

## The Role of Quality in MDG Progress

Since 2000, over 34 million additional children in the developing world have gained the chance to attend, and complete, primary school—one of the most massive expansions of schooling access in history. Over 550 million children have been vaccinated against measles—doubling the coverage rates in some countries, and driving down measles deaths in Sub-Saharan Africa by 75 percent. The number of developing-country AIDS (acquired immunodeficiency syndrome) patients with access to antiretroviral treatment increased from 240,000 in 2001 to over 1.6 million at mid-2006. Despite migration and resource constraints, health workers and clinic visits across the developing world are increasing significantly, as are the share of pregnant women with access to health care when they deliver, and the share of young children with regular health and nutrition screening. There is now little question that the “stretch” goals adopted by the global community in 2000 to promote human development have helped stimulate and support more rapid expansion of basic health and education services across the developing world.

The progress in service delivery is not even, of course—and it is not enough. Across every region there are lagging countries, and within every country there are poor people, rural areas, women, girls, and vulnerable groups who lack fair access to schooling,

basic health care, and water and sanitation. In reviewing overall progress toward the human development Millennium Development Goals (MDGs), this chapter examines where the worst gaps persist and what policies can work to redress them.

The chapter also explores whether this strong push to expand coverage is eroding service quality. Measuring quality in education and health poses very different challenges, but in both cases limited data have inhibited comparisons across developing countries. In education, while student learning outcomes offer a straightforward and meaningful way to measure system quality, few developing countries have tracked these systematically. But new education research in 2006 has built directly comparable measures of what children are learning in the developing world, and the results have clear implications for MDG progress. In health, the latest research exploits creative ways to measure the quality of services that health workers actually deliver to patients, rather than what they are capable of delivering; the implications for health policy are equally important.

The first half of this chapter provides a brief overview of progress on each of the human development MDGs, except the gender goal (MDG3), which is the subject of chapter 3. The chapter also reviews global trends in financing for human development

sectors and the performance of major global programs. The second half of the chapter focuses on the role of quality in promoting progress on the human development MDGs.

### Human Development MDG Status 2007

Broad regional trends of MDG progress have not changed since last year. All regions are off track on the child mortality goal, and at least some of the others. The two regions lagging most seriously behind—South Asia and Sub-Saharan Africa—are off track on all of the goals. This section highlights some of the countries making exceptionally fast progress toward different MDGs, countries where outcomes are worsening, the performance of major global programs, and new evidence from research on what drives country progress. The chapter gives special attention to the performance of fragile states—which lag far behind other developing countries on most MDGs—and the special challenges they face in reaching the goals.

#### MDG1—Nutrition Target

Access to adequate food is one of the most basic conditions of survival and escape from poverty. Accordingly the first MDG links two measures of poverty: *income poverty*, which is discussed in chapter 1, and *hunger*. The target is to halve between 1990 and 2015 the proportion of people who suffer from hunger, as measured by the percentage of children under five who are underweight. Undernutrition is not only a threat to poverty reduction progress, it is also the underlying cause of over 55 percent of all child deaths. In 2007 nearly a third of all children in the developing world remain underweight or stunted, and an estimated 30 percent of the overall population of the developing world suffers from micronutrient deficiencies. But the picture differs across regions:

- *South Asia* has the highest rates and largest numbers of malnourished children. Under-

weight prevalence rates are 38–51 percent in the most populous countries—India, Bangladesh, Afghanistan, and Pakistan. Progress is being made in these countries, but none is on track to reach the MDG.

- *Sub-Saharan Africa* has an estimated 26 percent of all children suffering from undernutrition. Of concern are worsening trends in countries such as Cameroon, Burkina Faso, and Zambia.
- *East Asia, Latin America, and Eastern Europe* all have some countries off track to reach the MDG. The highest levels of malnutrition and micronutrient deficiencies are in Cambodia, Indonesia, Lao People's Democratic Republic, the Philippines, Guatemala, Haiti, Honduras, and Uzbekistan. Vietnam, on the other hand, has made impressive progress in improving child nutrition.

#### MDG2—Universal Primary Completion

Globally the primary completion rate has increased from 78 percent in 2000 to an estimated 83 percent in 2005, and the pace of annual improvement has accelerated since 2000 in all regions except Latin America, where completion rates were already high. Progress has been especially strong in North Africa, South Asia, and Sub-Saharan Africa. Although some 38 percent of all developing countries are considered off track, and another 22 percent have inadequate data, the number of countries that have achieved universal primary completion increased from 37 in 2000 to 52 in 2005. Nine of the 10 countries making fastest progress globally are low-income countries in Africa, but given the low base they started from in 1990, most are still off track to reach the MDG (table 2.1). Of 38 African countries for which there are data, 33 are off track, with a few countries showing actual declines in primary completion.

The two largest challenges for all countries are ensuring that primary completion means completion with adequate learning—discussed later in this chapter—and extending schooling access to the last 10 percent of children. While survey data indicate that

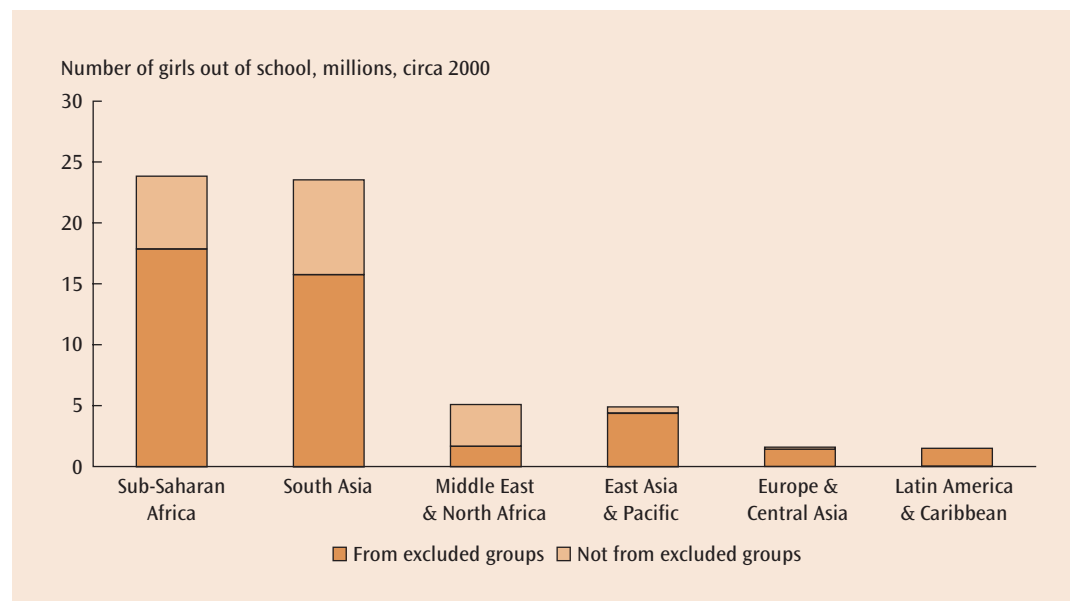
the largest gaps in schooling access in virtually every developing country are between high- and low-income populations, an overlay of issues can make particular groups of poor students especially hard to reach. A recent study (Lewis and Lockheed 2006), for example, showed that nearly 75 percent of the 55 million girls who remained out of school in the developing world in 2000 were “doubly disadvantaged”—female *and* from excluded ethnic, religious, or caste groups (figure 2.1). Achieving universal primary completion in these cases will require more than just building schools. It will also require actions to eliminate discriminatory policies, change teachers’ attitudes, provide compensatory preschool and in-school programs to help disadvantaged girls catch up, and tools such as targeted stipends to overcome parents’ reluctance to send girls to school and the direct and opportunity costs of doing so. The encouraging fact is that many policies and efforts to reach the “doubly disadvantaged” in fact will benefit all disadvantaged students, and bring countries closer to the goals of education for all.

**TABLE 2.1** Several low-income countries are making strong progress on universal primary completion

Country	Primary completion rate		Annual percentage increase 2000–2005
	2000	2005	
<b>Strong performers</b>			
Mozambique	16.2	42.0	20.9%
Cambodia	46.6	92.3	14.7%
Benin	34.9	65.0	13.2%
Rwanda	22.4	39.0	11.7%
Niger	16.8	28.1	10.9%
Guinea	33.3	54.5	10.4%
Madagascar	35.6	57.7	10.1%
Ethiopia	36.7	55.0	8.4%
Senegal	36.0	52.2	7.7%
Burundi	25.1	35.7	7.3%
<b>Poor performers</b>			
Mauritania	51.6	44.5	–2.9%
Namibia	85.4	75.3	–2.5%
Malawi	67.2	60.7	–2.0%

Source: UNESCO Institute of Statistics., 2007.

**FIGURE 2.1** Most out-of-school girls are “doubly disadvantaged”: Female and from minority groups



Source: Lewis and Lockheed 2006.

Donor aid for education fell in 2005, for the first time since 2000. Reasons for the decline appear to be short term in nature and are discussed later in this chapter. With its announcement in April 2006 of a \$15 billion commitment over the next 10 years, the United Kingdom is now the leading bilateral source of support for education. Other European Union and Group of Eight (G-8) donor countries have also pledged to increase support for education within their rising overall levels of official development assistance. The Education for All-Fast Track Initiative (EFA-

FTI) (see box 2.1) appears to provide a useful framework to ensure that increased finance is used effectively to accelerate countries' progress toward MDG2 and harmonize donor assistance.

#### MDG4—Child Mortality

Over 10 million children under five in the developing world die each year of diseases that are preventable and curable with a handful of simple, low-cost interventions. An estimated 63 percent of child deaths could

#### BOX 2.1 Early evidence that the EFA Fast Track Initiative is making a difference

*The EFA Fast Track Initiative.* The EFA Fast Track Initiative, launched in 2002, is the major global program promoting attainment of the education MDG, and Education for All Goals more broadly. The FTI is a “results-focused” partnership of all major donors for education and all low-income developing countries willing to commit to ongoing benchmarking of their education system performance, to ensure that spending produces results. The FTI is managed by a small secretariat staffed and supported by partner agencies and housed in the World Bank. Starting with 8 developing countries in 2002, the FTI had expanded to 28 countries by end-2006. At end-2008, it expects to involve 60 low-income countries, covering approximately 70 percent of the out-of-school children in the world. The FTI also has a special focus on supporting progress in fragile states.

Donor financing for FTI countries is channeled both through expansion of existing donor programs and the multidonor FTI Catalytic Fund, administered by the Secretariat. Although the Catalytic Fund was originally conceived as a small and short-term source of bridge financing for countries entering the initiative without many active bilateral donors, the Fund has continued to attract donor pledges. At end-2006, the Fund totaled \$1.1 billion in donor contributions and was disbursing approximately \$150 million per year in grants to FTI countries. In FY 2008, Catalytic Fund disbursements are expected to be about 10–15 percent of total aid for basic education in low-income countries. In 2008, the Fund's initial limit on support of up to three years will also be relaxed.

The FTI has sought to tighten the “compact” for results by monitoring the performance of both countries and donors. Among countries, the FTI's performance benchmarks promote sound policies and results focus; among donors, the FTI encourages more harmonized and efficient aid.

A review of the program in 2006 concluded that the FTI is making progress on these goals (World Bank 2006). The FTI's performance benchmarks have acquired growing international consensus and, while there is less progress in some areas than others, FTI has helped some of the world's lowest enrollment countries substantially increase primary school coverage and girls' enrollments; reduce repetition; increase domestic spending on primary education; and boost spending on books, supplies, and maintenance. The FTI also seems to have had a large effect on donor harmonization and sector planning. Joint sector reviews, pooled funds, single reporting arrangements, and joint missions are becoming the norm in FTI countries, reducing transactions costs and increasing aid efficiency. By simultaneously promoting a scale-up of spending on primary education and policy reforms among both recipient countries and donors to improve the effectiveness of that spending, the Initiative appears to have created a useful framework for education MDG progress.

be averted with oral rehydration therapy to combat diarrhea, insecticide-treated bednets to prevent malaria, breastfeeding to improve nutritional status, and antibiotics to treat acute respiratory infections, if these were implemented universally (Jones and others 2003). But progress on the child mortality MDG lags other goals. In 2005, only 32 out of 147 developing countries (22 percent) were making enough progress to achieve a two-thirds reduction in child mortality between 1990 and 2015.

Moreover, 23 low- and middle-income countries show worsening or stagnant child survival trends. Many of these countries are either in conflict, emerging from conflict, or are heavily affected by HIV (Human Immu-

nodeficiency Virus)/AIDS. Among the worst are Iraq (150 percent increase) and four countries in Southern Africa (Botswana, Zimbabwe, Swaziland, and Lesotho) in which child mortality increased because of HIV/AIDS.

The majority of countries have reduced child mortality since 1990, but not at the pace required to reach the MDG—an annual decline of 4.3 percent over the entire period. Progress is possible, though, as shown by sharp declines even in some low-income countries: between 1990 and 2005, under-five mortality per 1,000 live births declined from 177 to 61 in Timor-Leste, from 53 to 19 in Vietnam, from 147 to 78 in Eritrea, and from 166 to 75 in Bhutan (table 2.2). However, of the best performing Sub-Saharan

**TABLE 2.2** Progress on child mortality in a few countries

	Under-five mortality rate per 1,000 births				Annual percent change 1990–2005
	1990	1995	2000	2005	
<b>Strong performers</b>					
<b>Low-income countries</b>					
Timor-Leste	177	154	107	61	–7.1
Vietnam	53	44	30	19	–6.8
Bhutan	166	133	100	75	–5.3
Mongolia	108	87	65	49	–5.3
Lao PDR	163	131	101	79	–4.8
<b>Sub-Saharan Africa</b>					
Eritrea	147	122	97	78	–4.2
Malawi	221	193	155	125	–3.8
Cape Verde	60	50	42	35	–3.6
Comoros	120	101	84	71	–3.5
Mozambique	235	212	178	145	–3.2
<b>Middle-income countries</b>					
Czech Republic	13	10	5	4	–7.9
Egypt, Arab Rep. of	104	71	49	33	–7.7
Peru	78	63	41	27	–7
Turkey	82	63	44	29	–6.9
Syrian Arab Rep.	39	28	20	15	–6.6
<b>Poor performers</b>					
Iraq	50	122	125	125	6.1
Botswana	58	66	101	120	4.8
Zimbabwe	80	90	117	132	3.3
Swaziland	110	110	142	160	2.5
Lesotho	101	91	108	132	1.8

Source: World Bank

### BOX 2.2 Fast progress on child mortality in Eritrea

What made it possible for Eritrea, a fragile, postconflict country with annual per capita income of just \$190 and a primary completion rate for girls of only 33 percent to reduce under-five mortality by nearly 50 percent between 1990 and 2005? Based on assessments of child health services, the decline in mortality has been attributed in part to the implementation of the IMCI (integrated management of childhood illness) approach, including the training of over 500 health workers at different levels of the health care system in IMCI case management. Following the IMCI implementation, it was found that availability of drugs and equipment in health centers had improved, and that providers were doing a better job of following protocol for diagnosis and prevention of disease. Immunization coverage for fully vaccinated children increased from 41 percent in 1995 to 76 percent in 2002 in two Demographic and Health Survey (DHS) rounds. Encouraging and plausible as these factors are, programs such as Eritrea's should undergo well-designed evaluations before conclusions can be confidently drawn. The evidence used to explain changes in mortality often consists of after-the-fact rationalizations that link the implementation of specific activities with observed trends in mortality, an unscientific approach that does not take into account what might have happened without the intervention.

*Source:* [http://www.usaid.gov/stories/eritrea/cs\\_eritrea\\_mortality.html](http://www.usaid.gov/stories/eritrea/cs_eritrea_mortality.html), retrieved in 2006.

African countries, only Eritrea, described in box 2.2, is close to the MDG pace.

#### MDG5—Maternal Health

Each year an estimated 500,000 women in the developing world die in childbirth. While this number is far lower than annual child deaths, reducing maternal mortality is a global pre-occupation because deaths during delivery are highly preventable. Maternal mortality has been called a “tracer condition” for health systems (World Bank 1999), because if countries can ensure the three basic conditions of adequate access to antenatal care, medical attendance at delivery, and a health referral system that ensures prompt treatment of emergencies at adequately equipped clinics, deaths during childbirth can be virtually eliminated. Ninety-nine percent of maternal deaths occur in the developing world.

The MDG target—to reduce the maternal mortality ratio by three-fourths between 1990 and 2015—remains difficult to measure; for almost all developing countries, no current direct estimates of the maternal mortality ratio or trends exist. A new joint effort by the World Health Organization (WHO), the United

Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA), and the World Bank in 2007 will update the data with 2005 estimates. In the absence of direct estimates, monitoring of progress toward the goal has focused on one of the key determinants of maternal mortality: the presence of a medically skilled attendant at the time of delivery.

The latest survey data show that in 27 out of 32 developing countries (84 percent) the proportion of deliveries with a skilled attendant has increased in recent years (table 2.3). Morocco, Nicaragua, Indonesia, and Egypt registered especially impressive progress. Survey data also show that differences in access to skilled delivery care between the poorest and richest quintiles in most countries present larger equity gaps than for any other health or education service. Even in some of the poorest low-income countries, such as Benin, Cameroon, Mali, Mozambique, Zambia, or Zimbabwe, skilled attendance at delivery for the upper income groups reaches levels near or above 90 percent, several times the coverage for the poorest quintile. Finally, the surveys show that what constitutes “skilled attendance at delivery” varies across countries. In Jordan, for example, where over 95 percent of women deliver with skilled

**TABLE 2.3** Progress in assisted births

Country	Births attended by a medically trained person (percent of all births)				Absolute change between surveys
	Percent	Year	Percent	Year	
<b>Strong performers</b>					
Morocco	30.8	1992	62.6	2004	31.8
Nicaragua	64.6	1997	89.7	2001	25.1
Indonesia	49.1	1997	66.2	2003	17.1
Egypt, Arab Rep. of	46.2	1995	60.9	2000	14.7
Benin	63.9	1996	72.9	2001	9
India	34.3	1993	42.4	1999	8.1
Vietnam	77	1997	85.1	2002	8.1
Namibia	68.2	1992	75.5	2000	7.3
Burkina Faso	30.9	1998	37.8	2003	6.9
Guatemala	34.8	1995	40.6	1998	5.8
<b>Poor performers</b>					
Haiti	46.3	1995	24.2	2000	-22.1
Peru	56.4	1996	46.9	2000	-9.5
Zambia	46.5	1996	43.4	2001	-3.1
Kenya	44.4	1998	41.6	2003	-2.8

Source: Demographic and Health Surveys.

care, 63 percent of deliveries take place with the assistance of a doctor, and 37 percent with a midwife or nurse, but virtually all occur in hospitals. But in Benin, while a relatively high 73 percent of deliveries are assisted, only 5 percent of these are with a doctor, and 23 percent of births occur at home.

Maternal deaths most commonly result from three critical sources of delay in accessing appropriate emergency care during pregnancy and delivery: (1) inadequate recognition of the need for care; (2) difficulty in getting to facilities (due to lack of transportation, poor roads or high costs); and/or (3) lack of adequate treatment once a facility has been reached (Thaddeus and Maine 1994). Box 2.3 summarizes new research from Ghana, Kenya, and India which sheds light on the relative contributions of these “three delays” to poor maternal outcomes, and how their underlying causes can differ in different country contexts.

One country whose progress in reducing maternal mortality has been researched is Honduras. In the 1990s Honduras adopted a

four-pronged strategy to reduce its high maternal mortality rate: (1) training traditional birth attendants in how to recognize high-risk pregnancies and deal with obstetric emergencies; (2) increasing health personnel and birthing centers in remote areas; (3) strengthening emergency obstetric care in rural health centers and district hospitals; and (4) improving emergency transportation and communication systems. At the same time, the country introduced improved surveillance to establish the cause of maternal deaths in all recorded cases. The successful implementation of this strategy is credited with reducing maternal mortality across Honduras by more than 50 percent over the past decade, including in the most remote and poorest areas (Danel 1999; Ransom and Yinger 2002).

### MDG6—AIDS, Tuberculosis, and Malaria

**HIV/AIDS.** No single MDG has galvanized as much global attention and financial support since 2000 as the goal of “halting and reversing the spread of HIV/AIDS.” What



### BOX 2.3 Preventing maternal mortality: Findings from three countries

To examine the relative contribution of the “three delays” to poor maternal care, the World Bank collaborated with research institutions in Ghana, India, and Kenya to carry out in-depth studies in very different settings: in northern Ghana (Kassena-Nankana District, a predominantly rural area, with population scattered and mainly dependent on subsistence farming); in Kenya, the Nairobi slums of Korogocho and Viwandani; and in Uttar Pradesh, India’s most populous state, with a predominantly rural population and low status of women. Household survey data, verbal autopsies, facility surveys, and in-depth interviews were used to analyze the three delays.

In Ghana, although almost all women saw a midwife or nurse for antenatal care, the majority (59 percent) eventually delivered at home with a traditional birth attendant. Of the women who developed complications, about half recognized the problem as serious within a day, but 36 percent took three days or more. Sixty percent of these women reported the distance and travel time to a health facility as the major constraint to seeking service there. Three percent of women delivered while en route to a health facility, indicating the difficulty of getting to facilities in time. But women who did deliver in health facilities gave strongly positive opinions of the quality of obstetric care they received, notwithstanding reports from health workers at these facilities that they lacked adequate staff, supplies, and equipment.

In the Nairobi slums, 70 percent of women delivered with the assistance of a health professional—a substantially higher rate than in other parts of Kenya. Of the 62 percent who experienced obstetric complications, four-fifths made the decision to seek care within 24 hours, and distance and transportation were not major obstacles. In focus groups, women reported that the overriding factor against seeking care is cost. About 62 percent of women paid more than 1,000 KSh (\$14) for delivery care in health facilities, and the requirement for a cash deposit prior to admission was an important obstacle. In Nairobi, women with obstetric complications frequently did not receive care promptly—owing to long queues, unavailability of health professionals, the demand for a deposit, or lack of equipment—and at times were sent to another health facility as a result. In contrast to Ghana, a large majority of Kenyan women reported poor treatment by health personnel, especially nurses and midwives at facilities.

In Uttar Pradesh, India, antenatal care is nominally free of charge at government health facilities, but just 40 percent of women utilize it. Only 21 percent of women deliver at a health facility, and a higher share of these are at private facilities than government ones. The survey showed that the majority of women thought antenatal care or delivery with the assistance of skilled medical attendants was unnecessary; birth was viewed as something that should normally take place unassisted at home. Unlike rural Ghana, access factors such as long distance to health facilities and difficulty in obtaining transport were less frequently cited reasons for not delivering at the health facilities. However, 40 percent of the facilities indicated that they were not equipped to deliver basic emergency obstetric care, given limited staffing and equipment. While the study pointed to the need to improve the quality of government health facilities, it also suggests the need for outreach to women about the importance of professional assistance at births, since obstetric complications are unpredictable.

*Source:* Mills and others 2007.

has been achieved over the past six years—especially the expansion of treatment across the developing world—stands as a tribute to the power of concerted global action. But what remains to be done is also substantial—partly because of the unique nature of AIDS, a disease that mutates faster than any

known virus and radiates along myriad societal transmission fault lines, but also because of the inherent challenges of rapidly scaling-up global action and funding in any area.

From just a few localized spots of infection just 25 years ago, AIDS has spread to nearly every country in the world, and by end-2006



an estimated 39.5 million people were living with HIV, an increase of 2.6 million compared with 2004 (figure 2.2). Behind these numbers is an increasingly heterogeneous epidemic ranging from Sub-Saharan Africa, where a mature, largely heterosexually transmitted epidemic has slowed its spread, to rapidly growing epidemics in Eastern Europe and Central Asia, linked to high-risk behaviors in segments of the population.

Globally, financial resources available for implementing the AIDS response have increased from \$1.6 billion (about 20 percent of total development assistance for health) in 2000 to nearly \$8 billion (60 percent of total health support) in 2006. In numerous low-income countries, external support earmarked for AIDS is half or more of the entire public health budget. However, external funding is concentrated in relatively few developing countries, and large unmet needs remain. What has been achieved, and what have we learned to guide future action? From the vantage point of 2007, five cautious conclusions can be drawn:

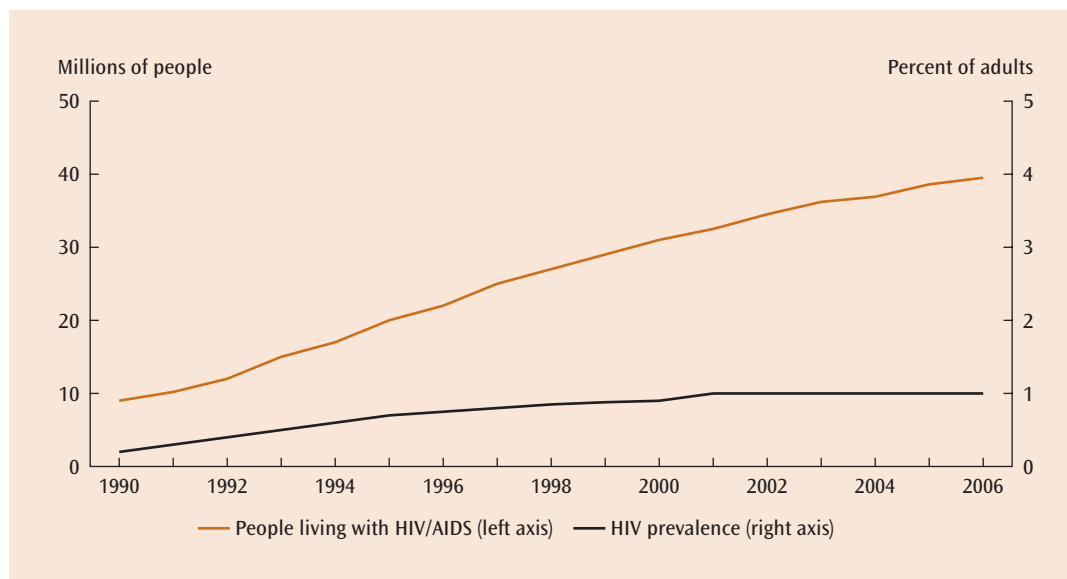
- **Reversing the spread of HIV/AIDS is possible.** The first signs of declining HIV

prevalence at the national level have been recorded in eight countries at the national level (Kenya, Uganda, Thailand, Zimbabwe, Barbados, Bahamas, Cambodia, and Thailand) and in urban areas in six other countries (Burkina Faso, Côte d'Ivoire, Ethiopia, Ghana, Malawi, and Rwanda). In India, declines have been recorded in four southern states. In Latin America and the Caribbean new infections in 2006 remained at about the same level as in 2004.

The underlying drivers of the declines are not fully understood, but it is likely that they reflect a different mix of factors in each context. It also seems likely that this progress is easily reversible, so there is no cause for complacency. Recent surveillance data from Uganda—one of the first of the above countries to show signs of declining prevalence—suggest that condom use has started to decline, numbers of sexual partners have increased, and seroprevalence may again be increasing in some sites.

In most of the countries, the natural course of the epidemic may be playing the most important role in reducing the number of new infections; once epidemics reach

**FIGURE 2.2** Global HIV/AIDS epidemic, 1990–2006



Source: UNAIDS, AIDS epidemic update, 2006.

a critical scale, “burnout” occurs since there are fewer uninfected individuals left to infect. But in the countries where prevalence declined, there is also evidence of behavioral changes, including reductions in the number of partners, increased use of condoms, and delays in the age of first sexual intercourse (UNAIDS 2006).

- **Treatment is effective in the developing world.** When the MDGs were adopted, there was glaring global inequity in the chances an AIDS patient had of accessing treatment depending on “which world” he or she lived in: in 2001, only 240,000 people were on antiretroviral treatment (ART) of an estimated 5 million people in the developing world with advanced HIV disease who needed treatment. By mid-2006 there were 1.6 million people on treatment.<sup>1</sup> Botswana, Kenya, South Africa, Uganda, Rwanda, and Zambia have made strongest progress, and were among the 14 countries providing treatment to at least 50 percent of those in clinical need by June 2005 (UNAIDS and WHO 2005).

It is now confirmed that the same gains in life expectancy achieved in high-income countries are attainable in resource-scarce environments. Adherence to antiretroviral regimens in developing-country settings is also as high as in high-income countries (Mills and others 2006). Large cohort studies have examined survival in over 27,000 patients from developing and industrialized countries and found similar levels of viral suppression and declines in mortality (Stringer and others 2006). UNAIDS estimates that expanded provision of antiretroviral treatment resulted in a gain of 2 million life-years in low- and middle-income countries in 2005 (UNAIDS 2006).

Globally, the WHO goal of putting 3 million people with AIDS on ART by end-2005 was not reached, but numbers are increasing rapidly. More important, access to treatment has not only improved health and saved the lives of numerous adults but also helped restore the well-being of other household members, especially children.

A recent analysis found that, on average, within six months of starting treatment, patients were able to increase their working hours substantially (Thirumurthy, Graff-Zivin and Goldstein 2005). Owing to increased work, even for low-income day laborers, the study estimated that the incremental costs of treatment were fully covered by the higher income generated, and there were other social benefits accruing to the household.

- **Prevention efforts are inadequate.** Prevention will make the difference in the global trajectory of the AIDS epidemic. While 3 million people died of AIDS in 2006, there were 4 million new cases of infection—over 70,000 per week. Until progress is made in reducing this number substantially, the battle against AIDS will continue uphill. Coverage of prevention efforts is too low almost everywhere, especially among populations most at risk. A recent survey of more than 10,000 people living with HIV in 69 countries found that less than 1 percent of adults aged 15–29 had utilized voluntary counseling and testing and only about 11 percent of pregnant women had access to services for preventing mother-to-child transmission (Stover and Fahnstock 2006). Prevention efforts aimed at high-risk populations only reached an estimated 33 percent of commercial sex workers, 34 percent of prisoners, 9 percent of homosexuals, and 8 percent of injecting drug users, far short of the coverage of over 60 percent that is needed for effective impact. Finally, although some 5 billion condoms were distributed in 2005, survey data suggest that this covered only an estimated 20 percent of risky sex acts.
- **More evaluation of “what works” in different contexts to prevent HIV is needed.** While many approaches to prevention have been tried, few approaches have been rigorously evaluated, and some evaluations have revealed unimpressive or mixed results for programs previously believed to be effective. While a WHO review found that 13 of 23 evaluations of school-based

HIV education showed some beneficial impact, some of the most rigorous evaluations—randomized controlled trials in Western Kenya (Duflo and others 2006) and Mexico (Walker and others 2006)—found no evidence that HIV education courses in secondary schools affected key outcomes such as condom use. However, these and other studies have helped to identify other interventions that could be cost-effectively scaled up. Dupas (2005) found that informing young Kenyan girls about the higher risk of infection they face when engaging in sexual relationships with older men had a positive impact; one year after the intervention, girls were 65 percent less likely to have gotten pregnant by adult partners. A randomized experiment conducted in rural Malawi found that knowing one’s serological status led to only small behavioral changes—suggesting that universal HIV testing might not be the most cost-effective way of **preventing** infections (Thornton 2005). However, offering an incentive equal to about one-tenth of a rural laborer’s daily wage increased the demand for testing, overcoming stigma and offsetting opportunity costs of time. There may also be scope for incentives for other positive health behaviors, such as avoiding risky behaviors or adhering to ART.

- **The world has much more to do in fighting HIV.** Treatment access has expanded, but it still reaches only one-quarter of all people with AIDS in the developing world. Prophylactic care for opportunistic infections also only reaches about one patient in four. Effective HIV prevention strategies need to be scaled up aggressively in all parts of the world—and these investments would yield high returns. A 2006 study calculated that large-scale and effective prevention strategies implemented today in 125 low- and middle-income countries could avert more than half of the 28 million new infections projected to occur between 2005 and 2015—and by 2015 could save \$24 billion per year in associated treatment costs

(Stover and others 2006). The experience of Brazil and Thailand is instructive; early and determined government action focused both on preventing HIV in high risk groups and making ART affordable has kept both countries on a trajectory of very low prevalence.

To meet the needs of all target populations and truly reverse the epidemic, UNAIDS estimates that \$22 billion per year in external funding is required, almost a tripling of the current level. Yet even the current levels of external financing for AIDS have had major effects on the allocation of health resources in developing countries and placed strain on scarce factors of supply and costs.

In this environment, several areas stand as urgent priorities for action. The first is better harmonization and alignment of donor efforts. The “three ones” platform—ensuring that in every country there is only one national AIDS leadership body, one national plan, and one system for monitoring progress—has made some headway. Key agencies are working on an explicit division of labor and better coordination in providing technical support; there has been an increase in joint donor reviews and supervision visits and agreement on a harmonized set of HIV indicators. But there is still much more to be done. The second priority is strengthening health systems in developing countries to enable them to absorb additional funding and deliver expanded services efficiently. Third is the imperative of scaling up effective, evidence-based prevention strategies.

**Malaria.** Malaria is both preventable and curable, but each year an estimated 300 to 500 million cases of malaria result in an estimated 1.2 million deaths. The majority of malaria deaths are among children, and an estimated 80 percent occur in Sub-Saharan Africa. Malaria also causes severe anemia and maternal illness, and contributes to low birth weight, a leading risk factor for child

morbidity and mortality. In most countries in Africa south of the Sahara, malaria cases are diagnosed and reported based on clinical grounds, such as fever, without laboratory testing. Since fever is common to many infectious diseases, misdiagnoses are common and the actual number of cases is unknown. As a result, malaria incidence and mortality data by country generally do not accurately reflect the true scope of the disease, and are not reliable for monitoring trends. Instead, use of insecticide-treated bednets is tracked to monitor whether countries are addressing the disease through an effective preventive strategy. Table 2.4 shows that coverage rates are still low in many countries.

**Drug resistance and a global subsidy for antimalarial drugs.** One reason for the resurgence and increased burden of malaria is the development of resistance to traditional first-line antimalarial treatments, such as chloroquine (CQ) and sulfadoxine pyrimethamine (SP or Fansidar) by the parasite that causes a severe form of malaria. In some areas of

Southeast Asia an artemisinin-based combination therapy (ACT) has been successful in treating and reversing the spread of drug-resistant malaria, and WHO recommends use of ACT when new drugs are required. But ACTs are 10–20 times as expensive as first-line treatments, and there is a risk that malaria's toll could rise even higher if resistance to artemisinin were to spread. The challenge is thus to facilitate the use of artemisinins where appropriate while preserving their effectiveness for as long as possible. Arrow and colleagues (2004) and a separate study by the World Bank and the Roll Back Malaria (RBM) Partnership concluded that actions to delay the development of resistance to ACTs create a benefit for all—"a global public good." This would justify a sustained global subsidy for ACTs, to ensure that artemisinins are used with other antimalarials, and used judiciously.

With support from the Netherlands and the RBM Partnership, the World Bank is leading an effort to translate this proposal for a high-level global subsidy into reality. The Bank is facilitating the analysis, consultations, and the design of possible management arrangements for the subsidy, which could be hosted in an existing agency as appropriate.

**The Malaria Booster Program.** In 2005 the World Bank renewed its commitment to the Roll Back Malaria Partnership, and the Africa Region launched the Malaria Booster Program to support country-level efforts to deliver concrete and measurable results. Over the next five years, the Bank expects to commit up to \$500 million of International Development Association (IDA) resources to support the program in approximately 20 countries. As of mid-December 2006, 11 projects totaling \$357 million had been approved—funding malaria-control projects in 10 countries and a subregional multisector project in the Senegal River Basin. The 11 projects are expected to deliver at least 19 million long-lasting insecticide-treated bednets, primarily to young children and pregnant women, and about 29 million doses of ACT, primarily to children.

**TABLE 2.4** Use of insecticide-treated bednets by children under five

	Poorest quintile	Richest quintile	Population average
Colombia 2005	85.2	73.4	79.2
Cambodia 2000	57.3	80.7	67.5
Chad 2004	67	71.2	55.8
Mali 2001	34.4	48	38.3
Tanzania 2004	17.8	71.3	33.9
Benin 2001	24.7	57	33.8
Burkina Faso 2003	25	30.1	23.3
Zambia 2001	6.4	29.8	17.7
Kenya 2003	8.1	36.3	16.7
Ghana 2003	19.6	10.8	16.2
Cameroon 2004	5	21.5	13.7
Mozambique 2003	4.7	20.9	10.1
Uganda 2000	6.3	23.3	9.4
Nigeria 2003	11	3.3	7.1
Namibia 2000	11.3	5.5	6.6
Rwanda 2000	1.8	24.7	5.8
Zimbabwe 1999	0.2	7.3	2.9

Source: Demographic and Health Surveys.

**Tuberculosis.** There were 9 million new TB cases and approximately 2 million TB deaths in 2004, making this the second deadliest communicable disease, after AIDS. As table 2.5 shows, while TB incidence was stable or falling in five out of six World Bank regions, it is growing at 0.6 percent per year globally, owing to rising incidence in Sub-Saharan Africa. People latently infected with TB are at a much greater risk of developing active TB if they are concurrently infected with HIV, and this has contributed to dramatically worsening TB incidence in southern African countries and Kenya (table 2.6). In the Europe and Central Asia Region, incidence per capita increased during the 1990s, but peaked about 2001, and has since fallen. The main strategy to combat TB is careful treatment with a protocol called Directly Observed Treatment, Short-course (DOTS). In 2004, DOTS was being used in 183 countries, with 100 percent population coverage in 9 of 22 high-burden countries, and almost complete in 5 others. By the end of 2004, 83 percent of the world's population lived in countries, or parts of countries, covered by DOTS. High-burden countries with high levels of DOTS coverage, such as Indonesia and Peru, have shown large decreases in TB incidence in recent years (table 2.6).

Tuberculosis can usually be treated with a course of four standard, or first-line, anti-TB drugs, which cost \$14–18 per patient (Stop TB Partnership 2006). If these drugs are misused or mismanaged, however, multidrug-resistant TB (MDR-TB) can develop, which must be treated with more expensive second-line drugs, which have more side-effects and take longer to work. In September 2006, WHO detected a deadly new strain of the bacteria—called extensively drug-resistant (XDR) TB—in Kwazulu Natal Province, the epicenter of South Africa's HIV/AIDS epidemic. XDR-TB is resistant to a number of first- and second-line anti-TB drugs, and treatment options are very limited. Because of constraints on equipment and skills for diagnosis in poor countries, the global distribution of XDR-TB is not known with accuracy at the moment. However, WHO estimates that there were almost

**TABLE 2.5 TB incidence trends by region**

Region or classification	Incidence of tuberculosis (per 100,000 people)	
	1990	2004
East Asia & Pacific	161	138
Europe & Central Asia	51	83
Latin America & Caribbean	103	64
Middle East & North Africa	66	57
South Asia	180	177
Sub-Saharan Africa	162	363
High income	28	17
Low income	177	224
Lower middle income	134	115
Upper middle income	69	114
World	124	140

Source: WHO.

**TABLE 2.6 Changes in TB incidence, 1990–2004**

Country	Incidence of tuberculosis (per 100,000 people)		Absolute difference 1990 and 2004
	1990	2004	
<b>Increasing incidence</b>			
Swaziland	263	1,226	963
Zimbabwe	135	674	539
Lesotho	179	696	517
Kenya	108	619	511
Namibia	260	717	456
South Africa	268	718	450
<b>Declining incidence</b>			
Peru	394	178	–215
Haiti	484	306	–178
Maldives	148	49	–99
Indonesia	343	245	–98

Source: WHO.

half a million cases of MDR-TB worldwide in 2004, and MDR-TB can presage XDR-TB. WHO is leading international efforts to address the XDR-TB problem in collaboration with countries and the Stop TB Partnership.

## MDG7—Water and Sanitation

MDG7 “Ensure Environmental Sustainability,” includes a target that is interlinked

### BOX 2.4 Measuring health progress

The health MDGs, and especially maternal mortality and AIDS, malaria, and tuberculosis (TB) goals, are difficult to monitor, owing to the absence of vital registration and disease surveillance systems in many countries. The Health Metrics Network (HMN) is a global network launched in 2005 to help developing countries improve the availability and quality of their health statistics. Partners include developing countries, multilateral agencies (including the World Bank), bilateral donors, the Gates Foundation, and the major global partnerships.

While many donors have supported monitoring and evaluation units (M&E) to report on specific project activities, or have supported the DHS and other household surveys, they have never before worked together to strengthen health information systems in the developing world. Improving countries' capacity to establish vital registration, disease and risk factor surveillance, national health accounts, and regular household surveys promises over time to reduce the costs of generating the information that both policy makers and donors need and avoiding uncoordinated M&E activities.

The HMN has developed a common framework setting out the standards, policies, capacities, and processes needed at the country level. The framework also serves as a diagnostic tool to establish a baseline of currently available health statistics, and provides a roadmap for development and implementation of health statistics strengthening. During 2006, some 40 countries received grants from the HMN to carry out baseline assessments using the common framework. The network is currently developing time-bound plans for strengthening health information systems in an initial batch of countries.

*Source:* Health Metrics Network.

to progress on most of the human development MDGs—the target of halving by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation. Hygiene, sanitation, and water supply have important influences on child health, schooling attendance, gender equity, and other human development outcomes. Hand-washing initiatives have been shown to reduce the probability of contracting diarrheal diseases—an important cause of child morbidity and mortality—by 44 percent, sanitation improvements produced a 32 percent decrease, and improved water supply resulted in a 25 percent reduction (Fewtrell and others 2005). A recent international poll by the *British Medical Journal* chose sanitation as the greatest medical breakthrough since the 1840s.

Globally, there has been significant progress on water supply; access to improved water sources has increased from 73 percent in 1990 to 80 percent in 2004 but only Latin

America and South Asia are considered on track to reach the target (and about 26 percent of developing countries lack adequate data to judge).<sup>2</sup> Sub-Saharan Africa is the region most seriously off track, but there are also some promising trends: Malawi and Namibia have reached the MDG target; 17 of 36 African countries for which data are available are on or almost on track; and 6 of the 10 countries making fastest progress globally are low-income African countries (table 2.7).

There has been progress on sanitation too, but not enough. Globally, access to improved sanitation has increased from 37 percent in 1990 to 52 percent in 2004—which is not on pace to the goal of 69 percent coverage by 2015. Only two regions (East Asia and the Pacific and Latin America) are on track for basic sanitation. While the South Asia region is not on track given its very low starting base, large gains in access have been made, especially in India, where sanitation coverage



more than doubled between 1990 and 2004. About 46 percent of all developing countries are considered off-track to the sanitation target, while another 34 percent have inadequate data. Progress in Africa has been slow. Only one of the 32 African countries for which data are available is on track. This makes the performance of that country—Senegal—all the more noteworthy (table 2.8).

The three largest challenges in achieving the water supply and sanitation MDG targets are: (1) ensuring that sanitation gets sufficient attention in national investment programs; (2) reducing rural-urban disparities in the access of water supply and sanitation services; and (3) ensuring the sustainability of investments already made.

Access to sanitation tends to lag behind water supply, which has historically been accorded a higher priority both by governments and households. The lag is due to a number of factors, including limited demand from households, institutional fragmentation, poor coordination, and limited capacity to address the problem at scale. While the poorest quintiles in every region have the least access to water and sanitation, the biggest gaps in access fall along the rural-urban divide. In developing countries, 92 percent of the urban population has access to improved water sources and more than 73 percent to sanitation, while coverage in rural areas is 70 percent for access to water and only 33 percent for basic sanitation. The rural-urban disparities are especially sharp in Africa and South and East Asia.

A major lesson of the past decade is that water supply and sanitation investments are not sustainable unless adequate attention is paid to the institutional context and performance of service providers. Principles for a sound operating environment include the use of demand-responsive approaches in service provision, managing services at the lowest appropriate level, adherence to cost recovery policies where necessary in combination with transparent subsidies targeted to the poorest users, appropriate technologies and standards to ensure cost effectiveness of investments,

**TABLE 2.7 Access to improved water is growing**

Countries	Percent of population with access to improved water sources		Average annual percentage point increase, 1990–2004
	1990	2004	
<b>Strong performers</b>			
Malawi	40%	73%	2.4%
Namibia	57%	87%	2.1%
Paraguay	62%	86%	1.7%
Burkina Faso	38%	61%	1.6%
Central African Republic	52%	75%	1.6%
Ecuador	73%	94%	1.5%
Vietnam	65%	85%	1.4%
Ghana	55%	75%	1.4%
Eritrea	43%	60%	1.2%
El Salvador	67%	84%	1.2%
<b>Poor performers</b>			
Maldives	96%	83%	−0.9%
Uzbekistan	94%	82%	−0.9%
Algeria	94%	85%	−0.6%
Comoros	93%	86%	−0.5%

Source: WHO-UNICEF Joint Monitoring Program, Meeting the Drinking Water and Sanitation Target: The Urban and Rural Challenge of the Decade, 2006.

**TABLE 2.8 Access to improved sanitation is growing**

Countries	Percent of population with access to improved sanitation		Average annual percentage point increase, 1990–2004
	1990	2004	
<b>Strong performers</b>			
Guatemala	58%	86%	2.0%
Ecuador	63%	89%	1.9%
Dominican Republic	52%	78%	1.9%
Vietnam	36%	61%	1.8%
Senegal	33%	57%	1.7%
Nepal	11%	35%	1.7%
Sri Lanka	69%	91%	1.6%
Paraguay	58%	80%	1.6%
Pakistan	37%	59%	1.6%
Benin	12%	33%	1.5%
China	23%	44%	1.5%
Mexico	58%	79%	1.5%
<b>Poor performers</b>			
Liberia	39%	27%	−0.9%
Burundi	44%	36%	−0.6%
South Africa	69%	65%	−0.3%

Source: WHO-UNICEF Joint Monitoring Program, Meeting the Drinking Water and Sanitation Target: The Urban and Rural Challenge of the Decade, 2006.



and a shift from sewerage systems to on-site sanitation and hygiene promotion programs. Different management models are appropriate for different country contexts and increasingly diverse management models are being successfully used in both the public and private sectors. Increasing use of public-private partnerships is another promising trend.

Despite its importance for directly supporting achievement of the WSS MDG and indirectly contributing to progress on health, education, and gender MDGs, ODA for water and sanitation declined significantly from the mid-1990s through 2002. Since 2003, assistance for WSS has begun to swing upwards again, but even in 2005 had not recovered to the 2000 level. In the past two years, efforts have been made to ramp up financing for WSS, especially for Africa. This has resulted in the recent establishment of the Africa Infrastructure Consortium, and the Rural Water Supply and Sanitation Initiative led by the African Development Bank. Although this is a positive development, given the long lead time for investments, it will be several years before new

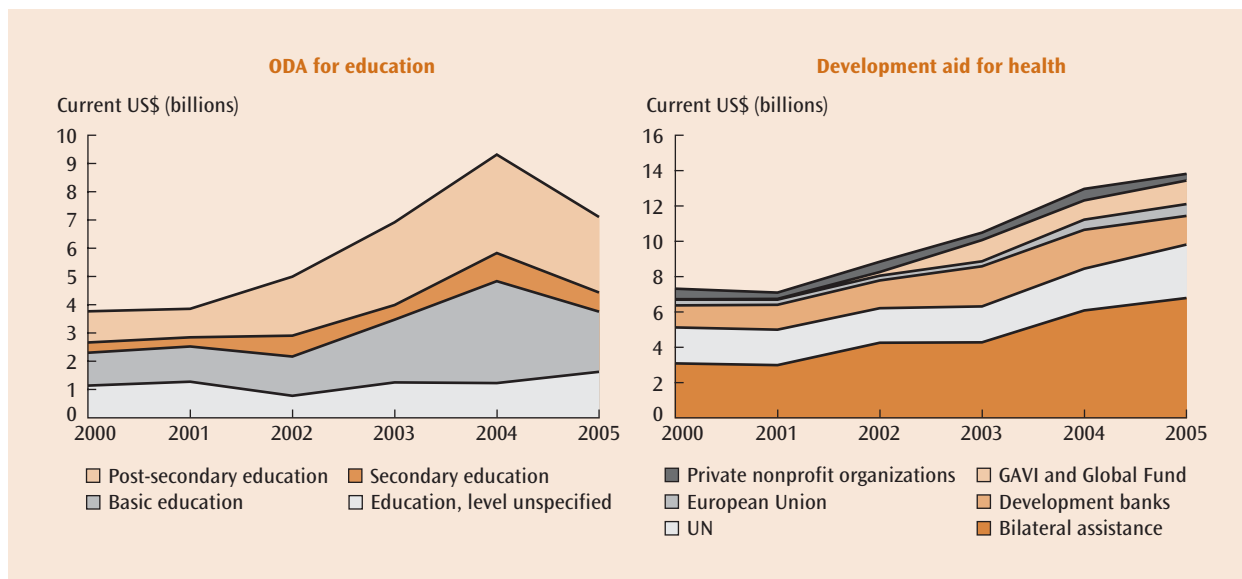
funding through these initiatives translates into improved access to water sources and sanitation, and faster progress on the WSS targets.

### Financing MDG progress

**External financing.** External financing for health and education has nearly doubled in real terms since the MDGs were adopted. While aid for health continued to rise from 2004 to 2005, education-related official development assistance commitments showed their first decline (figure 2.3). The decline reflects a drop in commitments for China and India, both of which received large commitments linked to new multiyear programs in 2004. On a sectoral basis, basic plus general education funding rose to 53 percent of the total volume, and the share for postsecondary education fell to 38 percent. Commitments for Sub-Saharan Africa increased, to 29 percent of the total volume. Education commitments are expected to increase again in 2007.

In health, much attention has been given to the expansion of private funding sources

**FIGURE 2.3** Development assistance for education and health, 2000–05



Source: OECD/DAC data.

over the past five years, with the Gates Foundation in particular increasing from about \$0.6 billion to \$1.2 billion per year in assistance, two-thirds of which is channeled to countries through global programs such as the Global Fund for AIDS, TB and Malaria (GFATM); and the Global Alliance for Vaccines and Immunizations (GAVI). But as can be seen from figure 2.3, a number of bilateral donors have increased their core assistance levels at least as strongly—the United States has more than doubled its health funding, reaching close to \$4 billion in 2005; Spain has also doubled its assistance; and France and Norway have quadrupled their official development assistance for health. A number of new financing modalities have also been established with support from bilaterals. In

contrast, support for health from multilateral development banks has been flat in real terms since 2000, most likely reflecting recipient countries' preference for grant funding over even highly concessional lending.

As large as the expansion of bilateral and private assistance has been, current support levels are still far short of the estimated financing needs to reach the health MDGs, the most conservative of which calls for \$25–50 billion per year in external support. There is also a growing imbalance between the volumes of funding mobilized for specific diseases and the core funding needs of health systems for scaling up basic service delivery. Multilateral development banks (MDBs) could potentially play a key role in the provision of “complementary”

### BOX 2.5 Innovative new financing mechanisms for health are getting off the ground

Along with mobilizing more funding, donors for health have worked since 2000 to improve aid quality and address market failures in the supply of global public goods for health through the development of innovative financing methods:

**The International Finance Facility for Immunization (IFFIm)** was designed to increase the stream and predictability of funding for health and immunization programs. A pilot for the larger International Finance Facility, the IFFIm mechanism converts donor pledges of off-budget commitments of future resources into funds available for near-term disbursement through bond markets. In 2006, \$1 billion was raised in an initial bond offering and channeled to GAVI, which is now committing these resources to country programs for the introduction of new vaccines and health system strengthening.

**Advance Market Commitments (AMCs)** for vaccines are financial commitments from donors to subsidize future purchases of yet-to-be-developed vaccines. AMCs were designed to increase the incentives for global drug companies to invest in research, development, and production of vaccines that would serve developing-country markets. The first AMC pilot is targeting pneumococcal vaccines, which could avert 1.6 million developing-country deaths a year. Donors will launch the AMC Pilot in February 2007, committing \$1.5 billion to support the purchase of pneumococcal vaccines through roughly 2019.

**UNITAID**, financed through a tax on airline tickets and other sources, was designed to provide a long-term, predictable funding stream for drugs and diagnostic kits to fight HIV/AIDS, TB, and malaria. In 2007, UNITAID is expected to receive \$300 million from ticket levies implemented in France, Chile, and 19 other countries including Brazil. UNITAID will work with global funds and agencies such as the Clinton Foundation on the supply side of the international pharmaceutical market—pooling orders, stimulating competition, and negotiating lower prices for drugs—as well as providing support for programs on the ground, mostly through the Global Fund. In 2007, UNITAID expects to supply drugs for 100,000 people in 16 countries, and to reach 130,000 children with an “HIV pediatric package” of drugs, diagnostic kits, and nutrition.

un-earmarked financing and technical support aimed at overall strengthening of health systems. However, the trend in MDB financing for health over the past several years has been flat.

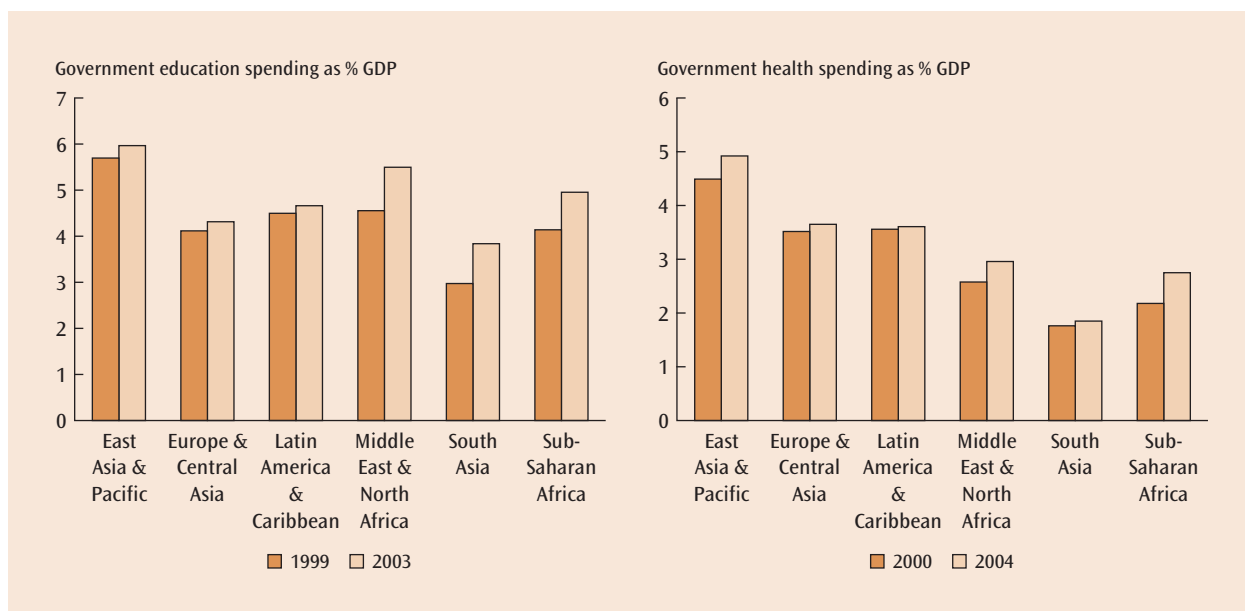
**Developing-country spending.** Government spending on health and education has grown as a share of the gross domestic product (GDP) in all regions (figure 2.4). The largest increase has been for education in South Asia—from 3 to 3.8 percent, driven by India—but the share of GDP devoted to education in that region still remains the lowest in the world. In both the Middle East and North Africa and Sub-Saharan Africa, education shares were already a relatively high share of GDP and they have increased further. At 5.5 percent and 5 percent of GDP, respectively, these two regions now trail only East Asia and the Pacific in the national fiscal priority given to education.

In health, spending shares increased in all regions except Latin America and the Caribbean. The largest increase was in Sub-Saharan Africa, where government health spending as a

percentage of GDP rose by 26 percent between 2000 and 2004.<sup>3</sup> However, the region still trails all other regions except South Asia in its spending share for health.

**Donor harmonization.** Efforts to improve the “quality” of donor assistance are on very different trajectories in education and health. In education, an increasing number of developing countries are joining the EFA-FTI, which the OECD/DAC Forum recently ranked as one of the most effective among global programs in promoting donor harmonization and aid alignment with country-led priorities. Core principles of the FTI are to unify donors in reviewing and endorsing a credible education sector strategy for each FTI country and committing development partners to align aid with that framework. Off-plan and off-budget support are not permitted. FTI donors have also been making progress on the ground in implementing the Paris Harmonization accords: they have reduced the number of separate donor missions, increased their use of country systems, and pooled their financing. The review paper

**FIGURE 2.4** Developing countries are devoting more national resources to education and health



Sources: UNESCO Institute of Statistics; WHO.

cited earlier concluded that harmonization progress under the FTI was real, significant, and a major achievement of the initiative to date (World Bank 2006).

In health, progress has been largely based on country-specific efforts, and there is no comparable organizing entity for unifying donors around coherent national strategies. Previous GMRs have documented the “verticalization” of global support for health over the past seven years and growing concerns about transactions costs, coordination failures, and poor alignment with recipient countries’ national health priorities. A 2006 case study of Rwanda, whose strong national commitment to achieving the health MDGs and innovative policies have attracted large increases in donor funding, provided some graphic examples of the difficulties recipient countries face in achieving policy coherence, aligning aid to sectorwide financing needs, and mapping volatile annual or biannual aid commitments onto long-term recurrent fund-

ing needs (see box 2.6.) A recent analysis of Ethiopia confirmed similar patterns.

The global health community has acknowledged these issues at successive international fora. In 2004–05 WHO and the World Bank convened a *High-Level Forum on the Health MDGs* (HLF) to examine aid effectiveness in health. Major issues highlighted by the HLF included poor alignment of aid with government priorities; the volatility and short-term nature of many commitments; harmonization and alignment issues created by the large number of different donors in health, particularly Global Health Partnerships; and the need for closer monitoring of the impact of increased general budget support on funding available for health. Perhaps the most important outcome of the HLF is the development of a set of Best Practice Principles for Engagement of Global Health Partnerships at the Country Level—based on the Paris Declaration—which are now being implemented by major health partnerships. Other contributions include

### BOX 2.6 Managing aid for health in Rwanda

Rwanda has made impressive progress in health over the past several years, with innovative reforms, sustained implementation and increased domestic spending supported by burgeoning donor support: the health sector share of total government spending grew from 2.5 percent in 1998 to 10 percent in 2005. By 2004, donor grants represented about half of total government spending in Rwanda, but this figure actually underestimates the importance of foreign aid, because of large off-budget funding, especially in the health sector. There is no question that the current partnership between the government and donors is supporting the country’s progress. But a recent review of Rwanda’s development assistance for health documented some of the issues in aid delivery that the government must navigate in translating aid resources into results (Republic of Rwanda 2006).

The first is the challenge of achieving policy coherence—and even basic fiscal monitoring—given that only 14 percent of total donor support for health is channeled through the budget of the Rwandan Ministry of Health or through local governments and health districts (12 percent). The remaining 74 percent of aid is channeled by donors directly to NGOs or their own-managed projects. This aid may be effectively used: even the government has recognized the efficiency of contracting services to NGOs. The issue is that it is difficult for the Ministry of Health—which remains responsible for health outcomes in the country—to account for, or track, the total volume of health spending.

A second issue is alignment: while Rwanda is trying to implement a major reform of its overall health delivery system, out of total on-budget official development assistance to the health sector

*continued*

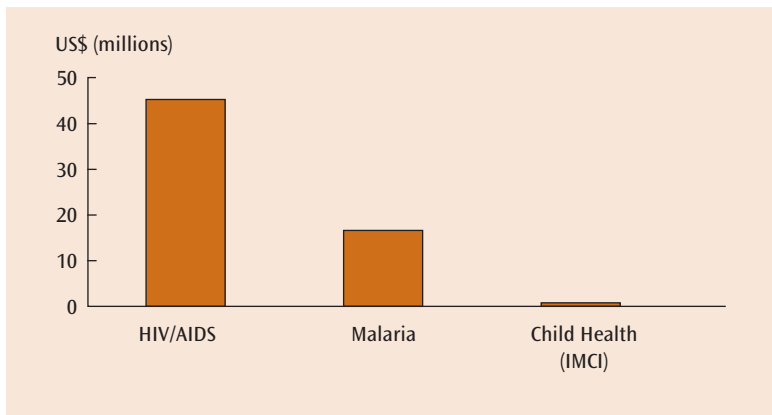
### BOX 2.6 Managing aid for health in Rwanda (*continued*)

in 2005 of \$75 million, \$46 million was earmarked for HIV/AIDS, \$18 million for malaria, and only \$1 million for child health. Although external funding for HIV/AIDS is still short of estimated needs, it far exceeds support available for other health priorities—although some HIV/AIDS funding supports facilities upgrading that has broader benefits.

A third issue is volatility: much of the assistance for Rwanda, like other countries, reflects commitments from bilateral donors that are for 1–2 years at most—although the United Kingdom is a notable exception. This leads to substantial variations in funding levels from year to year, and inhibits long-term planning. In two areas in particular—national decisions to scale-up health service provision by training and hiring more doctors and nurses, and the expansion of AIDS patients on antiretroviral treatment—Rwanda and other governments currently incur major risks of sustainability.

Finally, the Rwanda case illustrates, from a country’s viewpoint, the disparity between funding available for vertical health programs and other development priorities. The report notes that “spending on health has increased markedly in recent years...(but) infrastructure and agriculture have been relatively neglected. Major investments in the road network are needed to support economic growth and poverty reduction. Major investments are needed in energy and in water and sanitation.” While such multisectoral investments can have important effects on human development outcomes, the current aid architecture makes it difficult for countries to allocate resources efficiently across sectors to capture these complementarities.

#### On-budget donor assistance to the health sector in Rwanda, 2005



Source: Republic of Rwanda, 2006.

analyses of the challenges of scaling up service delivery, including human resource constraints, and the “fiscal space” for sustainable health financing.

Tanzania and Uganda are good examples of country leadership in pulling health donors

into coordinated sectorwide approaches (SWAps). The Rwandan government has also recently developed an “Aid Policy and a Joint Agreement”—a compact to be signed with development partners—as part of the new Economic Development and Poverty Reduc-

tion Strategy in 2007. Elements of the compact include donors' agreement that all aid will be included in the government budget, and a stipulation that aid projects not meeting this requirement will only be accepted if they are sustainable. Donors have also been asked to assess how well their practices align with the draft policy, and to discuss all planned activities with the government. Resource flows to the sector will be through a SWAp. Donors providing budget support will be guided by a new Partnership Framework for Harmonization and Alignment of Budget Support.

### Fragile States

Fragile states or low-income countries under stress (LICUS) account for 9 percent of the population in developing countries but 27 percent of those living on less than US\$1 per day. These countries are least likely to achieve

the MDGs: almost one-third (31 percent) of all child deaths and 29 percent of all 12-year-olds who fail to complete primary school in developing countries are in fragile states. As table 2.9 shows, on virtually every MDG, fragile states account for a disproportionate share of the world's people who suffer from poor outcomes and poor services. Only two of the 35 states considered fragile in 2005 are on track to reach the child mortality MDG: Timor-Leste and Lao PDR. And 25 percent of the countries where child mortality rates are actually worsening are fragile states.

Even when compared with other low-income countries, the performance of fragile states is considerably weaker; as figure 2.5 shows, child mortality in fragile states over the past 15 years has remained higher and progressed more slowly than in other low-income countries.

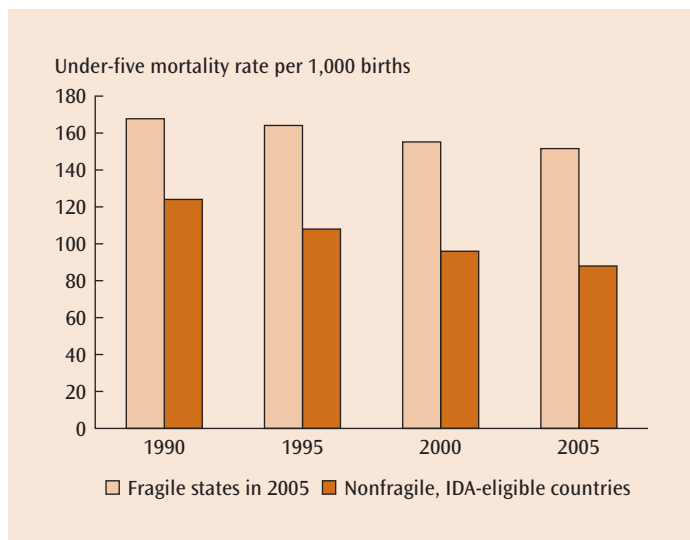
Primary completion rates in fragile states also trail those of other low-income coun-

**TABLE 2.9** Fragile states lag most on MDGs

MDG indicator	Millions of people		
	Total developing countries	Total fragile states	Percent of total fragile states
<b>Total population</b>	<b>5,427</b>	<b>485</b>	<b>9%</b>
<b>MDG1—Poverty and hunger</b>			
Underweight children	143	22.7	16%
<b>MDG2—Universal education</b>			
Children of relevant age that did not complete primary school in 2005	13.8	4	29%
<b>MDG4—Under-five mortality</b>			
Children born in 2005 not expected to survive to age five	10.5	3.3	31%
<b>MDG5—Maternal health</b>			
Unattended births	48.7	8.9	18%
<b>MDG6—Diseases</b>			
HIV+	29.8	7.2	24%
TB deaths	1.7	0.34	20%
<b>MDG7—Environmental sustainability</b>			
Lacking access to improved water	1,083	209	19%
Lacking access to improved sanitation	2,626	286	11%

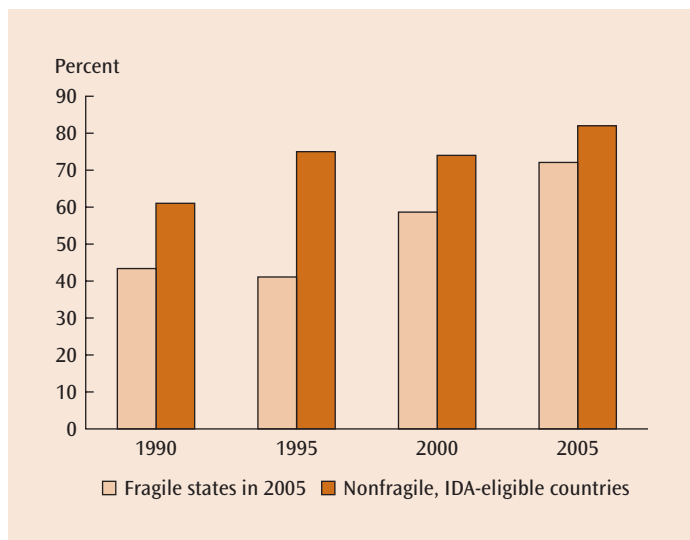
Source: World Bank staff estimates.

**FIGURE 2.5** Child mortality is higher and showing less progress in fragile states



Source: World Bank.

**FIGURE 2.6** Primary completion rates are lower in fragile states, but improving



Source: UNESCO.

tries (figure 2.6), but the gap is not as great. Indeed, the data suggest that at least under some circumstances, such as restoration of primary school functioning after conflicts, it is possible for fragile states to rebound impres-

sively quickly. In 7 out of 12 cases studied in a 2005 review, primary school enrollments were higher in the year after conflicts than in the year before they began—including in countries where 50 percent or more of schools were damaged or destroyed by hostilities. (Buckland 2005). The “surprising resilience” of primary education systems is attributed to a number of factors: the strong priority given to schooling by communities, which often strive on their own to keep schools open during conflicts; the high and immediate priority education typically receives from donors and countries once conflicts end; and the opportunities for education reform that postconflict settings can present. Since 1995, buoyed by the exceptional progress in Cambodia, the fragile states as a group have increased primary completion faster than nonfragile low-income countries.

But primary education may be an exception. The effects of conflict on child health can be more severe and harder to reverse. More than 2 million children have died over the past decade as a direct result of armed conflict, and at least 6 million children have been seriously injured or permanently disabled (Bustreo and others 2005). A 2003 study found that during a typical five-year war, infant mortality increases by 13 percent and the effect is persistent: in the first 5 years of postconflict peace the infant mortality rate remains 11 percent higher than the pre-conflict baseline (Hoeffler and others 2003). In general, weak institutions—whether or not they are marked by conflict—constrain progress in expanding basic services in fragile states. As figures 2.7 and 2.8 show, while average access to improved water supply and measles immunizations have expanded in fragile states, they have not kept pace with the rates of improvement in nonfragile low-income countries.

Although the gap in average aid flows between fragile states and other low-income countries has narrowed over the past five years, aid to fragile states is particularly volatile. When donors do engage, they often establish parallel systems because government



systems are weak. This approach can further undermine fragile states, and can make future capacity building difficult. A particular issue in the human development sectors is the potential for gaps in service delivery in the “transition phase” between the end of a humanitarian crisis and the beginning of longer-term recovery and reconstruction projects.

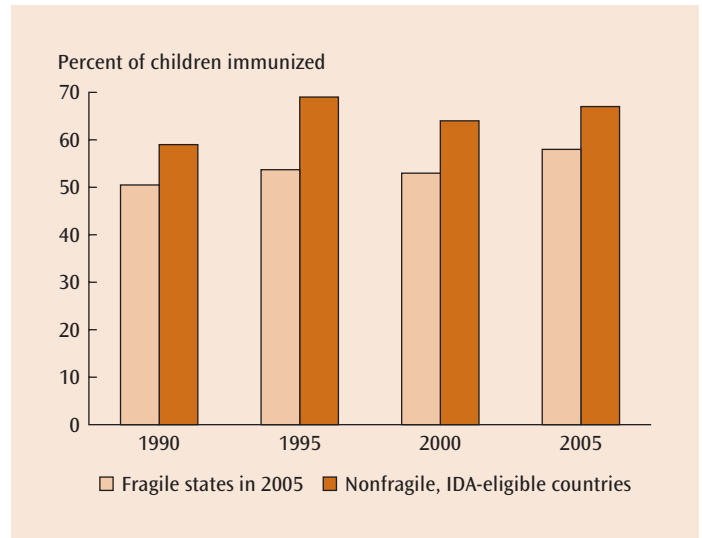
Aware of these issues, donors assisting in the postconflict reconstruction of Afghanistan and Timor-Leste have worked carefully to implement strategies to smooth the transition (box 2.7). The positive results of these experiences may hold lessons for donors working in other fragile states, and possibly in other sectors.

### Is MDG Progress Reaching the Poor?

Equitable country progress toward the MDGs comes from reaching the poorest citizens—bringing up average national indicators by extending services and achieving outcomes for the lowest quintiles of the population. Few sources of data allow national indicators to be “unpacked” to see which groups within countries have benefited most, but the international DHS does. As of end-2006, 21 developing countries had survey results that enable us to analyze MDG progress since the goals were adopted in 2000. While these countries are not a representative sample, they span all regions and different levels of per capita income.

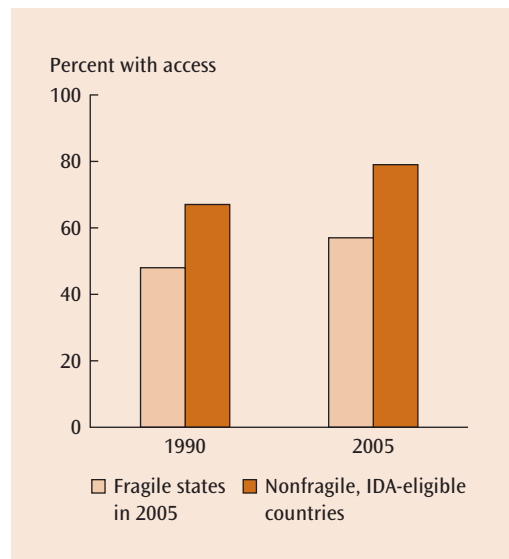
In every country, both access to services and outcomes for the poorest quintiles are lower than for other income groups, and the gaps are often disturbingly large. While child mortality rates across these 21 countries are 79 per 1,000 live births for the top quintile and 125 per 1,000 births for the population as a whole, they average 148 per 1,000 live births for the lowest quintile. While primary completion rates average 81 percent for the highest income quintile and 55 percent for the population as a whole, they average 36 for children from the poorest quintile. Similarly for the delivery of services such as immunizations, 82 percent of children in the top quintile and 69 percent of all children

**FIGURE 2.7** Measles immunization in fragile states remains lower



Source: WHO.

**FIGURE 2.8** A growing gap in access to improved water



Source: UN Joint Monitoring Project.

were immunized for measles in these countries, but only 59 percent of children in the bottom income quintile.

It is sobering to keep these gaps in mind. But the data also show some encouraging

### BOX 2.7 Rebuilding health services after conflict: Strategies from Timor-Leste and Afghanistan

After the violent withdrawal of Indonesian troops in 1999, more than 70 percent of Timor-Leste's health facilities were destroyed or badly damaged and approximately 80 percent of the country's health managers had left the country. The government faced the immediate challenge of restoring health services and a longer-term challenge of rebuilding a sustainable health system. With support from IDA and other donors, the government implemented a two-tier strategy that addressed both. Under the first Health Sector Rehabilitation and Development Project (HSRDP I), the government addressed the short-term need to get services going again by contracting with local and international relief NGOs; for a time, NGOs became the main health service providers.

At the same time, the government implemented strategic longer-term investments in a sustainable national health system—by reconstructing facilities, developing national health policies and regulations, redeveloping the organizational structure of the health system, and training new human resources.

Afghanistan faced a similar challenge after the collapse of Taliban rule. The country had some of the worst health indicators in the world, with estimated under-five mortality of 256 per 1,000 births, compared to 92 for South Asia. To address urgent needs, the World Bank and the Ministry of Public Health initiated the Health Sector Emergency Reconstruction and Development Project, and similarly contracted with 10 local and international NGOs to deliver a priority basket of health services in 12 provinces.

The results in both countries were impressive. In Timor-Leste, the use of health services increased from one visit per person per year on average to at least 2.5. Measles immunizations rose from 26 percent to 73 percent of children; skilled attendance at birth increased from 26 percent to 41 percent; and child mortality declined dramatically. In Afghanistan, even in provinces such as Helmand, where continuing violence cost the lives of several health workers, patient visits more than doubled, from 157,000 in 2004 to 338,000 in 2006. Across all 12 provinces, there was a fourfold increase in the number of people visiting rural health centers, a 60 percent increase in the number of functional health centers, and an increase from 5 percent to 63 percent of pregnant women receiving prenatal care.

Afghanistan and Timor-Leste illustrate the potential of approaches that integrate the best features of the public and private sectors. In each case, the government led the strategy and oversaw implementation, but delegated the role of principal service provider to NGOs. In Timor-Leste, subsequent projects have supported a progressive transition of service delivery from international NGOs to government district management teams. In Afghanistan, owing to the perceived success of the current contracting arrangements, the possibility of a longer-term partnership is being considered.

*Prepared by:* Fadia Saadah, EAHD and Benjamin Loevinsohn, SASHD.

trends. In the countries where service delivery is expanding—for primary education, immunizations, and other health services—there are many countries where the gains in service access for the poorest children are larger than for the population as a whole. Child mortality outcomes—which generally take longer to produce and reflect many factors beyond direct service delivery in health—also show some progress for the poor, although not as strongly. Specifically, the data show the following:

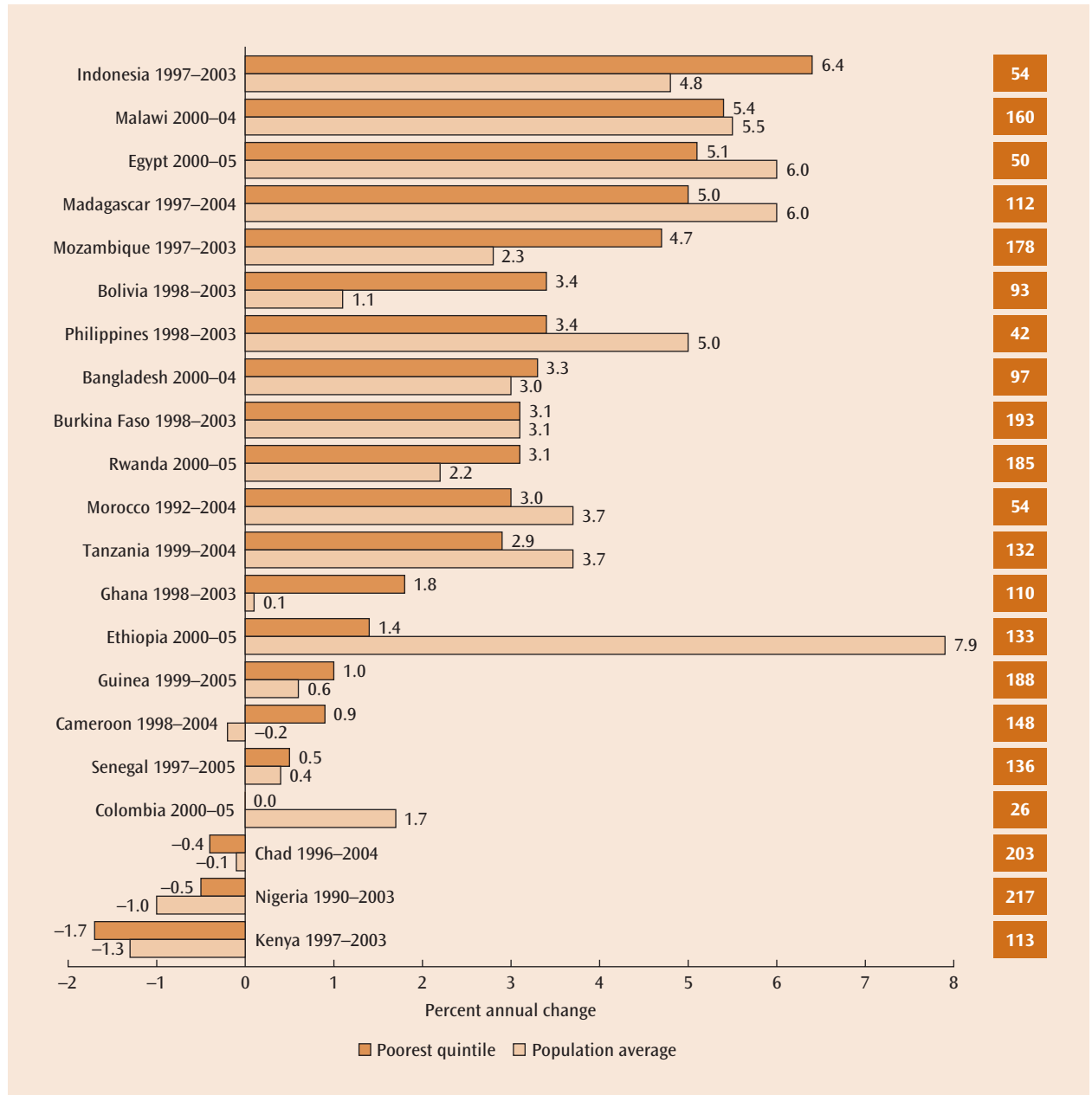
- In 15 of the 17 countries making progress in reducing child mortality, there is either little gap between the rates of improvement for the lowest quintile and the population average or faster progress for the poor.
- In 14 of the 15 countries that have increased measles immunization rates, coverage increased faster for the poorest children than for the population as a whole.
- In 11 of the 13 countries which show increased primary completion rates, the poorest quintile improved more than the

population as a whole.

**Child mortality.** The 21 countries with recent data include 14 Sub-Saharan Afri-

can countries, 2 in East Asia, 2 in North Africa, and 2 in Latin America (figure 2.9). The continued progress in Egypt, which trend data since 1990 show to be on

**FIGURE 2.9** Child mortality progress



Source: Demographic and Health Surveys.  
 Note: The boxed numbers show the numbers of child deaths per 1,000 live births in the most recent surveys.

track to reach the child mortality MDG, is clear. But these data suggest that several other countries—Indonesia, the Philippines, Malawi, Madagascar, Mozambique, and Ethiopia—have accelerated their progress on under-five mortality since the MDGs were adopted. While Egypt has maintained a decline in under-five mortality of over 4.3 percent per year for the full period since 1990, the four African countries and Indonesia and the Philippines have all begun registering the necessary rate of progress over the past several years. This is encouraging.

These data also show that in virtually all the countries where there is progress, it is reaching the poor. In nine countries—Indonesia, Mozambique, Bolivia, Bangladesh, Rwanda, Ghana, Guinea, Cameroon, and Senegal—children in the poorest quintiles are showing faster improvement in health than for the population as a whole. In six other countries (Malawi, Egypt, Madagascar, Burkina Faso, Morocco, and Tanzania) there is little gap. Only in two countries (Ethiopia and Colombia) is the rate of improvement in child health for the poorest groups seriously lagging behind the average. And in Chad and Kenya, overall deterioration is hurting the poor worst. In Nigeria, there is a long gap in time between the surveys, which could affect the comparability of the results. But the general picture of very slow MDG progress in these countries is corroborated by other data and is troubling.

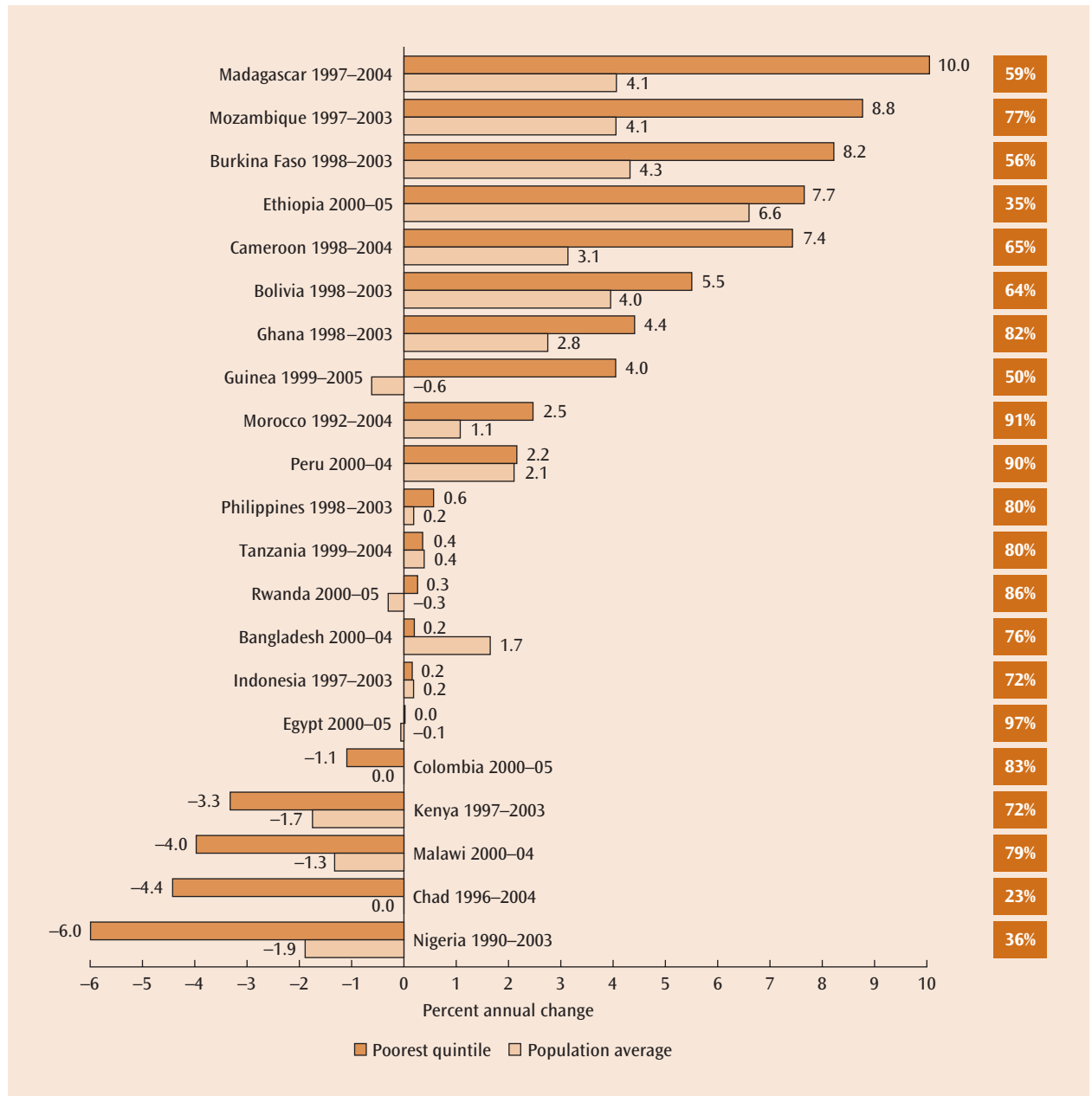
*Immunization against measles.* Given the aggressive global campaign since 1999 to increase measles immunizations, the DHS data offer a measure of the success of this effort. The data for 21 countries indicate that especially in Sub-Saharan Africa, measles vaccination rates have increased and children in the poorest income quintile have benefited substantially (figure 2.10). There is only one case, Bangladesh, where measles coverage has grown without benefiting the lowest quintile relatively more. It should be recalled, however, that Bangladesh has invested heavily in vaccination programs

for several decades and has a high level of overall coverage, including for the lowest quintile. Kenya, Malawi, Chad, and Nigeria again appear as troubling cases of decline for all segments of the population, but with the poorest harmed most.

*Primary completion.* In the 18 countries with comparable education data, the picture that emerges is that primary completion progress is strongly pro-poor. In all but two of the countries that registered increases in the share of youths who completed primary education, the poorest quintile improved more than the average, and in most of those countries the differential was large. Burkina Faso, Madagascar, Ethiopia, Bangladesh, and Morocco stand out as making exceptional progress in extending basic education to all segments of the population (figure 2.11).

As with the other indicators, Kenya and Chad show no evidence of progress. More surprising, perhaps, are the declines for Tanzania and Mozambique—both of which have been strongly committed to education for some time and are considered high performers by donors. The explanation may be that the share of the cohort aged 15–19 that has completed primary education reflects changes in the education system and participation rates from roughly a decade earlier; in a sense, these data “look in the rearview mirror.” Policy changes of the last few years—such as Kenya’s 2002 adoption of free primary education—will not be reflected in these results. But the impact of Mozambique’s civil war of a decade ago on schooling participation at that time would be. Neither of these explanations is fully satisfying in the case of Tanzania, however, which has sustained educational progress for many years. While rates of improvement will necessarily slow in countries with high levels of primary school coverage, which applies to Tanzania as well as several others of these countries, the poor should not necessarily show worsening trends.

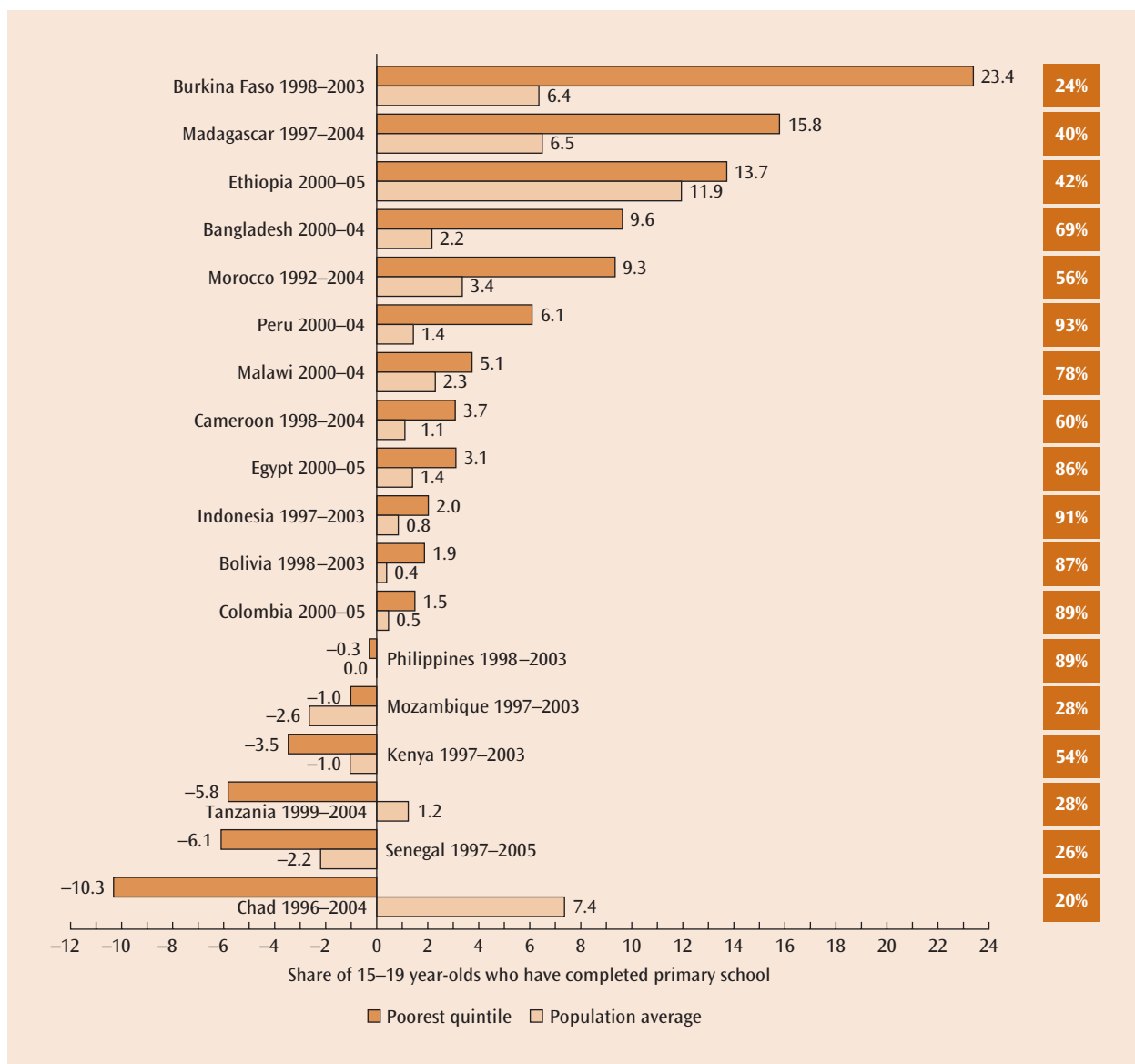
**FIGURE 2.10** Measles vaccines are reaching the poor in many countries



Source: Demographic and Health Surveys.

Note: The boxed numbers show the immunization coverage (for children 12–24 months) in the most recent survey.

**FIGURE 2.11** Primary completion progress is benefiting the poor in many countries, but not all



Source: Demographic and Health Surveys.

Note: The boxed numbers show the share of 15- to 19-year-olds who have completed primary school in the most recent surveys.

## The Role of Quality in MDG Progress

### Education: Are Developing-Country Students Learning?

In 2005, a respected NGO in India shocked the nation by publishing the results of a test administered to 300,000 primary school-

aged children across the country. Using a network of NGO volunteers, the simple test of reading and math skills was given to children at home, whether enrolled in school or not. The good news was that over 90 percent of all Indian children reported being enrolled. The sobering result: 68 percent of primary school students could not read a simple (second

grade-level) paragraph and 54 percent of children could not solve a simple two-digit math problem (Pratham 2005). The results varied across states, but the mean performance was troubling. What was India's tremendous progress in expanding primary access over the past decade really producing?

Other developing countries are confronting the same question. An NGO-administered test in a small set of low-income schools across Peru in 2005 found that 50 percent of children at the end of second grade could not read a single word of a simple first-grade text (Cotlear 2006). A similar reading test in rural Cameroon showed that 80 percent of the *third* grade children tested could not read a single word of a first-grade text (Walter 2007).

New research shows that such learning failures have high costs for countries, as well as the children involved. In a comprehensive review this year, two leading education researchers show that most of the economic returns to education are a return to the cognitive skills of the population, and not to the average levels—or quantity—of education attained (Hanushek and Woessman 2007). If two countries have the same average years of schooling but in one country average learning levels are higher, individual earnings, the distribution of income, and the long-term rate of economic growth will all be higher in that country.

While it has long seemed intuitively obvious that a year of schooling in Mali is not equal to a year of schooling in the Republic of Korea or Finland, it has never before been possible to “unpack” the differential quality element. Using a new data set that combines the results of all major international tests over the past 40 years, Hanushek and Woessman draw several important conclusions for education policy. First, they demonstrate that a large part of the higher incomes that more highly educated individuals earn, in both developed and developing countries, is a function of cognitive skill levels (as measured on international tests), rather than years of schooling completed. Second, they document a tight correlation across countries between

the degree of earnings inequality in the labor force and the degree of dispersion in adult literacy scores across the population (Nickell 2004). While learning disparities do not *cause* income inequality, the research does suggest that policies to lessen gaps in average learning levels across different segments of the population may have direct and positive impacts on income distribution.

Finally, they find a connection between education quality and growth that “dwarfs the association between quantity of education and growth.” A one standard-deviation increase in a country's average performance on international tests is associated with a 1–2 percentage point higher annual per capita GDP growth—a huge effect. Although small subsamples make these effects more tentative, Hanushek and Woessman also find that effects for developing countries (an increase of 2.29 percentage points per year) are higher than for OECD countries (1.7 percentage points per year), and that countries' trade openness and institutional quality significantly enhance the impacts.

Does it matter whether countries' average scores reflect broad-based education systems of reasonable quality or systems with a pinnacle of very high-scoring students? Both seem to be important. Countries' mean scores are highly correlated with the share of students who reach a threshold level of skills on international tests. In other words, countries' achievement of “education for all” by bringing all students to basic levels of literacy and numeracy is key for capturing the economic benefits of education. But the share of top performers is also important, and “seems to exert separately identifiable effects on economic growth.” Hanushek and Woessman postulate that top performers afford an economy the capacity to innovate, and a large population with basic skills provides the ability to diffuse and apply new knowledge broadly.

What does this mean for the education MDG? First, it provides powerful economic arguments to support the goals of Education for All as universal primary completion with adequate levels of learning, and not simply



completion of a target cycle of schooling. The 2000 Dakar Education for All goals were framed in these terms—universal coverage *and* learning—and many observers have urged that targets for the primary education MDG should explicitly include learning goals as well.

Second, it points to the value of measuring learning outcomes in relation to internationally benchmarked standards. The economic benefits identified were associated with learning levels that met an international threshold.

How many developing-country students meet this threshold today? Very few can be

directly compared, as only 7 developing countries—and no low-income countries—participated in the latest OECD cross-country assessment, and only about 20 developing countries have participated in any major international assessment. However, figure 2.12 provides a graphic image of the large gap in performance between OECD and developing-country participants on recent exams to measure math, literacy, and thinking skills among 15-year-old students.

Poor as these country results are, they represent the upper bound of student learning in

**FIGURE 2.12** Reading and math performance on the OECD PISA Exams, 2000 and 2003



Source: PISA 2003 and PISA 2000.  
 Note: PISA = Program for International Student Assessment.

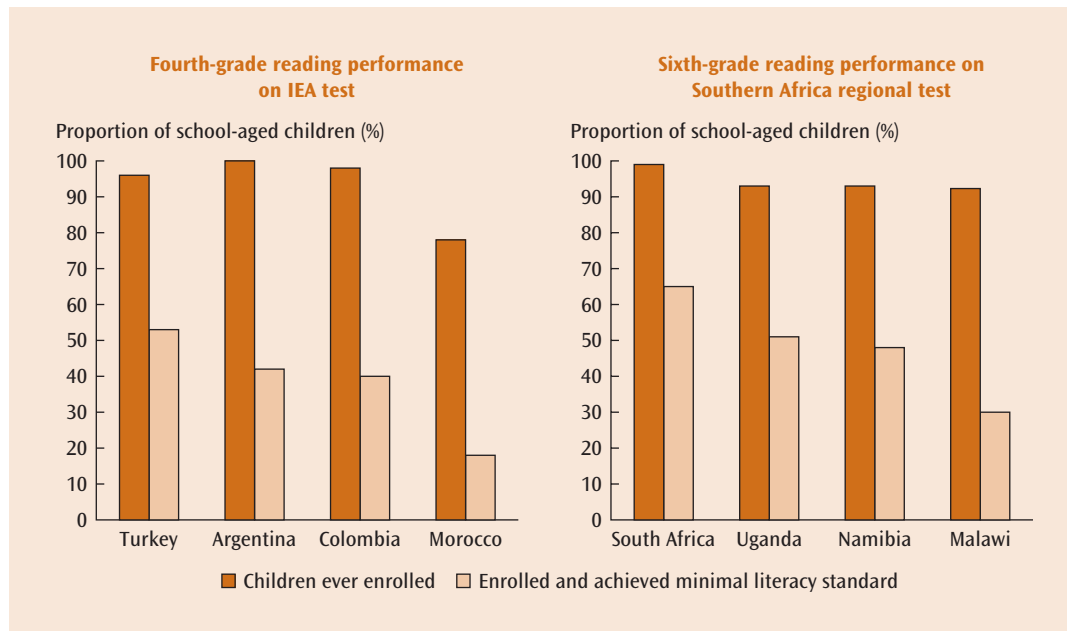
the developing world, because only relatively high-income developing countries have participated in any international tests to date, and in these countries, the pool of students tested represents only the relatively privileged 15-year-olds still in school at that age. In the regions where achievement of the education MDG is at greatest risk—Sub-Saharan Africa and South Asia—very few countries have participated in any OECD-benchmarked assessment. But figure 2.13 shows how even by age nine reading ability in developing countries can lag that in OECD countries by a significant margin. By the fourth grade in Argentina, Colombia, and Morocco, less than 50 percent of all children can read at the lowest-threshold-level of literacy, on an international test normed for OECD countries. In contrast, 96 percent or more of fourth graders in Sweden, Latvia, and the Netherlands read at this level (Greaney and Prouty 2007).

Although the level of “minimum literacy” in the regionally benchmarked assessment for

Southern African countries cannot be directly compared with that of the IEA test, the results are similarly distressing. In several countries in the region, 50 percent or less of children are able to read by age 12. In Malawi, high dropout rates in primary school combined with low learning results in only an estimated 30 percent of children being able to read at that age.

*Is there a quality-quantity trade-off in education?* The fact that rapid enrollment expansion in developing countries is often associated with strains on quality leads to speculation that there is an inherent trade-off between schooling coverage and learning levels. But UNESCO’s 2005 report on education quality, which looked carefully at the available evidence on learning outcomes, and other recent cross-country studies do not support this (UNESCO 2005, Crouch and Fasih 2005). In fact, cross-country data show a positive correlation between education coverage and average learning levels, at

**FIGURE 2.13** Many children do not attain minimum learning levels



Source: Fourth-grade test: International Association for the Evaluation of Educational Achievement (IEA), Progress in International Reading Literacy Study (PIRLS) 2001; Sixth-grade test: Southern African Consortium for Monitoring Educational Quality (SACMEQ). Enrollment data: Demographic and Health Surveys.

least over the long term. There is no case of an education system with high average learning levels that has not also achieved universal primary completion and virtually universal secondary school completion. There are also cases of countries that have simultaneously increased schooling access and raised learning levels. There is no *inherent* tradeoff.

That does not mean it is easy to maintain school quality as enrollments swell, especially when enrollments increase dramatically, as in response to policy changes such as the elimination of school fees. But the essential fact that there is no inherent trade-off is important, because a large number of countries are still far from universal primary completion and many will need to find ways of scaling-up service delivery even faster from now to 2015 to reach the MDG. Slowing expansion would harm the poorest and most marginalized groups most. The evidence suggests that most developing countries are striving to universalize primary education as quickly as they can. The strategy must be to support their efforts to give adequate attention to quality and ensure that children learn. And even many countries which have reached or are on track to the MDG in terms of coverage must do more to improve learning, to equip youth with the literacy, numeracy, and critical thinking skills needed for full participation in civic life and economic productivity.

*Support for measuring learning outcomes.* The policies that can help countries achieve improvements in quality and learning at the same time as they expand access and completion have been analyzed comprehensively by UNESCO (GMR 2005), and other studies. A relevant question from the standpoint of MDG progress is whether donors are currently giving adequate support to developing countries' efforts to monitor student learning. Today, a developing country that wishes to benchmark its students' learning performance against that of other countries lacks good instruments for doing so. All of the currently available international tests have been developed for advanced countries. They do not provide useful information for

developing countries because they tend to be too difficult. It is important that developing countries have access to evaluation and testing methodologies that allow them to link to performance in the developed world, but also provide good measures of the range of performance in their own populations.

One approach that has been proposed is the development of a set of global learning goals—a core set of literacy, numeracy, and critical thinking skills that children should master by the end of primary school (Filmer, Hasen, and Pritchett 2006). While in a world of global economic competition, the most relevant benchmark for learning is arguably a global one, there are many alternative ways to support a stronger focus on learning outcomes. An internationally normed subset of questions, for example, could be built into national or regionally benchmarked assessments. The important thing is to generate a valid measure of student learning levels that can be tracked over time and directly compared with results for other countries.

An important issue for cross-country comparisons in an MDG context is that the average learning levels achieved by children in school must be adjusted for the share of students not in the school system to generate a true picture of the average literacy and numeracy skills of the population. To do otherwise creates adverse incentives for expansion, particularly for marginalized students.

Regular tracking of student learning is also essential for establishing accountability systems in education that focus teachers, parents, and administrators on the right outcomes. When results are fed back to teachers, they become a tool for classroom improvement. When results are fed back to communities, they can strengthen local voice in school governance. And when results are tracked by system administrators, they help evaluate the effectiveness of education spending. Abundant research from developed countries and increasing evidence from developing countries shows a consistently weak correlation between higher spending and improved student learning (Hanushek and Kimko 2000;

Woessman 2003; Pritchett 2004; Hanushek and Luque 2003; Mizala and Romaguera 2002). This does not mean that learning can be improved *without* more resources, and there is some evidence that a minimum set of inputs (basic facilities, teacher presence, and the availability of books) is a threshold condition for education to occur (Duflo 2001). But it is evidence that many common and costly “input based” strategies for strengthening education systems—such as upgrading teacher qualifications or lowering class size—do not work. Only by tracking student results over time can school systems gauge whether teacher quality is truly improving, and which policies and investments aimed at making teachers perform better really produce results.

There are political and technical challenges to standardized learning measurement. Political challenges in part stem from the power that exposing student learning results can have in holding education stakeholders accountable. But there are also legitimate concerns in developing countries that OECD benchmarked tests do not measure their reality or their curriculum.

Designing valid and reliable tests is costly, takes time, and requires sophisticated skills. If a test is internationally benchmarked, sustained and intensive international cooperation is also required. For this reason, the approach being piloted in some developing countries—to use simple tests of reading fluency at the end of second grade—is a welcome development. Such tests are low cost, relatively easy to administer, and provide early feedback on literacy development that school systems can act on.

But such nationally oriented tests are not a substitute for more systematic tracking of learning *across* developing countries. Existing research points to the need for countries and donors to shift from spending and aid based on inputs to spending based on education results—and specifically, measurable improvement in student learning. There is a genuine global public goods dimension in cross-country assessment, and donor sup-

port is justified to underwrite its costs. The key is to develop new assessment instruments that are suitable for developing countries, but linked to existing international tests. However costly it might be to develop, pilot, and sustain such assessments, the sums would be small in relation to the billions of dollars in new aid being mobilized to support universal primary completion. Globally benchmarked assessments covering large numbers of developing countries would provide the strongest platform yet for research on “what works” to promote learning results in different country contexts.

Measuring learning outcomes per se does not improve education systems; it does not eliminate the political obstacles to key reforms or ensure that better policies are well implemented. Some OECD countries that regularly participate in internationally benchmarked assessments, such as the United States, have been notably unsuccessful in improving their results. But other countries have done so: the United Kingdom, Australia, and Finland are good examples. Clearly, testing is not a panacea. But it is an essential tool for countries that want their policy and program choices to be guided by evidence that they work. Such evidence holds crucial potential for more effective developing-country policies, more productive aid, and faster and more meaningful progress toward the education MDG.

### Promoting Quality in Health

Quality in health can be measured in terms of the structure of supply, process, or outcomes. As in education, the most meaningful measures of a system’s quality are the outcomes it produces. But in health, data on key outcomes such as child or maternal mortality are difficult to collect, slow to change, and heavily influenced by factors beyond health. Process data also present collection challenges. As a result, as in education, the most commonly used quality measure is inputs—such as the distribution of health clinics, drug supplies, and the quantity and qualifications of health providers—and is the basis for most health

sector planning (Collier, Dercon, and Mackinnon 2003; Lavy and Germain 1994).

Much of the attention in relation to the health MDGs has focused on the challenge of scaling up one key input: health providers. The Joint Learning Initiative of the WHO and other health donors has estimated that large increases in doctors and nurses in the developing world will be needed to attain the health MDGs. In Africa alone, an estimated 1 million new health workers are required by 2015, to increase the current ratio of 1 provider per 1,000 people to a target of 2.5. While cross-country studies provide some evidence that provider density is correlated with services such as immunization rates and assisted births, it is equally clear from research that weak incentives for performance can drive a large wedge between the theoretical availability of providers and the quantity of care they actually deliver. Chaudhury and others (2006), for example, found an average provider absence rate of 35 percent in surprise visits to health facilities in six developing countries, with an absence rate for doctors in some rural areas reaching as much as 75 percent.

*Measuring the quality of clinical practice.*

Some of the most recent research in health is going a step further, analyzing the extent to which even when providers are present, they may deliver suboptimal care. Drawing on creative strategies—doctor and patient interviews, direct observation of doctor-patient interactions, and vignettes (or the use of actors to simulate sample patient cases)—researchers are gathering direct estimates of provider quality through key process measures. The implications for attainment of the health MDGs are substantial. If health provider *availability* does not guarantee adequate care, strategies to achieve better health outcomes by training and recruiting more workers will fail. But if effective strategies exist for getting more performance out of existing providers, availability could greatly accelerate progress.

Recent studies have explored these issues in five countries with very different levels of

economic development and very different health systems—India, Indonesia, Tanzania, Mexico, and Paraguay. There was substantial variation across and within countries, but the overall quality of care was low. In a disturbing number of cases, clinicians routinely misdiagnosed and mistreated common illnesses, not because of lack of training or medicines, but because they did not exert the effort necessary to find the correct diagnosis (Leonard, Masatu, and Vialou 2005).

In Tanzania, 33 percent of clinicians misdiagnosed a woman with pelvic inflammatory disease and 60 percent mistreated the condition. This disease—which is caused by untreated sexually transmitted diseases—makes a woman more susceptible to HIV/AIDS and more likely to spread the illness to partners if untreated. While 86 percent of clinicians correctly diagnosed a patient suffering from classic symptoms of TB, 67 percent mistreated the disease. Less than 20 percent of clinicians informed TB patients of the importance of taking medicine consistently, even though they knew that effective treatment of TB requires careful ongoing management (Leonard, Masatu, and Vialou 2005).

In India, doctors completed only 26 percent of the tasks medically required for a patient presenting with TB—the number one killer among infectious diseases in India—and only 18 percent of recommended tasks for a child with diarrhea (Das and Gertler 2007). Doctors in Tanzania completed less than 24 percent of the essential checklist for a patient with malaria (Leonard, Masatu, and Vialou 2005). In the face of major global efforts to curb HIV/AIDS, TB, and malaria, these data are troubling: the impact of substantially increased funding will clearly be blunted if clinicians in the target countries cannot diagnose patients who suffer from these illnesses or effectively treat them.

The important finding for policy makers is that large gaps can exist between what providers know and what they do. On questionnaires about their standard practice, many doctors knew the correct diagnostic proto-

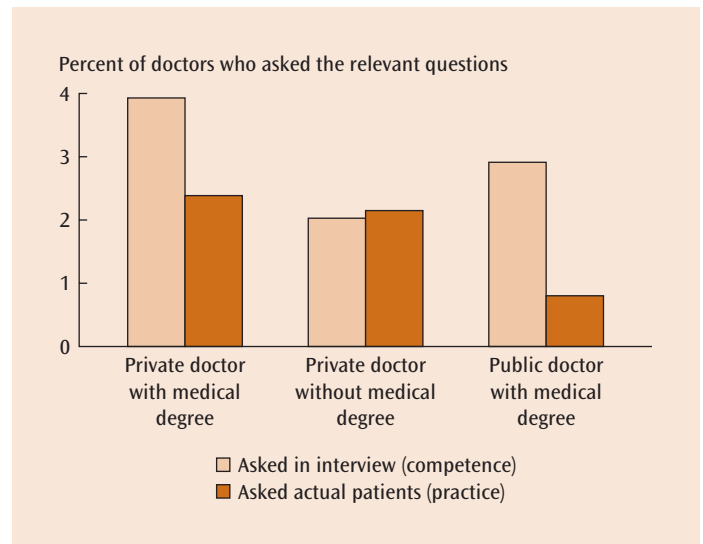
cols to follow for different patient conditions. But in actual practice—particularly for patients seen later in the day—adherence to protocols was low. In India and Tanzania, the biggest gaps were found in the public sector. While competency levels were often higher among public sector doctors (all doctors in this sector are medical board qualified), their “effort” was sharply lower than in the private or NGO sector (Das and Hammer 2004). As figure 2.14 shows, in India the increased value of competence in the public sector was completely offset by decreased effort. Although private doctors lacking the Indian medical board certification are significantly less well-trained than doctors in the public sector, the quality of care they delivered to patients was significantly better.

These findings offer two potentially important policy implications. First, they suggest that trying to improve health care delivery by raising training requirements, expanding medical schools, or other input-based policies countries often rely on may be an inefficient route to better health care performance. Second, it suggests that countries concerned about a “brain drain” of their trained physicians to OECD markets might be able to reduce those risks by setting national training requirements slightly lower than the rich countries’ standards. These data suggest that there might be very little trade-off in terms of delivered health quality.

Institutional setting—along with incentives—makes a large difference for the quality of service delivered. In Tanzania, clinicians working in facilities with “high-powered incentives”—measured by factors such as the ability of facility managers to hire or fire personnel, set salaries, determine the number and types of staff who work for them, and the degree of financial independence at the facility level—were much more likely to perform up to their ability than equivalently trained and paid doctors in less autonomous facilities (Leonard, Masatu, and Vialou 2005).

**Contracting for results.** An increasing number of developing countries are experimenting with ways to inject “high-powered

**FIGURE 2.14** The quality of health care is not just a function of doctors’ training  
(percent of recommended diagnostic protocol followed by different types of doctors in India)



Source: Das and Hammer 2004.

incentives” for performance into public health systems. One approach is to contract private providers for the delivery of public health services. While the first and most rigorously evaluated such experience is Cambodia (see box 2.8), contracting has also been tried on a fairly large scale in nine other countries. In a recent review of the experience, Loevinsohn and Harding (2005) conclude that contracting for primary health care services has been effective and can produce rapid improvements. Positive results have been achieved in a wide range of country settings and for a range of different services, from nutrition in Africa to primary health care in Guatemala. In most places where it has been tried, governments have subsequently decided to scale-up contracting more broadly. The biggest impacts generally have been for services that are relatively easy to deliver such as immunizations, vitamin A supplementation, and prenatal care. Services such as family planning and assisted deliveries have shown smaller changes, likely



### BOX 2.8 Contracting for health services in Cambodia

As part of a major effort to expand and improve health service delivery, Cambodia since 1999 has contracted out to private bidders the management of government health services in five rural districts. In each district, contractors were required to provide a “Minimum Package” of preventive care, health promotion, and simple curative services. Contractors were also responsible for services at district hospitals, subdistrict health centers, and rural health posts. Performance was measured against eight service delivery indicators. Contracts were for a fixed period and inadequate performance could lead to sanctions and nonrenewal. The five districts covered 1.2 million people, 11 percent of Cambodia’s population. All of the contractors were international NGOs.

Since the districts were randomly selected for the program, it has been possible to evaluate its impacts rigorously—in other words, to determine with confidence that the health delivery improvements seen in these districts were actually caused by the program.<sup>a</sup> Some of the effects have been large: immunization coverage increased by 21 percentage points, vitamin supplementation to children under age five increased by 42 percentage points, and antenatal care delivered to pregnant women increased by 36 percentage points. Contracting improved the management of government health centers, as measured by availability of 24-hour service, reduced staff absenteeism, increased supervisory visits, and continuous availability of supplies and equipment. It also led to lower out-of-pocket spending by patients, who shifted back to using public health facilities instead of private sector drug sellers and traditional healers. As the districts eligible for the experiment were in poor regions, this is an important equity effect. While measuring the impact on final health outcomes such as child mortality would require a larger-sized experiment, the researchers could conclude that health status in the five districts improved as a result of the program: both the average number of reported illnesses in a typical month and the incidence of diarrhea in children under five were reduced.

A cautionary note from Cambodia’s experience is that even though some of the program’s impacts were genuinely large, they were less than would have been estimated through a simple “before and after” comparison of health service delivery in the districts implementing the reform. This is because over the period of the contracting experiment, there was a strong general improvement in health system performance. The careful manner in which the government rolled out this program allowed for accurate estimate of its causal impacts, and more confidence about what can be expected now that it is being scaled-up further.

a. Bloom and others 2007.

because these imply more behavioral change on the part of patients.

In all cases where contractor performance was directly compared with government provision of the same services, contractors were more effective in expanding coverage and delivering quality care. In Hyderabad, India, for example, an NGO achieved a TB treatment completion rate that was 14 percentage points higher than the public clinic in a nearby area, and at a lower cost (Murthy and others 2001).

The cases to date provide suggestive evidence that the most successful approaches base the contracts on specified outputs and outcomes, rather than inputs, and give contractors autonomy over how they use resources to produce the contracted outcomes—including the ability to offer differential pay to the public sector health workers they supervise and to hire and fire with greater flexibility.

Contracting out services to private providers is not the only formula for strengthening performance incentives in health systems.



Rwanda is experimenting with performance-based contracting for both public and NGO providers, using some of the same principles. The system pays facilities (which in turn pay individual providers) bonus payments for incremental improvements in basic health services and HIV/AIDS testing and treatment. Facilities have autonomy over how funds are used, including topping up staff salaries and freedom to raise outside sources of income, such as from user fees. Strong monitoring and auditing arrangements (including periodic surveys to track patient satisfaction) allow for verifying the quality of care and making payments conditional on quality. Argentina's innovative *Plan Nacer* program is similarly using bonus payments to create incentives for better quality maternal and child health services no matter where they are provided—in public, semi-public, or private facilities.

It is encouraging that countries such as Cambodia, Rwanda, and Argentina are not only developing new strategies to improve quality in health, but also rolling out reforms in a careful manner that permits rigorous evaluation of their impact. The creative new research exposing the large wedge between doctors' ability and their practice makes it clear that attaining the health MDGs in most developing countries will depend at least as much on getting better performance from providers as on scaling up their numbers.

## Conclusions

From the vantage point of 2007, the stretch goals to promote human development progress set by the international community in 2000 have made an appreciable difference. They have put a significant number of developing countries on a faster trajectory to universal provision of basic health and education services. They have demonstrated the commitment of the rich world to mobilizing increased aid for specific human development goals. And they have given rise to a large number of new global institutions and programs to support these processes. Not all of these developments are unalloyed goods; there is

growing concern about the quality of rapidly expanding services, the "earmarking" of development dollars to specific diseases and goals, and the transactions and coordination costs associated with proliferating funding channels. But actions in each area could mitigate some of the problems and enhance the positive trends. Some of the most important are summarized below:

- ***Intensified Focus on Learning.*** The international community could strengthen the incentives for developing countries to keep focused on student learning and school quality as they pursue universal primary completion. There is a public goods argument for donors to support developing countries in defining a relevant set of basic literacy, numeracy, and critical thinking skills that should be attained by the end of primary school. International support could also help build appropriate national and regional assessment systems to track student learning in developing countries and permit them to benchmark their progress.
- ***Health system strengthening.*** There is an urgent need for scaled-up and stronger health systems in developing countries, to stretch absorptive capacity and avoid the risks that large amounts of needed aid are lost to mal-coordination and corruption. There is also need for appropriate incentives to improve outcomes, and actions to ensure that levels of support are sustainable and not distortionary at the macro level. The new World Bank Health, Nutrition, and Population (HNP) sector strategy commits the Bank to a central focus on health system strengthening, but it will require internal staffing changes and other actions to develop this potential fully.
- ***Donor harmonization in health.*** Action is needed to curb the transactions costs and coordination failures increasingly associated with verticalized and proliferating health programs. The way forward should be country-led processes that set clear national priorities in health and insist

on more rapid progress toward the Paris Harmonization targets: donor alignment with national plans, joint supervision missions, use of national systems, and other goals.

- **Monitoring results.** For too many MDG targets and in too many countries, lack of data makes it impossible to track progress. There are several sources of support for statistical strengthening in developing countries, including new initiatives since the MDGs were adopted, such as the Health Metrics Network, but collectively these efforts are not enough. Expanded donor support is needed for building countries' ability to monitor trends in key areas.
- **Evaluating impact.** The key to faster MDG progress is basing policies, programs, and donor support on evidence of what works. Too few innovative programs in the developing world are rigorously evaluated today, and those that are often show that program impacts in reality are lower than advocates predicted. This is not bad news; it is the reality that explains why, in aggregate, "aid effectiveness" is not higher. Only rigorous evaluations—which establish that the program *caused* the observed results—can build a solid base for policy and program design. Because such evaluations are expensive and have a public good

element in that they benefit all countries, there is a strong case for increased donor support.

## Notes

1. There is no official estimate for the end of 2006, but Peter Piot of UNAIDS expected the number would "probably approach 2 million" by year end (remarks on November 27, 2006, Washington DC).

2. Because the World Bank uses an exponential, rather than linear, method to model progress to MDG targets, these estimates of the number of countries and regions on track to the goal differ slightly from those of the UN Joint Monitoring Program.

3. In previous years, this report cited IMF public expenditure data for health and education in developing countries. In 2005, the Fund stopped collecting sector-level expenditure data, so GMR 2007 relies on data from UNESCO for education, and on WHO for health spending. Both series show numerous inconsistencies with IMF data (which we have reported previously), with particularly large inconsistencies for education. Country coverage of UNESCO's spending data is also much weaker than WHO's. For 2004, UNESCO's developing country coverage was extremely low, so the terminal years presented above for education and health are different.