In the past thirty years, Sub-Saharan African countries have made remarkable improvements in health conditions and status. However, they still suffer from some of the worst health problems in the world, and AIDS is making conditions much worse than they would be otherwise. Premature death and high levels of morbidity, fertility and malnutrition are common throughout the region. Communicable, maternal, perinatal and nutritional causes accounted for 65.9 percent of total DALYs lost in Africa in 1990, amounting to one-third of the global total. Projections of the disease profile for Africa in the year 2020 indicate an epidemiological transition, with an increase in the percentage of non-communicable diseases from 19 percent of DALYs lost in 1990 to 32 percent in 2020. Similarly, during this period, injuries are projected to nearly double form 15 percent to 28 percent of DALYs lost.

This study, Health Expenditures, Services, and Outcomes in Africa considers 48 countries of Sub-Saharan Africa and outlines broad patterns of health spending, service delivery, mortality, fertility and nutrition in the early to mid-1990s. The study focuses on how to better monitor progress and use information to identify problems and improve health outcomes within and among different African countries. Good information about inputs, processes and results in the health sector is vital for policymakers to make intelligent choices about health strategies and investments, and often is simply not available. For purposes of the study, countries were classified as lowest-income, low-income and middle-income categories. Over three quarters of the African countries are low income or even lowest income countries, and nearly all have weak health management systems.

Principal findings

The data presented confirm the multiple challenges of poverty and health in Africa. The hypothetical "median" African country had a per capita GDP of less than US$400, an adult female literacy rate of 47 percent, a relatively weak bureaucracy (1 on a scale of 1-4), and a high level of corruption (2.5 on a scale of 1-5). It also experienced low public sector expenditures on health ($6 per capita), mediocre immunization coverage (64 percent for DPT3), a contraceptive prevalence rate of only 15 percent, and only 45 percent of deliveries supervised by a trained health worker. With regard to health outcomes, it had an infant mortality of 92 deaths per 1,000 live births during the period 1990-96. Life expectancy was only 49 years for males and 52 years for females, the Total
Fertility Rate was 5.7 and 26 percent of children were malnourished (underweight).

One of the main messages to emerge from the study is the substantial variation among African countries in their health experiences. For example, public sector health spending was $4 per capita or less (with the median nearly $6 per capita) in the lowest quartile of countries, while the top quartile of countries spent about $21 or more per capita. However, conditions with regard to other indicators, such as access to safe water and the proportion of supervised deliveries varied much less.

The study reveals a steady improvement in key education, sanitation, and water supply indicators as income increases. Nonetheless, levels of access to safe sanitation and water supply remained quite low even in middle-income African countries. The gross secondary school enrollment ration showed a progression from 16 percent (lowest-income) to 25 percent (low-income) to a marked jump to 74 percent (middle-income). A similarly striking decline in female illiteracy distinguishes the middle-income from the low- and lowest-income countries.

The lowest-income countries were found to have the highest level of corruption, as well as the weakest public bureaucracies. Low-income countries had relatively poor levels of corruption and bureaucratic quality, with values much closer to the lowest-income countries than to those of the middle-income countries. The ratio of military-to-government health expenditures was significantly higher in the low-income countries as compared to the middle-income countries. Not surprisingly, the lowest-income countries had the smallest proportion of GDP devoted to health expenditure and had the highest military-to-government health expenditure ratio.

The absolute levels of 1990 government per capita health spending among the lowest-income countries ($2.27) raise serious concerns about the long-term feasibility of government financing of a minimum package of health services that are expected to reach all people in these countries (estimated by the World Bank in 1993 at $12 per capita and, using a different methodology in 1994, at around $13 and $16 per capita in low-income and middle-income African countries). There is a critical need for country-specific analyses of the content, cost and financing of basic health services, as the international community and African households will probably not be able to ensure sustainable resource flows for health services at this level. In the lowest-income countries, donor contributions accounted for 53 percent of public sector health expenditures, dropping to 41 percent in the low-income countries. In this context, there is also a remarkable disconnect between public and political rhetoric on the importance of primary care and the realities of public resource allocation. An interesting fact was that Official Development Assistance (ODA) rose along with incomes from the lowest-income to the low-income countries. External assistance financed nearly all capital investments in health in the public sector, thus suggesting that the donor community holds significant responsibility for long-term patterns of health services and recurrent spending on health in Africa.

The share of the private sector in total health expenditure was fairly stable across all three country income groups, at 45 percent, 49 percent and 43 percent among the lowest-, low-, and middle-income countries, respectively. Yet private spending was nearly twice that of government spending in the lowest-income countries and only one-third higher than government spending in the low-income countries. The fact that households finance half of health services in all but the middle-income African countries poses a fundamental challenge to policy makers, to encourage households to use those resources
for the most cost-effective and socially responsive services. An appropriate action would be for public officials to study, in consultation with consumer groups, how private spending may be attracted away ineffective and sometimes dangerous remedies to the most appropriate services, regardless of whether these services are provided by the public or private sector.

The general pattern of who benefits from public health sector spending in Africa is clear – the richest people tend to benefit much more than the poorest. Furthermore, the poorest people tend to be less healthy than the richest. The study suggests that the interconnections among issues of poverty, equity and health deserve a stronger position on the health policy agenda of African countries and their international partners than has been the case in recent years.

As regards key health outcomes, disaggregated by country income group, each measurement of mortality, fertility and nutritional status registered steady improvements as GDP rose. A worrying exception was the increase between 1990 and 1995 in adult mortality rates between 15 and 60 years of age across all income categories. The middle-income countries had almost a 100 percent better showing than the lowest-income countries with regard to infant mortality. Women in the middle-income countries had three fewer children than those in the lowest-income countries. Children in the lowest-income countries were three times more likely to be underweight (low weight-for-age) and twice as likely to be stunted (low height-for-age) when compared to middle-income countries, although there was little difference with regard to wasting (low weight-for-height). These data suggest that the poorest populations are at risk of being left behind in the race to improve health outcomes. The data suggest the importance of a continuing, concerted attack on infant and under-five mortality, particularly in the lowest-income countries.

**Uses and limitations of the data**

The study illustrates how the data set can be used at the country level. Examples are given from Cote d’Ivoire, Ethiopia, Ghana and Gabon, which belong to the lowest-, low- and middle-income groups. Readers are encouraged to prepare their own country-specific analyses from the data in the study.

The study concludes with a note of caution on interpreting the data. The study findings set out in regression analyses are consistent with biologically plausible relationships between measles and malnutrition, contraceptive use and fertility and infant mortality, and supervised deliveries and infant mortality. However, the data do not allow a test of the more general hypothesis that increased public sector health spending causes improved health outcomes in Africa. Further, the study is cross-sectional, limiting the ability to assign cause and effect. Longitudinal and individual-level study designs are needed to provide more insight about causality. In addition, one must be careful when interpreting associations between grouped data and events that occur at an individual level where much health spending, use of health services and mortality takes place. This study is based on aggregated national data and does not analyze individual-level data. Much of the underlying intra-country differences are also not captured.

With these caveats and limitations, the study is useful in highlighting gaps in available information. It also clearly points to the need to facilitate the increasing generation and application of information on health expenditures, services and outcomes in Africa both by
making better use of available data and by helping to close some of the gaps in missing data.