2006.

Dissemination of the third dose of hepatitis B vaccine rose even more sharply, from 43 per cent to 84 per cent between 2000 and 2001, and has continued to improve, with estimated coverage of 95 per cent in 2006.

Morocco's advancement towards polio eradication has been commendable, with vaccination rates reaching 97 per cent, while rates for the measles-containing vaccine stand at 95 per cent. In 2002, Morocco became the first country in WHO's Eastern Mediterranean Region to demonstrate attainment of neonatal tetanus elimination. In 2006, the Ministry of Health budget devoted to the acquisition of vaccines was doubled, and inoculation against *Haemophilus influenzae* type b was introduced into the national vaccination calendar.

Near-universal immunization coverage for Morocco's children is attainable. Many of the remaining

gaps can be targeted through disparities in vaccination rates correlated to the disadvantages of infants born in rural versus urban areas, levels of maternal education and economic status.

Bringing immunization services closer to children in Ghana's rural communities: An immunization campaign in rural Ghana demonstrates that comprehensive and inclusive local-level planning can lead to positive results for children's health – even in remote communities where resources are scarce. The Reaching Every District campaign delivers integrated services in remote communities hindered by weak health infrastructure and inadequate understanding of immunization by families and communities.

Adopted in 2003, Reaching Every District empowers local districts to plan, implement and monitor activities through on-site training by supervisors, regular meetings between community and health staff, and community monitoring systems. By 2004, half of the 10 participating districts recorded an increase in the number of children immunized over previous years, representing a 12 per cent increase. Community involvement is crucial to the success of the programme – particularly the participation of local religious leaders. The decision to conduct immunization campaigns close to markets on active days ensures that children taken to the market by their mothers do not have to miss out on vaccination.

See References, page 51.



Uganda: Women collect water from a community water point.

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 public standpipes, tube wells or boreholes in households and communities.¹⁰ Providing communities with the knowledge and resources to implement these basic household practices is a vital first step towards improving sanitation and hygiene.

HIV and AIDS

The urgency of preventing mother-to-child transmission (PMTCT) of HIV is clear. More than 400,000 children under 15 were newly infected in 2007, mostly through mother-to-child transmission. Without treatment, half of the infants born with the virus will die before they are two years old.

Significant reductions in mother-to-child transmission can be achieved through implementation of basic but critical actions, such as identifying HIV-infected pregnant women by offering routine testing, enrolling them in PMTCT programmes, ensuring that health systems are fully able to deliver effective antiretroviral regimens both for prophylaxis and for treatment, and supporting women in adhering to optimal and safe infant feeding.

Integrating community partnerships into district services and national policies

Two key elements that can help sustain and support community-based initiatives are active support for provincial and central governments, and integration of community programmes into government policies and planning. Child survival, health and nutrition should feature prominently in national and district health policies, with clear goals and concrete benchmarks.¹¹ Strategies for child survival are best formulated through consultative

Ghana and Malawi: Improving access to clean water and sanitation facilities

IN Ghana, a sweeping water reform programme introduced by the Government in the early 1990s led to a dramatic overhaul 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 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 an improved water source, from 55 per cent in 1990 to 75 per cent in 2004, and access continues to expand.

In Malawi, sanitation coverage for rural communities is estimated to be 30 per cent or less, and water coverage stands at 62 per cent, although this figure may mask a significant percentage of non-functioning facilities. In many communities, sanitation facilities consist of traditional pit latrines, which are often inadequate to protect against faecal-oral disease transmission. Cholera, typhoid fever and other water-related diseases remain prevalent.

Water for People is a North America-based non-governmental organization working with communities to provide more than 150,000 people with improved sanitation and access to water. The organization partners with local non-governmental organizations and district governments to support community-based efforts to enhance the quality of water and sanitation facilities. Typical water projects include borehole wells, hand-dug shallow wells, rainwater catchment tanks, community tap stands and simple pit latrines covered with sanitary platforms. Each project benefits 200 to 1,000 people, the organization says.

See References, page 51.

processes involving representatives from the community, district and national levels, as well as the donor community.

Evidence from a wide variety of national programmes and smaller-scale projects confirms that when adapted to suit local conditions and managed by supportive communities and governments, integrated community-based approaches can produce effective, efficient and sustainable results.¹² In Mali, the

Togo: Integrating interventions to accelerate progress on child survival

IN 2004, Togo conducted the first ever national distribution of insecticide-treated mosquito nets. The campaign utilized the infrastructure and personnel already in place for an ongoing measles mortality reduction strategy to provide an integrated package of health-care interventions. The package included measles vaccine, oral polio vaccine, one treated mosquito net and one tablet of mebendazole deworming medication per child, with the aim of reaching more than 95 per cent of children.

An evaluation of the planning, implementation and results demonstrated the feasibility of integrating delivery of these services. One month after the campaign began, evaluators found that 93.1 per cent of children had been reached with measles vaccine and 94 per cent with mebendazole, and household ownership of treated nets increased from 8 per cent to 63 per cent. The campaign still had a long way to go, however, particularly in changing behaviour: The night before the survey only 44 per cent of children under five had slept under their nets.

See References, page 51.

introduction of a decentralized health system based on broad consultations with all stakeholders – especially community leaders and women – led to a near doubling of the number of community-based health centres, from 370 in 1998 to more than 700 in 2004. Of these health centres, 30–51 per cent can provide a minimum package of preventive and curative services.¹³

Understanding variations in epidemiological profiles within a country is an essential first step towards developing a targeted strategy. Equally important are detailed assessments of financial realities and existing levels of infrastructure at the community, district and national levels of health-care delivery. These aspects are vital to the successful execution of a national strategy for child and maternal health, and must be considered at the outset of any planning exercise.

National strategies must lend priority attention to the removal of obstacles to effective scale-up and implementation at different levels of the health system. Well known bottlenecks include irregular immunization sessions, negative experiences with the health system, distance to health centres or lack of information.¹⁴ At the family and community level, effective coverage is often impeded by a poor supply of affordable drugs, low demand and

other fundamental challenges, such as mosquito nets not being treated with insecticide.¹⁵

Donors need to rally behind national strategies for improved child survival, health and nutrition. Both the short-term, disease-specific eradication initiatives – firmly supported by new international donor partnerships – and longer-term, health-sector development programmes can, and should, continue to coexist.

The ultimate responsibility for ensuring children's right to health and nutrition lies with national governments. Governments have a pivotal role in developing and implementing policies to lower the barriers to child health care, improving the quality and efficiency of service providers and increasing public accountability.¹⁶ At the same time, health policies must be accountable to the communities and districts they serve.

Developing strong, child-focused health policies and building strong linkages between communities and health systems are critical; in many countries, increases in health expenditures will need to be accompanied by substantial improvements in governance, economic stability and health-care administration, among other factors, to achieve significant progress towards the health-related MDGs for children.



Togo: Women registering their children during an immunization campaign.

Community care boosts child survival in Niger

FIFTY-SIX per cent of Niger's nearly 14 million inhabitants live more than five kilometres from a health facility. To increase child survival by bringing health care closer to underserved rural communities, the Government of Niger in 2000 began implementing an ambitious strategy to use funds from a debt reduction programme to finance the construction of 2,000 community health posts. This is a major step towards ensuring the availability of one health facility per 5,000 people in rural areas.

Construction of 30 community health posts in southern Niger's Madarounfa District more than doubled access to health care. The proportion of people living within five kilometres (or a 60-minute walk) of a health facility increased from 34 per cent to 72 per cent. Children especially benefit. Since the opening of additional community health posts in the district, the number of annual contacts per child per year has nearly doubled.

Trained community health workers offer a minimum package of curative and preventive interventions at

community health posts. They have been trained in the Integrated Management of Childhood Illness (IMCI) in order to identify and treat effectively the most common diseases among children under five. Malaria, pneumonia and diarrhoea are responsible for almost 60 per cent of under-five deaths in Niger, and timely and effective treatment significantly reduces child mortality. Community health workers refer patients with severe illnesses to integrated health centres and hospitals. Accessing the next level of care, however, can present serious challenges, and lack of transportation is one of the barriers encountered in the referral system.

Prevention is key to the strategy's success

Along with providing basic treatment, community health workers promote disease prevention. They assess children's growth, monitor vaccination status and offer follow-up care. Community health workers also advise households and communities as they communicate life-saving information on early initiation of breastfeeding, exclusive breastfeeding for newborns up to six months, age-appropriate feeding practices, hygiene and use of insecticide-treated mosquito nets for children and pregnant women. These

low-cost interventions produce high-impact results in reducing child mortality.

Although nascent, and with many challenges to overcome, Niger's community health post initiative has opened doors to skilled health care for thousands of children. The availability of trained community health workers is making a difference and providing hope for the 1.8 million children who live far from integrated health centres and hospitals. The Government of Niger's recent decision to make health care available free to children under five is another promising move. It eliminates yet another barrier to health services for the 61 per cent of Niger's population who live on less than a dollar a day.

More needs to be done, however, to build on this programme's initial success. Ideally, health posts should be upgraded to integrated health centres in order to make all services available to children at reasonable distances from their homes. In the meantime, community health posts provide a cost-effective way to save the lives of many children who might otherwise die of preventable diseases each year in Niger.

See References, page 51.



Niger: A woman and her baby head home with a sack of millet.



South Africa: A mother and child receive nutrition counselling.

4 Strengthening community partnerships, the continuum of care and health systems in Africa

The lessons learned from evidence and experience in health-care provision and taking effective approaches to scale are steadily being applied in an increasingly unified and consistent manner. The key international agencies working for maternal and child survival and health – UNICEF, the World Health Organization, the United Nations Population Fund and the World Bank – are uniting with donors, governments and other leading international organizations, such as the African Union, around common frameworks and strategies to scale up access to primary health care. Scaling up involves a complex range of actions, many of which are interrelated, both to achieve breadth and to ensure long-term sustainability of the expansion.

For governments, donors, international agencies and global health partnerships, effective scale-up will require a new way of working in primary health care among the key stakeholders. The central theme of this paradigm is *unity*. Initiatives and partnerships directed towards improving aspects of maternal and child health abound and continue to proliferate, but without greater coherence and harmonization, these disparate efforts risk falling short of achieving the health-related MDGs during the coming years.

The following distinct yet related actions will be required to align programmes, policies and partnerships in the coming decade for the purpose of uniting for maternal, newborn and child survival:

- **Action I:** Realign programmes from disease-specific interventions to evidence-based, high-impact, integrated intervention packages to ensure a continuum of care across time and location.
- **Action II:** Ensure that maternal, newborn and child health care form a central part of an improved and integrated national strategic planning process for scaling up services and systems.
- **Action III:** Develop country plans to strengthen health systems for outcomes.
- **Action IV:** Foster and sustain political commitment, national and international leadership, and sustained

financing necessary for guaranteeing access to the continuum of care.¹

- **Action V:** Create conditions for greater harmonization of global health programmes and partnerships.

The continuum of maternal, newborn and child health care is a relatively new paradigm that emphasizes the interrelationship between undernutrition and the death of mothers, newborns and children. The continuum provides packages of essential primary-health-care services across two dimensions:

- **Time:** The need to ensure essential services for mothers and children during pregnancy, childbirth, the postpartum period, infancy and early childhood, recognizing that the birth period – before, during and after – is the time when mortality and morbidity risks are highest for both mother and child.
- **Location:** Linking the delivery of essential services in a dynamic primary-health-care system that integrates home, community, outreach and facility-based care, recognizing that gaps in care are often most prevalent at the locations – the home and community – where it is most required.

The continuum of care framework has emerged in recognition 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, geographical 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. Integration of 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.

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.²

Scaling up

Scaling up to achieve a continuum of care across time and location is increasingly viewed as one of the most promising ways to accelerate progress towards the health-related MDGs. However, the evidence base on the effectiveness and feasibility of the continuum of care is much less developed than for disease-specific interventions, and there is a growing need to gather evidence on how the continuum approach can function in practice. It will require new frameworks and processes, especially with regard to programme organization. It will also necessitate adapting programme management structures to reflect integration of the various components of the intervention packages and to embed them within health-system development. This will, in turn, call for enhancement of institutional and individual capacities, overcoming resistance to change, and integrating and coordinating fragmented funding streams, particularly those coming from international donors and partnerships.³

Packaging interventions by service delivery mode

Prevention and cure are equally vital in combating disease and fostering maternal, newborn and child health. Packaging a range of evidence-based, cost-effective interventions has the potential to be among the most effective methods to achieve the desired aims. Scaling up requires that countries identify a continuum of care based on a context-specific mix of three components:

- *Family-oriented, community-based services*, which can be provided on a regular basis by community health and nutrition promoters, with periodic oversight from skilled professionals.
- *Population-oriented scheduled services*, including scheduled services provided by skilled or semi-skilled health staff, such as auxiliary nurses or birth attendants and other paramedical staff, through outreach or in facilities.
- *Individually-oriented clinical services*, i.e., interventions requiring health workers with advanced skills, such as registered nurses and midwives or physicians, available on a permanent basis.

Combining the delivery of interventions according to age-specific contacts with health and nutrition services can generate economies of scale in terms of both cost and time, and enhance the number of services that are accessible to children and mothers. If, for instance, insecticide-treated mosquito nets are distributed in a community on one day, vitamin A is provided on another day and immunization campaigns take place on yet a different day, children are less likely to benefit from all three interventions than they would be if these were made available on a single day. Conversely, by combining such low-cost interventions as vaccines, antibiotics, insecticide-treated mosquito nets and vitamin A supplementation, and adding the promotion of improved feeding and hygiene practices, the packaged approach can markedly increase service coverage.⁴

A number of programmes have been scaled up successfully. The Accelerated Child Survival and Development (ACSD) programme is a promising recent effort that has grown rapidly in West and Central Africa. ACSD concentrates on three service-delivery strategies to augment coverage for children, newborns and pregnant women and bundles them in an integrated, cost-effective package. 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 illnesses, 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.

National strategic planning for scaling up services and systems

Scaling up services and systems will require practical, effective strategies at the national level that take into account the potential for expansion, describe the constraints and obstacles that might impede advances, and propose ways these can be overcome.

Key actions required in national strategic plans for scaling up packaged interventions include:

- Identifying and removing health-system bottlenecks.
- Monitoring progress and problems in coverage.
- Phasing in intervention packages and health-system strengthening.
- Addressing the human and financial resources crisis in health care.
- Strengthening health systems at the district level.
- Developing health systems for outcomes.
- Obtaining national political commitment.

Making children the 'absolute priority' in Angola

ANGOLA has now seen six years of stability following a prolonged civil war that left much of the country's health infrastructure in need of rebuilding. To revitalize health and other basic services is the main goal of current Government-led efforts to address child survival. An investment plan, covering the period 2007–2013, has been developed by the Angolan Government, in partnership with UNICEF, the World Health Organization and the United Nations Population Fund, to put this strategy into effect.

A first priority is data collection in this large country of nearly 17 million people. Existing statistics on mother and child health date mostly from before the end of civil conflict in 2002, and they do not reflect the considerable effort made since then to target individual diseases. Even as new surveys are being carried out, new policies have been put in place to address needs and capacity challenges in child and maternal health.

Angola's under-five mortality rate is the second highest in the world, at 260 deaths for every 1,000 live births. Of all under-five deaths, 18 per cent are due to diarrhoea, and nearly 90 per cent of those deaths are attributable to a lack of water for hygiene, unsafe drinking water, and poor access to sanitary waste disposal. Nearly 9 million Angolans, more than half the population, do not have access to safe water, and 11.4 million have no access to adequate sanitation facilities. Only 30–40 per cent of the population has access to fixed health installations.

To ensure that Angola reaches the Millennium Development Goals, the deaths of children under five must be reduced by two thirds and maternal mortality by more than three quarters in the period between 1990 and 2015. Investment will be needed to add 6.7 million new water users and 8.1 million new sanitation users by 2015.

The newly established National Council of Children, engendered by the third National Forum on Children in June 2007, is one example of the Government of Angola's drive to address the challenges to child survival. Representation on the

council is at the level of vice-minister or national director, and members include 16 ministries, the National Institute for the Angolan Child and 18 civil society representatives. The National Council of Children is responsible for monitoring implementation of 11 commitments to children made at the 2007 national forum that address their survival, development, education, protection and participation – which the forum declared to be "the absolute priority."

Building on this momentum for children, the Ministry of Health has identified an essential package of mother and child health care and services to be delivered through three main channels: the fixed network of public health services; outreach and mobile services; and community-based activities. The first phase (2007–2009) focuses on five provinces – Bie, Cunene, Huila, Luanda and Moxico – covering approximately a third of the population. The government is already using the experience of these provinces with a view to scaling up the plan to cover all of Angola's 18 provinces. Its UN-system partners have elaborated an Accelerated Child Survival and Development (ACSD) strategy that can be used to leverage government and donor funding for the national roll-out.

Data on current coverage of health interventions and projections of coverage levels that will be achieved in the intervention areas have been used to calculate the maternal, neonatal and under-five mortality reductions that may be expected over the five-year period. Results will be measured using baseline surveys in each of the five target provinces, and in three or four provinces where the integrated package is not being offered.

To address the fact that few Angolans have direct access to health posts, a cadre of community health workers is being developed. Their role is to motivate the population, to ensure that the package is known and adopted at the household level, and to provide families with basic medical assistance. Field visits to municipalities have shown there is a common agenda and understanding of the revitalization process at different levels of government, and that systems are in place and working well.

See References, page 52.

Identifying and removing health system bottlenecks

Functional service delivery networks are necessary for providing a continuum of care based on three levels of service delivery: family-oriented, community-based services; close-to-client primary services; and facility-based referral care and specialized preventive services. An initial step involves gathering data and qualitative information on all existing service providers – public, private and informal – and organizations, including non-governmental organizations, that can be mobilized in support of the scaling-up effort.

One example of this process is provided in upper eastern Ghana, where many non-governmental organizations are actively supporting different health interventions. Collaboration between the Ghana Red Cross Mothers Club, the national health services and UNICEF under the Accelerated Child Survival and Development (ACSD) programme has succeeded in integrating the efforts of all these organizations and focusing their support on scaling up an evidence-based package of high-impact, low-cost interventions.

Another important step is to identify and analyse system-wide bottlenecks and constraints and to formulate strategies to remove or overcome them.⁵ These may originate at the level of facilities, outreach services, or communities and households, or from the strategic and bureaucratic apparatus that sets policies, controls logistics and supplies, and drafts and implements regulations.

In Guinea, for example, 70 per cent of villages in the districts where ACSD was under way in 2002 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, levels of effective coverage (quality) were found to be far lower than levels of adequate coverage (quantity); fewer 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 nets, combined with heavily subsidized distribution of insecticide-treated nets, and focused on reaching pregnant women who were utilizing antenatal care and had completely immunized their children. By 2004, this integrated approach to removing bottlenecks increased the effective coverage of insecticide-treated nets by 40 per cent, while also expanding 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.

Many bottlenecks will demand a specific solution that involves addressing constraints at one or more levels of service delivery. For example, low demand for quality health services among community members or the limited capacity of health facilities and extension workers to deliver essential services may restrict the coverage of intervention packages, as may financial, social and physical barriers to access. Here, appropriately, the community



Liberia: A woman and her child, newly recovered from malaria, under a bed net.

partnerships elaborated in Chapter 3 can play a unique and vital role in enhancing contact between dedicated health workers – including community health workers – and services, and

households and communities that are currently lacking essential interventions. But facility-based care and outreach workers will be required both to support community health workers

and to provide services for many health interventions that require more specialized assistance.⁶

Monitoring progress and problems in coverage

Improving the performance and motivation of health workers and ensuring that facilities are adequately equipped and drugs are readily available are essential second-line requirements to support community partnerships in health and nutrition and to enhance the quality of service delivery. Part of the solution to improving service delivery involves increasing resources – human, financial and managerial – and providing training, but other incentives and better human resource management may also be needed.

Higher-level determinants of health-system performance – policy and strategic management, multisectoral public policies and environmental and contextual change – are among the most complex challenges for health-system development because they form part of a political and institutional context that may not change readily or easily.⁷ Nonetheless, sound leadership, advocacy, technical assistance and partnerships can help to prompt change.

Phasing in intervention packages and health-system strengthening

A phased approach to health-service delivery will allow individual countries to define and implement an initial package of interventions that can be expanded over time. Both the packaging and the delivery of the priority interventions will depend on the country's health-system capacity. The gradual removal of bottlenecks will facilitate the expansion of service delivery, even during complex emergencies. Since the packaged approach is results-oriented, the implementation of priority interventions at scale can be planned and monitored in a phased manner.

The challenge of retaining and training skilled health workers

ACCELERATING progress for child survival and providing a continuum of care for mothers, newborns and children will require a vast increase in the number of health workers, especially at the community level. It is estimated that almost 860,000 additional health staff, more than half of them health and nutrition promoters, will need to be recruited and deployed by 2015 to meet the health-related MDGs in Africa.

At the same time they are facing massive shortages of health personnel, African countries are steadily losing health professionals to industrialized countries that offer better economic opportunities. The International Development Research Centre, sponsored by the Government of Canada, estimates that developing countries invest about US\$500 million each year in training health professionals who are then recruited or move, in effect subsidizing health systems in more affluent countries. Among personnel trained in Africa, 1 in every 4 doctors and 1 in every 20 nurses are now working in the 30 most industrialized countries of the world. For example, 29 per cent of Ghana's physicians are working abroad, as are 34 per cent of Zimbabwean nurses. In the absence of significant investment in their health systems, developing countries will have very limited options for stopping this 'brain drain'.

Adapting medical training to country needs and providing incentives

To address the loss of 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 have been devised in several countries. In Mali, for example, the Ministry of Health encourages newly graduated doctors to serve in rural areas by offering training, accommodation, equipment and transportation.

Training focused on local conditions can also help limit workforce attrition. Long-standing efforts to expand the number 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 growing concern that affluent countries are benefiting from the brain drain at Africa's expense. In response, a movement has emerged that calls for an end to the recruitment of health workers from Africa, or only to do so in a way that is mutually beneficial. Some voices in this discussion call on industrialized countries to compensate Africa's health systems for the damage caused by their recruitment. In the past five years, about a dozen international instruments have emerged from national authorities, professional associations and international bodies that have set norms for behaviour among the key stakeholders in the international recruitment of health workers.

Similar concerns have been the focus of bilateral agreements, such as the accord between South Africa and the United Kingdom, signed in 2003, that aims to create partnerships on health education and workforce issues. The pact has reportedly been successful in managing migration of health workers.

See References, page 52.



Nigeria: A community health worker gets a lift to her next destination.

The three phases recommended for expanding service delivery coverage for countries with low health-system capacity are as follows.

Phase one: The initial phase focuses on reducing system-wide bottlenecks for family- and community-based care and population-oriented outreach services, fostering demand for and the supply of quality clinical services and providing a minimum package of high-impact, low-cost interventions that can be implemented given the current policy, human resources and capacity conditions. Operational strategies include the training and deployment of community health and nutrition promoters for improved family care practices. The minimum package of interventions typically includes the following components: anti-malaria interventions; nutrition; hygiene promotion; immunization complemented by measles mortality reduction campaigns; Integrated Management of Neonatal and Childhood Illnesses; skilled delivery, newborn care and emergency obstetric care; HIV and AIDS prevention and treatment; facility-based care.

Phase two: The second phase comprises an expanded package that includes additional neonatal and maternal interventions, improved water supplies and basic sanitation through national policies, and the mobilization of additional funding.

Phase three: The third phase involves introducing and scaling up innovative interventions, such as rotavirus and pneumococcal vaccines, and enhancing the supply and demand for this maximum package.

Addressing the human and financial resources crisis in health care

In many countries, economic hardship and financial crises have destabilized and undermined health staff, creating a vicious cycle of demotivation, low productivity and underinvestment in human resources. Tackling the health worker crisis in developing countries will require a mix of measures across various time frames.

Short term: An immediate priority is to ensure that expanding national and global initiatives for maternal and child health do not result in further disruptions to the health system or further significant loss of personnel.

Short to medium term: The productivity and morale of health-care professionals need to be restored, including through such incentives as increased pay and improved supervision. The health workforce – including community health workers – also needs to be expanded within the confines of the country's overall macroeconomic framework and poverty-reduction strategies.

Longer term: Tackling the health worker crisis will demand massive increases in education and training for health-care professionals. Without improved training for medical professionals and increased funding, the crisis may worsen, with devastating implications for maternal, newborn and child survival and health.

The scale of this challenge should not be underestimated. Addressing the health worker crisis in sub-Saharan Africa alone will require an unprecedented surge in staffing levels during the coming decade. Of the 860,000 estimated additional workers needed, more than half will be community health and nutrition promoters. Efforts are under way to expand the number of community health workers in many developing countries, as well as to devise incentive packages that will decrease attrition rates. Several countries, including Kenya, South Africa and Uganda, are currently considering national programmes for community health workers, while Ethiopia is training 30,000 community-based, female health-extension workers to focus on maternal, newborn and child health, malaria, and HIV and AIDS.⁸ Programmes to increase the number of community health workers have also been launched in countries as diverse as Burkina Faso, Egypt and Mozambique.

Upgrading the skills of existing health workers is an integral part of effective scale-up. Improved supervision and monitoring, in addition to results-based performance incentives and contracts, have the potential to motivate health workers employed in sub-Saharan Africa.

Investment in human resources and health-system development 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 worldwide 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.⁹ While some experts estimate that, theoretically, it is possible to fill the gap between present levels and near-universal coverage by 2015, scaling up interventions will not be possible without massively increased investment in maternal, newborn and child health.¹⁰

Ensuring universal access to a continuum of quality maternal, newborn and child health care 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's 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. User fees are an important barrier to accessing health services, especially for poor people. They also have a negative impact on adherence to long-term expensive treatments. This is offset to some extent by potentially positive impacts on quality.

User fees, though, are not the only barrier that the poor face. Other cost barriers include informal fees, the cost of drugs, laboratory and radiology tests not supplied in public health facilities, travel costs, food and accommodation costs, as well as charges in private health care facilities. These costs generally make up a significant proportion of the total costs that households face, and affect disproportionately the poor. In addition, a number of quality, information and cultural barriers must also be overcome before the poor can access adequate health services. The evidence indicates that the poor are disproportionately affected by these non-cost barriers.

Removing user fees has the potential to improve access to health services, especially for the poor. For this to happen, fee removal needs to be part of a broader package of reforms that includes increased budgets to offset

lost fee revenue, maintain quality and respond to increased demand. It also needs clear communication with a broad stakeholder buy-in, careful monitoring to ensure that official fees are not replaced by informal fees, and appropriate management of the alternative financing mechanisms which are replacing user fees.

When the above conditions are not met, fee removal is unlikely to benefit the poor. Under such circumstances alternative policy options for reaching the poor more effectively should be considered.

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 from outside the public sector through the involvement of the private sector, civil society organizations, communities and households.

Strengthening health systems at the district level

Strengthening health systems remains a challenging and complex task, especially in many of the priority countries. The decentralization of health systems and an increasing focus on the district level can be seen as an effective vehicle for delivering effective care to marginalized children and families at the community level.¹¹ 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.¹² 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 had appropriate facilities to perform a Caesarean section. This was also the case for only 17 of the 53 district hospitals in Burkina Faso 10 years after districts had been established; moreover, only 5 of those 17 hospitals had the three doctors required to ensure continuity of care throughout the year.¹³

Nevertheless, the experience of decentralization over 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 reached the critical point of becoming stable and viable structures, they have shown credible and visible results, sometimes in very adverse circumstances, as in the Democratic Republic of the Congo and Guinea. Similarly, Mali has managed to expand health centre networks and services for mothers and children.¹⁴ 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 noteworthy advances in reforming government institutions and performance, including their health systems.¹⁵

Work on the district approach to delivering the continuum of maternal, newborn and child health care requires a new impetus and more rigorous systematization. In particular, a key focus of research should be on the reorientation of national health systems

Egypt: A simple way to save young lives

EGYPT is one African country that has made remarkable progress in reducing the number of children dying before age five. In 1970, the country had an under-five mortality rate of 235 per 1,000 live births, meaning that almost 1 in every 4 children did not reach their fifth birthday. By 1990, however, that rate had been reduced to 91 per 1,000 live births, and in subsequent years, Egypt reduced child mortality by more than two thirds, to 35 per 1,000 live births. Now, the country is on track to cut this number to 30 per 1,000 live births and meet the Millennium Development Goal target by 2015.

One reason for Egypt's outstanding success in increasing child survival is its pioneering adoption of oral rehydration therapy (ORT) to treat infant diarrhoeal diseases. In the late 1970s, diarrhoea was responsible for at least half of infant deaths in the country and accounted for more than 30 per cent of children's hospital admissions. In 1977, the Egyptian Ministry of Health introduced a simple solution of salt, sugar and clean water, known as oral rehydration salts (ORS), in public clinics and commenced local production of ORS packets. At first, usage of the treatment was slow to pick up. By 1982, only 10–20 per cent of diarrhoea cases were treated with ORS, and most of the salts lay untouched in warehouses and clinics. Instead, the most widespread treatments were ineffective antidiarrhoeal medicines, and physicians commonly recommended that mothers withhold fluids and food and suspend breastfeeding.

Building on the success of community trials the previous year, in 1981 Egypt established the National Control of Diarrhoeal Diseases Project with financial support from external donors and consultants. The project involved the Ministry of Health and other branches of government, the private sector, professional societies and international organizations,

including WHO and UNICEF. In 1984, the programme became fully operational. It began with a pilot study to test various approaches and gather baseline information relevant to all the interventions; it was then scaled up based on this information.

The main components of the project were strengthening local production, establishing an extensive distribution network, training health-care providers, developing product design and branding, and carrying out promotion and marketing. Television was chosen as the key mass-education medium after research showed that 90 per cent of households owned a television set. Public-service advertisements brought awareness of ORT to rural communities with high illiteracy rates. Rehydration training centres were established at all levels, from local health centres to universities and central hospitals. Extensive training was provided to doctors and nurses, and oral rehydration therapy was included in basic nursing and medical training.

Good results came quickly. By 1986, nearly 99 per cent of Egyptian mothers were aware of ORS, use of the solution was widespread, and most women could correctly mix the solution. The number of children brought into clinics for treatment of diarrhoea rose from 630,000 in 1983 to 1.4 million in 1985. Infant mortality was reduced by 36 per cent and under-five mortality by 43 per cent between 1982 and 1987. Diarrhoea-related mortality during this same period fell 82 per cent among infants and 62 per cent among children under five. It was estimated that the ORT campaign prevented the deaths of 300,000 children between 1982 and 1989.

The intervention was cost-effective, too. The average cost per child treated with oral rehydration therapy was estimated at less than US\$6, and the cost per death averted was US\$100–\$200. Today, most Egyptian children enjoy their most basic right to survival. Still, 1 out of 28 children in Egypt does

not survive to age five, and child-mortality rates in Upper Egypt – the poorer, mostly rural part of the country south of the fertile and urbanized Nile Delta – remain glaringly inconsistent with those in the rest of the country and in North Africa as a whole.

Even in countries where ORT has been promoted, there are obstacles to increasing coverage to prevent deaths resulting from diarrhoeal disease. Most private clinics still do not prescribe ORS and instead use intravenous therapy. Doctors and other health-care providers in the private sector must be encouraged to use ORT. The underlying causes of diarrhoea, including poor access to education, limited empowerment of mothers, and the lack of safe water and improved means of sanitation, also need to be addressed.

Egypt boasts rates of more than 98 per cent in use of clean water sources and 70 per cent in use of improved sanitation; its rates for immunization against six main childhood diseases are above 98 per cent overall. It lags, however, in the prevalence of exclusive breastfeeding, as does the North Africa subregion as a whole. According to most recent estimates, 14 per cent of Egyptian newborns are underweight at birth, and only 38 per cent are exclusively breastfed in the crucial first six months of life. This figure is the exact average for developing countries as a whole but stands out in a subregion where most other child-health indicators are much better than the global norm.

Despite the remarkable success of ORT in Egypt, the programme's sustainability could be threatened by inadequate financing. Experience shows that when funding for oral rehydration programmes is cut, rates of ORT usage fall sharply. Such rapid declines indicate that behaviour change is still far from widespread, even among health professionals, and that further education and training are still needed.

See References, page 52.

to create the conditions in which district health and nutrition systems that provide a continuum of care can thrive. Systematic analysis and case studies from countries that have tried this approach could yield important insights into the ways current policy processes 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. There is also ample consensus that effective methods of monitoring and evaluating progress are vital for proper system governance.

A results-oriented, evidence-based approach to formulating a continuum of quality primary health care for mothers, newborns and children necessitates reviewing the best information, data and analysis to arrive at the most useful lessons that can inform current and future actions. 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.

Developing health systems for outcomes

Efforts to improve harmonization of aid and to scale up activities, particularly in Africa, have increasingly focused on utilizing the health-related Millennium Development Goals and other indicators as the benchmark for outcomes. The emphasis on outcomes is intended to create a synergy between the outcomes and inputs. Health-system development is increasingly being framed as part of the process of achieving the MDGs, not distinct from them.

This linkage between systems and outcomes has been stressed in the African Union's Strategic Framework for Reaching the Millennium Development Goals in Africa, prepared jointly by UNICEF, WHO and the World Bank and presented to the African Union in November 2007. The framework analyses system bottlenecks for 16 countries and simulates the potential impact on the MDGs of removing these bottlenecks country by country. Based on this framework, more than 10 countries in Africa are currently revising plans and budgetary mechanisms such as Poverty Reduction Strategy Papers, health-sector development plans, sector-wide approaches and medium-term expenditure frameworks to strengthen health systems with the aim of concrete outcomes for mothers and children.

Establishing benchmarks and outcome indicators for health-system development

Indicators associated with the health-related MDGs can serve as appropriate tracers or proxy measures for the performance of health systems. New initiatives can support governments in achieving their agreed outcomes in selected target areas through results-based financing and appropriate incentive frameworks. The objective is to achieve defined output targets for coverage of services that are strongly correlated with positive maternal, newborn and child health and survival outcomes – for example, the proportion of deliveries in an accredited facility, immunization coverage of three doses of diphtheria, tetanus toxoid and pertussis vaccine, or coverage of insecticide-treated mosquito nets in



Gambia: An affectionate moment for a mother and child.

malaria endemic areas. These outputs and targets would be selected based on the risk factors contributing to mortality and morbidity for each country.

Obtaining national political commitment

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, these initiatives can rapidly gain nationwide coverage. Governments can provide the capacity and will to creating a national network based on community health.

Sound budgeting and political and macroeconomic stability 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 subnational levels, e.g., the province or district, where interaction with communities takes place.

The investment case for child survival and other health-related MDGs in sub-Saharan Africa

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.

These will include 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 infections; antimalarial combination drugs; infant feeding and hygiene promotion; insecticide-treated mosquito nets; oral rehydration therapy; skilled attendance at birth; vitamin A supplementation; prevention and care of paediatric 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.

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 between US\$2 and US\$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 \$5 per capita, or less than \$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 60 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 \$12–\$15 per capita, or around \$2,500 per life saved.

Assuming an incremental pace of implementation, the additional annual funding required for the proposed phased acceleration will increase between \$2 and \$3 per capita and per year to take the minimum package to scale in *Phase one*; it will increase by more than \$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 sizeable 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, UNICEF, the World Bank, WHO and other donors.

See References, page 52.



Morocco: A 1984 postage stamp heralds the theme of 'child survival'.



Egypt: A community health worker pays a postnatal visit to a mother in a Nile Valley village.

5 Uniting for child survival in Africa

The marked progress in reducing child deaths in North Africa during recent decades, significant achievements in several sub-Saharan countries, rapid scaling up of several key preventive interventions, and the joint international agency framework for maternal and child health in Africa provide grounds for optimism in the ongoing struggle against death and disease on the continent. But a mighty push is required to turn sanguinity into action and rhetoric into reality. The challenge for child survival must not be underestimated: Simply put, sub-Saharan Africa faces the unprecedented task of lowering child mortality at an annual average rate of more than 10 per cent over the next eight years if it is to meet MDG 4 on time.

At the subregional level, North Africa's main challenges are to sustain the progress made in recent decades and to reduce inequalities and disparities. The four main subregions of sub-Saharan Africa face a formidable task – particularly Central Africa and Southern Africa, which have registered increases in under-five mortality since 1990. In both of these subregions, the challenge is to halt, and then reverse, the rise in under-five mortality by tackling factors that affect the supportive environment – notably civil conflict in Central Africa and the AIDS epidemic in Southern Africa. Without rapid and sustainable improvements in these areas, efforts to reduce child mortality by increasing coverage of preventive and curative

treatment of childhood illness will risk foundering. Eastern Africa (including Djibouti and Sudan) and West Africa face the task of building on the moderate progress achieved in reducing child deaths since 1990.

Meeting the challenge of child survival facing sub-Saharan Africa is not beyond the realm of possibility. The Millennium Development Goals were not dreamed up by a group of utopians but are the result of tough thinking and hard calculations by some of the world's leading political leaders, development specialists, economists and scientists, and they can represent a new hope for accelerating progress on human development in Africa. This report has already described

some of the many success stories in child and maternal survival and health in Africa that have been made possible by combining committed leadership, political will, adequate resources, sound strategies and concerted action among stakeholders.

Meeting the health-related Millennium Development Goals in Africa will require a redoubling of efforts to scale up community partnerships in primary health care, create sustainable continua

of care and develop health systems for results. It also calls for large-scale investment in all areas of the health system – from the community and household levels to outreach services and facility-based care – and especially in those countries lagging furthest behind. For the goals to be met, the survival of mothers, newborns and children must become a regional imperative and be placed at the heart of the international agenda for Africa at the very highest levels.



Sudan: Mother and child in the western Darfur region.

The State of Africa's Children 2008 underscores six pivotal, macro-level actions that require unified engagement:

- *Create a supportive environment for maternal, newborn and child survival and health* by ensuring that health systems and programmes are rights based – and by supporting peace, security, child protection, birth registration, non-discrimination, gender equality and the empowerment of women.
- *Develop and strengthen the continuum of care across time and location.* The continuum must deliver essential services at key points during the life cycle of mothers and children. Strong links are also required between the household, the community, and quality outreach, outpatient and clinical services at primary health-care facilities and district hospitals.
- *Scale up packages of essential services by strengthening health systems and community partnerships* through initiatives to train health workers, extend outreach services, overcome bottlenecks and exploit new technologies and paradigms.
- *Expand the data, research and evidence base.* Although the evidence base on maternal and child health is being provided by a rich array of resources, there is still a demand for more rigorous data collection and dissemination, and research and evaluation.
- *Leverage resources for mothers, newborns and children.* Donor assistance is rising, but not fast enough to meet the goals in Africa. National governments must also fulfil promises to boost health spending.
- *Make maternal, newborn and child survival in Africa a global and regional imperative.*

What needs to be done for progress in child survival in Africa is clear. The basis for action – data, research, evaluation – is already well established. The time frame for results is set by the Millennium Development Goals. The

Why good governance means great things for Africa's children

by Joaquim Alberto Chissano

I HAVE been privileged to lead my great country, Mozambique, and in the course of that I learned practically and precisely how leadership can and must inspire and propel nations and peoples forward. Now, eight years before we reach the Millennium Development Goals target of 2015, I want to share what I've learned as a Head of State in Africa about governance and its huge potential for good in my beloved continent.

The Millennium Development Goals have a very human face, the face of children and their families, all of them hoping and struggling towards better, healthier, safer lives. Achieving the MDGs will not be an abstract, intangible accomplishment but will be an enormous human success, a dramatic material leap forward for all the children and families in all countries. For that, if for no other reason, leaders in Africa must direct their energies towards achieving the MDGs.

Sub-Saharan Africa is now poised at the cusp of an economic renaissance. However, its benefits will only be realized when our children start benefiting from better health care and education, better nutrition and social services. In this way, the renaissance will deepen and widen equitable resource distribution and our societies will flourish, leading to ever greater contributions from Africa to human culture, science and art.

Yet, we know that as a continent we stand at the rear of the field in this great race towards 2015, with farther and faster to go than other countries. The grim example of child deaths suffices to illustrate just how great the distance is. Half of the 9.7 million children who died before their fifth birthday in 2006 were from sub-Saharan Africa. We are losing our children at a far higher rate than anywhere else in the world: 160 children under the age of five die each year in sub-Saharan Africa for every 1,000 live births. In South Asia, with the next highest toll, the child mortality rate is 83.

The factors that take so many children's lives and compromise the development of so many others may seem overwhelming. The conspirators against progress include the lack of economic development, leading to poverty, wars, disease and corruption.

Against these enemies, sub-Saharan Africa has made gains, but our successes are overshadowed and too often inadequate. It is, therefore, vital that leaders look afresh at the priorities that must be set and at ways to redirect energies and resources to what is right, effective and valuable.

Africa, for example, loses around US\$18 billion a year due to wars, civil wars and insurgencies. In conflict, an African nation's economy shrinks by 15 per cent annually. That represents not only human suffering and loss but surpasses the roughly \$12 billion that our continent needs to improve education, access to clean water and sanitation, and protection against tuberculosis and malaria for our vulnerable people. It also represents more than what it would take to tackle HIV and AIDS in Africa on a yearly basis: \$16.3 billion.

My own country endured 16 years of armed conflict in which an estimated 1 million of my compatriots perished. Soon after I became president in 1986, I initiated wide-ranging reforms and made attaining peace my number one goal. Today, the commonly shared view is that Mozambique is strong and vibrant, averaging 8 per cent in economic growth between 1996 and 2006, one of the highest rates in Africa. As a result, the poverty headcount index was reduced by 15 percentage points between 1997 and 2003, according to the World Bank, bringing almost 3 million people out of extreme poverty (out of a total population of 20 million).

Many African countries are enjoying a peace unparalleled in the history of this continent, yet they continue to allocate resources as if they were at war. I call upon our leaders to re-examine their spending priorities and consider the opportunities lost when these monies are not invested in providing health and education to our people.

Another huge drain on our treasuries and our people is the heavy debt burden the continent carries. In 2004 alone, for example, sub-Saharan Africa paid \$15 billion on debts of \$220 billion, an outflow of \$41 million every day. Thanks to the Multilateral Debt Initiative and other bilateral initiatives, these debts have been slashed for several countries, but many still continue to carry far too heavy a debt burden.

The flight of resources from Africa is compounded by the departure of almost 20,000 of the brightest and most skilled Africans estimated to leave the continent for industrialized countries every year.

Good governance is our best hope against these challenges. Governance entails choices. It demands a visionary leadership that will set enlightened priorities and redeploy resources and retain skilled talent. Compassionate and committed leaders can and must create the policies and invest the necessary resources in infrastructure and services, empowering people to improve their conditions and safeguard their children's lives, thus accelerating progress towards the MDGs.

As I said, we are making progress. Child mortality rates declined by 29 per cent in Malawi between 2000 and 2004 and by 20 per cent in Ethiopia, Mozambique, Namibia, Niger, Rwanda and the United Republic of Tanzania. There has been tremendous progress made in the Gambia, Guinea Bissau, Malawi, Sao Tome and Principe, Togo and Zambia in getting children to sleep under insecticide-treated mosquito nets. This is helping to drive down deaths from malaria, one of the biggest killers of children in sub-Saharan Africa.

Partners from around the world are needed as sub-Saharan Africa pushes for enlightened leadership and progress towards the MDGs. But the work is Africa's. As we have risen to many challenges, we must and will rise to this one.

The African Union is determined to install good governance as a main pillar in sustaining the continent's effort to develop. The New Partnership for Africa's Development (NEPAD) is another initiative that consolidates efforts in this regard. Participating countries are working through NEPAD to strengthen their political and administrative frameworks in line with the principles of democracy, transparency, accountability, integrity, respect for human rights and the promotion of the rule of law. In addition to a political governance focus, the countries are also addressing the important issues relating to economic governance, which, in conjunction with political issues, will contribute towards development and the eradication of poverty.

Africa does not need convincing. What is needed is committed leadership at national and community levels, committed partners, resources and excellent governance for substantial and positive change for children.

See References, page 52.

Joaquim Alberto Chissano served as the second President of Mozambique for 19 years, from 1986–2005. Mr. Chissano has served as the Special Envoy of the United Nations Secretary-General to northern Uganda and southern Sudan. He also chairs the Joaquim Chissano Foundation and the Forum of Former African Heads of State and Government.

frameworks – community partnerships, the continuum of care and health-system strengthening for outcomes – are increasingly well defined.

We even know what it will cost to reduce child mortality in Africa. The joint international agency framework for maternal and child survival in Africa estimates that by scaling up the existing interventions highlighted in this report, deaths of children under age five could be reduced by 35 per cent by 2009 at a cost of about US\$2.50 per capita, or about US\$800 per life saved. Achieving MDG 4 will 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 most of the 4.9 million children under five who die in Africa each year. What are these lives worth? Saving them would require an additional US\$10 per capita per year, or less than US\$2,000 per life.

Meeting in 2005 at Gleneagles, Scotland, the major industrialized nations pledged to double their aid to Africa by 2010. Yet, as of mid-2007, there was little to show.¹ African countries, too, have been remiss in not demonstrating their commitment to their own children. The Abuja Declaration, adopted at the 'African Summit on HIV/AIDS, Tuberculosis and Other Related Infectious Diseases' in 2001, included a pledge to devote 15 per cent of participants' national budgets to health.² Yet seven years later, few countries have managed to do this.

Making child survival in Africa a regional and global imperative

Many have heard the cry for child survival. Since the early years of the child survival revolution, global partnerships for health, often financed through private sources, have proliferated, and they have reinvigorated

the field in recent years. UNICEF is a partner and co-sponsor of a number of them, including the Partnership for Maternal, Newborn & Child Health, the GAVI Alliance, Roll Back Malaria, the International Health Partnership, Women Deliver, Catalytic Initiative, the Global Alliance for Improved Nutrition, and the Flour Fortification Initiative, among 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 is beginning to yield results. A number of these partnerships have proved to be 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.³

Mobilizing mobile phones to improve health services

PERHAPS no other region of the world has been more affected by the introduction of mobile phones than Africa, and the rapid spread of mobile technology could enhance child survival and other public health initiatives. Over the past 10 years, nearly every country in Africa has launched sophisticated mobile phone systems, and the number of people with access to phones has increased a hundredfold – the largest growth rate of cellular telephone subscribers in the world. Great variations in coverage remain, ranging from 724 mobile phones per 1,000 inhabitants in South Africa to 32 per 1,000 in Rwanda. But fully 60 per cent of Africans live in areas with cellular coverage, and that figure is expected to rise to 85 per cent by 2010.

Mobile technology is seen as having great potential to enhance approaches to advancing child health and reducing child mortality in Africa and elsewhere. Mobile phones can bridge the gap for people in rural areas where fixed landlines are not an option, and the transmission of health information may become one of their key uses in Africa. For example, mobile phones are already playing a role in enhancing care for people living with HIV by improving communication and linking patients to the health system. Text messaging can be used to spread the word on sexual health and HIV prevention, particularly among young people.

Where the AIDS epidemic threatens the lives of children's parents and caregivers, advances in treatment bolster their chances of survival. A South African-based non-profit organization provides a cellphone that allows therapeutic counsellors for patients in antiretroviral therapy to capture and transmit data as a

part of treatment aftercare – instantly sending such vital information as symptoms and adherence to drug regimens to a central database. In Rwanda, communications technology is being used to develop a unified system that provides local and national health managers with timely data for planning, and a separate initiative is allowing health officials and service providers to view, analyse and respond to vital data immediately.

Such applications have the potential to free health workers from time spent preparing and sending paper records, giving them more time to apply their training to improve children's health. As current initiatives are being evaluated and new benefits are tested, plans are already under way to expand the use of mobile phones for health care to more countries in Africa.

See References, page 52.

Africa has received greater attention in global health issues, and greater efforts to fight and control diseases are beginning to yield results, such as the massive reduction in measles deaths on the continent. Yet it has been argued that, in their single-mindedness to produce results, global partnerships are often donor- and product-driven rather than country- and people-centred. Moreover, a frequent focus on a single disease 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 African countries must take the lead and own the solutions to their health problems. This will require greater

harmonization and alignment with developing countries' priorities, systems and procedures. Indeed, this position was adopted in the Paris Declaration on Aid Effectiveness, which is providing a framework by which donor and developing country partnerships can fully cultivate their potential.

Africa as a continent accounts for more than half of the world's deaths among children under five. It is also the 'youngest' continent in the world, with nearly 50 per cent of sub-Saharan Africa's citizens being under age 18. Yet, at just past the midway point in the race to the Millennium Development Goals, progress in accelerating child survival in Africa south of the Sahara has been slow, and the region has fallen sharply

behind the pace required. It is a sad state of affairs, for if we risk failing the continent's youngest citizens, what have we really accomplished? And what does it say about our global priorities?

The challenge is to shake off our cynicism and lethargy and to put aside the broken promises of the past. The 147 million African children under age five are counting on us to ensure their survival, their health and their development as productive human beings. The urgent need is to embrace the goal of maternal and child survival and health in Africa with renewed energy and sharper vision, and to position it at the heart of the regional agenda – both as a matter of social justice and to honour the sanctity of life.



Kenya: A woman with a toddler on her back in early 2008.

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Why good governance means great things for Africa's children

Graciously contributed by the Office of the former President of Mozambique, Joaquim Alberto Chissano.

Mobilizing mobile phones to improve health services

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Côte d'Ivoire: Supplementary feeding for an undernourished child.

STATISTICS⁺

INDICATOR	SUB-SAHARAN AFRICA ^a	EASTERN AND SOUTHERN AFRICA ^b	WEST AND CENTRAL AFRICA	NORTH AFRICA ^c	WORLD
Demographic indicators					
Total population (thousands), 2006	787,412	408,886	378,526	154,624	6,577,236
Population under 18 (thousands), 2006	394,112	201,297	192,815	57,647	2,212,024
Population under 5 (thousands), 2006	130,842	65,785	65,057	16,324	625,781
Survival					
Life expectancy at birth (2006)	51	51	50	71	68
Neonatal mortality rate (under 28 days), per 1,000 live births (2000)	44	39	48	20	30
Infant mortality rate (under 1), per 1,000 live births (2006)	94	81	107	30	49
Under-5 mortality rate, per 1,000 live births (2006)	157	128	186	35	72
Under-5 mortality rate, average annual rate of reduction (1990–2006)	1.0	1.4	0.7	5.3	1.6
Maternal mortality ratio, per 100,000 live births (2005, adjusted)	900	730	1,100	160	400
Health and nutrition					
Percentage of infants with low birthweight (1999–2006*)	15	15	14	12	15
Percentage of under-5s who are moderately or severely underweight (2000–2006*)	29	29	28	6	25
Percentage of population using improved drinking-water sources (2004)	56	57	55	91	83
Urban	80	85	76	96	95
Rural	42	44	40	86	73
Percentage of population using adequate sanitation facilities (2004)	37	38	36	77	59
Percentage of 1-year-old children immunized (2006) against:					
Tuberculosis (BCG)	81	84	79	98	87
Diphtheria/pertussis/tetanus (DPT1)	84	86	81	98	89
Diphtheria/pertussis/tetanus, 3 doses (DPT3)	72	78	67	97	79
Polio (polio3)	74	77	70	97	80
Measles	72	75	68	96	80
Hepatitis B (hepB3)	48	58	38	94	60
<i>Haemophilus influenzae</i> type b (Hib3)	23	33	13	2	22
Education					
Percentage of primary school entrants reaching grade 5 (administrative data; 2000–2006*)	70	70	71	92	78**
Net primary school attendance ratio (2000–2006*)					
Male	64	65	63	94	80
Female	60	65	57	92	78
Net secondary school attendance ratio (2000–2006*)					
Male	25	20	30	61	50**
Female	22	19	25	59	47**
Adult literacy rate (percentage, adults 15+, 2000–2006*)	58	60	57	68	78

STATISTICS[†]

INDICATOR	SUB-SAHARAN AFRICA ^a	EASTERN AND SOUTHERN AFRICA ^b	WEST AND CENTRAL AFRICA	NORTH AFRICA ^c	WORLD
Economic indicators					
Gross national income per capita (US\$, 2006)	849	1,136	553	2,165	7,406
Percentage of population living on less than \$1 a day (1995–2005*)	43	34	52	3	19
Percentage share of central government expenditure (1995–2005*) allocated to:					
Health	-	5	-	4	14
Education	-	15	-	19	5
Defence	-	14	-	12	11
Percentage share of household income (1995–2004*) received by:					
Lowest 40 per cent	13	11	16	18	20
Highest 20 per cent	55	58	49	45	42
HIV/AIDS					
Adult prevalence rate (15–49 years, end 2007)	5.0 ^d	8.6 ^{d,e}	3.5 ^e	-	0.8
Estimated number of people (all ages) living with HIV (thousands), 2007	22,500 ^d	17,500 ^{d,e}	6,900 ^e	-	33,200
Estimated number of children (0–14 years) living with HIV (thousands), 2007	2,000 ^{d,e}	1,400 ^{d,e}	650 ^e	-	2,100
Estimated number of children (0–17 years) orphaned by AIDS (thousands), 2007	11,400 ^d	8,700 ^{d,e}	3,300 ^e	-	15,200 ^e
Child protection					
Birth registration (percentage, 1999–2006*) ^g	35	28	41	-	-
Urban	54	46	58	-	-
Rural	29	23	35	-	-
Child marriage (percentage, 1987–2006*)	39	35	44	13	-
Urban	24	20	27	10	-
Rural	47	43	53	17	-
Child labour (5–14 years, percentage, 1999–2006*)	33	33	34	7	-
Male	34	35	33	9	-
Female	32	31	34	6	-
Women					
Adult literacy parity rate (females as a percentage of males, 2000–2006*)	72	75	70	71	86
Antenatal care coverage (percentage, 2000–2006*)	69	70	67	75	75
Skilled attendant at delivery (percentage, 2000–2006*)	45	44	46	77	63
Lifetime risk of maternal death (2005) ¹ in:	22	30	17	210	92

Notes:

[†] Statistics for UNICEF standard regional classifications and notes on the data can be found in *The State of the World's Children 2008*, pp 109–153.

* Data refer to the most recent year available during the period specified.

** Excludes China.

– Data not available.

^a Includes Djibouti and Sudan.

^b Plus Djibouti and Sudan.

^c Includes Algeria, Egypt, Libyan Arab Jamahiriya, Morocco and Tunisia.

^d Excludes Djibouti and Sudan.

^e Data on HIV and AIDS for 2007 is derived from the *2007 AIDS Epidemic Update*, released in November 2007 by the Joint United Nations Programme on HIV/AIDS. Those indicators which are reported here but do not have a corresponding figure in the *2007 AIDS Epidemic Update* refer to the year 2005, and correspond to figures published in UNICEF's *The State of the World's Children 2008*, p.129.

^g The global and regional estimates for birth registration included in this table are based on the subset of countries for which data are available for the period 1999–2006. Global and regional estimates for a wider set of countries are available for the period 1997–2006 and can be found at www.childinfo.org/areas/birthregistration.