Development Progress

Case Study Summary

Health

AGAINST THE ODDS Mozambique's gains in primary health care

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A newborn is weighed before being vaccinated in the vaccination section of the Manhica Health Centre. (Manhica, Mozambique, 2007) Photo: © Gates Foundation

- Between 1997 and 2011, Mozambique's infant mortality rate halved from 147 to 71 deaths per 1,000 live births, and the under-five mortality rate also halved from 219 deaths to 109.
- Despite the devastating impact of the HIV epidemic, maternal mortality has declined faster than the sub-Saharan Africa average, falling from 692 to 408 maternal deaths per 100,000 live births between 1997 and 2011.
- Inequality in health outcomes between urban and rural areas has also narrowed: the gap in under-five mortality rates between major cities and villages has reduced from 58% in 1997 to 11% in 2011.
- Large improvements in access to health have been enabled by increased expenditure on health, as well as an expansion of health centres and staffing, reducing the population per health centre from an average of 57,000 in 1997 to 23,000 in 2007.

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Why child and maternal health in Mozambique?

Coinciding with the past 20 years of relative stability, greatly improved security and sustained growth, Mozambique has made significant progress in improving the survival prospects of women and children. While Mozambique's progress may not be on the scale of that achieved in some other low-income countries, given the substantial obstacles it has faced, including the civil war, the AIDS crisis and ongoing natural disasters, the nation has made striking advances in child and maternal health.

In the early 1990s Mozambique was one of the world's poorest and most aid-dependent countries, having suffered from years of civil war, drought and economic devastation. Yet, in the last two decades the under-five and infant mortality rates have reduced by over 50%, whilst maternal mortality rates have improved by nearly as much. Significant strides have also been made in narrowing the gap in health outcomes between urban areas and the typically under-served rural ones.

Mozambique provides important lessons to other countries looking to rapidly scale-up health provision in a post-conflict setting. Key drivers of change include a systematic focus on tackling barriers to access caused by distance and lack of education, the use of innovative and low-cost human resource policies to quickly increase personnel and the move towards more coordinated systems of aid disbursement.

What progress has been achieved?

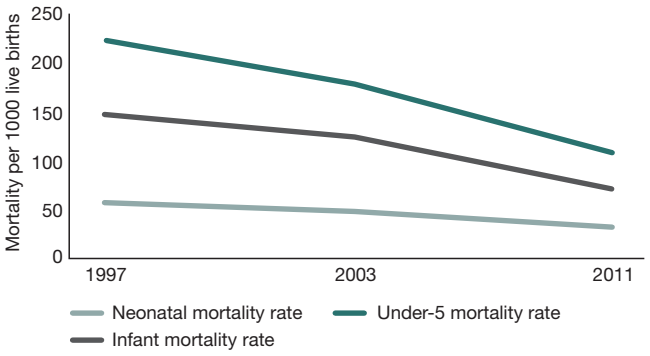
Mozambique emerged from its civil war with a decimated health infrastructure, few funds and very limited capacity. Despite extremely difficult circumstances, including the ongoing HIV and AIDS crisis, frequent natural disasters and persistently high levels of poverty, the country has made significant progress in just two decades. These achievements have been facilitated by a favourable enabling environment in which the largely stable democracy that has been evolving since the civil war has allowed governments to both prioritise health and encourage growth, which has averaged 8% throughout the 2000s. The country's gross domestic product (GDP) per capita more than doubled, from $176 in 1992 to $417 in 2012.

1. Achievements in child health

According to Demographic and Health Survey (DHS) data, child mortality rates declined significantly between 1997 and 2011 for new-born children, infants and children under five: the infant mortality rate declined by over 50%, from 147 to 71 deaths per 1,000 live births; the under-five mortality rate has declined from 219 deaths per 1,000 live births to 109 (see Figure 1).

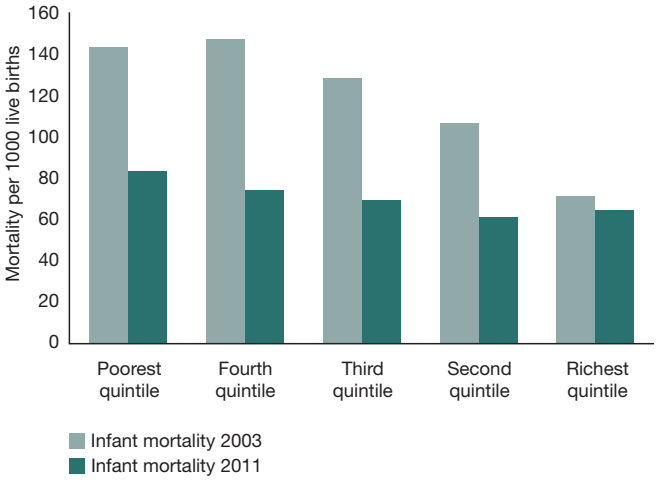
World Bank estimates suggest that infant and child mortality rates in Mozambique have fallen to levels where they are now around the average for the sub-Saharan Africa (SSA) region. Progress in closing the gap between urban and rural areas in the under-five mortality rate has been greater in Mozambique than in many other African countries; the difference between rural areas and cities in mortality rates declined from 58% in 1997 to 11% in 2011.

Figure 1: Infant and child mortality rates



Source: DHS STAT compiler

Figure 2: Infant mortality by income group



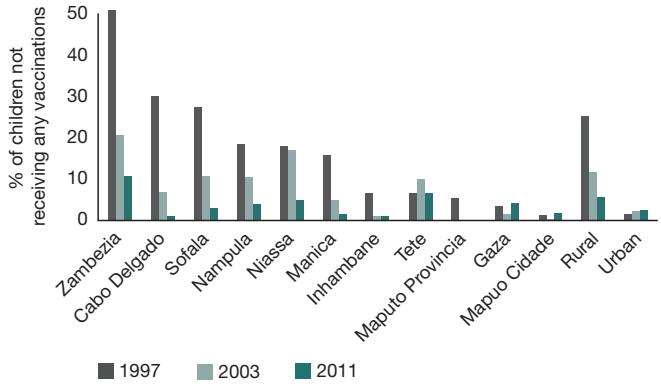
Source: DHS (1997; 2011)

Inequities in the infant mortality rate between the richest and poorest have also narrowed significantly. While the rate for the poorest quintile (143) was twice the rate of those of the richest quintile (71) in 2003, the gap had narrowed substantially by 2011, with the rate of the poorest 20% declining by 41.9% in just eight years (see Figure 2).

In large part these improvements can be attributed to greater access to, and utilisation of, health services in recent years. Mozambique is ahead of the regional average for many indicators in this regard, including skilled birth attendance and measles immunisation. Immunisation rates have increased since the late 1980s and early 1990s and the country has also been closing the gap in access to services such as child-vaccinations, in part through large-scale vaccination campaigns.

‘Mozambicans buried the weapons and grabbed the tools to work. What happened was almost a miracle because after 16 years of very destructive war, it all stopped from one day to the next’ – Public health expert

Figure 3: Children not receiving any vaccinations - declines across regions



Source: DHS STAT compiler

All provinces have seen significant declines in the number of children not receiving vaccinations and the large gap that existed between rural and urban areas in 1997 – over 20% – has nearly been closed. According to the most recent DHS data, in 2011 only 5.6% of children in rural areas received no vaccinations as compared to 2.4% in urban areas (see Figure 3). The percentage of children receiving immunisations against measles increased from 59.6% in 1997 to 76.2% in 2011, while child immunisation rates for diphtheria, pertussis and tetanus increased from 57.5% to 81.5% over the same period.

2. Achievements in maternal health

Despite the devastating impact of HIV and AIDS and the slightly differing estimates, overall the maternal mortality ratio (MMR) in Mozambique has improved since 1990, unlike in many other countries in southern Africa that have also had high HIV prevalence (such as Botswana, Lesotho, South Africa, Swaziland, and Zimbabwe). According to DHS data, the MMR in Mozambique declined from 692 to 408 between 1997 and 2011 (a fall of 41%) (see Table 1). Estimates by the Maternal Mortality Estimation Interagency Group indicate that the MMR dropped from 910 deaths per 100,000 live births in 1990 to 490 deaths in 2010, representing a decline of 46% over the 20-year period. At an average annual rate of decline of 3.1%, Mozambique is making slightly faster progress than the rest of sub-Saharan Africa, but rates remain above the regional average (which includes South Africa).

Table 1: Mozambique maternal mortality rate estimates based on household surveys

Year	MMR (deaths per 100,000 live births)
1997 (DHS)	692
2003 (DHS)	408
2007 (Census)	500
2011 (DHS)	408

Source: DHS (2011)

The HIV epidemic has had a dampening effect on MMR progress in Mozambique, as in the rest of southern Africa. Yet after an initial period in which HIV prevalence steadily increased, the country has managed to stabilise it at around 11% since 2004/05 while at the same time reducing the number of new infections. Testing among expectant mothers increased from 12% in 2005 to 87% in 2010. The number of women attending antenatal clinics in Mozambique is above the sub-Saharan Africa average.

What are the factors driving change?

While the changes in the enabling environment were integral to improved primary-health outcomes, three key factors have contributed to improved health outcomes in Mozambique in the past 20 years:

- A policy framework prioritising primary health and tackling HIV and AIDS, supported by increased and more effective financing.
- The steady expansion of health services and facilities in under-reached areas.
- Rising demand spurred by education and outreach efforts.

‘When I arrived in 2005 there were districts without a single doctor, now all districts have at least a general doctor’ – Former doctor and ministry official

Mother and child at Maputo HIV clinic. Photo: © Talea Miller, courtesy of PBS Newshour

1. Better health policy framework

Rebuilding the primary health care system, with maternal and child health at its centre, has been the government's top health priority since Mozambique's civil war ended in 1992. The reconstruction of the health sector was guided by the Health Sector Policy 1995-1999 and the Health Sector Recovery Program. These policies put the emphasis on: primary health care, with particular attention to maternal and child health; immunisation and communicable disease control; the rehabilitation of infrastructure and improvement of the quality of care; providing better incentives to medical staff; and strengthening logistical and administrative management.

The first large-scale peacetime health programme, the Integrated National Plan, was launched in 1995 and was complemented by the World Bank-led multi-donor Sector Investment Programme. Donors have had a strong influence on policy since the end of the war, with the focus on maternal and child health also reflecting donor priorities.

2. Improvements in health financing

The developments in health financing over the past two decades have been significant in enabling improved service delivery in three main ways. Firstly, there has been an increase in resources allocated to health, both from domestic and external sources. While total health expenditure as a share of GDP has remained more or less constant from 1995 onwards (between 4% and 7%), considering the substantial levels of economic growth during this period, the resources allocated to health have increased greatly in absolute terms. Total health expenditure (constant in 2005 US dollars) has seen a four-fold increase between 1995 and 2011 (from $159 million to $661 million), with health expenditure per capita (purchasing power parity) going from $17 in 1995 to almost $66 in 2011 (WHO Global Health Expenditure Database). External funding has been the major source of financing for the sector, showing an upward trend from 2002 onwards, reaching 70% of total health expenditure by 2011.[1] The general government expenditure on health has also increased from $102 million in 1995 to $274 million in 2011.

Secondly, changes in financing mechanisms gave way to the adoption of sector-wide approaches (SWAps) – including Sector Budget Support – which enabled the harmonisation of aid, resulting in more rigorous policy-making processes and annual planning, budgeting and monitoring systems and better coordination by the health ministry. According to key informants, the use of common funds has also been key to filling funding gaps and keeping health facilities running while waiting for budget disbursement.

Finally, public financial management reforms have allowed for better traceability, which in turn has facilitated a growing share of aid going on-budget and the ability to

1 Donors have progressively prioritised health in their allocations, with the share of health in total Official Development Assistance commitments increasing from 10.1% in 2000 to 22.1% in 2010 (WHO, s/n).

distribute resources more equitably. It has also helped to reduce budget execution delays (from 59% in 2005 to 93% in 2011 – *Ministério da Saúde*, 2005 and 2011), which has had positive implications for service delivery. This was done by establishing an integrated financial management information system (e-SISTAFE – *Sistema da Administraçao Financeira do Estado)* (Lindelöw et al., 2004).

3. The steady expansion of health services

Improvements in maternal and child health are linked to improved access to facilities and health care, particularly in more remote areas. Overall access has significantly expanded over the past two decades. In addition to increasing the network of facilities, there has been a focus on reducing distances to health centres, especially in rural areas in the north and centre of the country, which had been particularly severely impacted by the war. The expansion of infrastructure and health personnel was a clear priority for the Ministry of Health in the post-conflict period and a series of measures were put in place to make health services available to the population, particularly in rural areas.

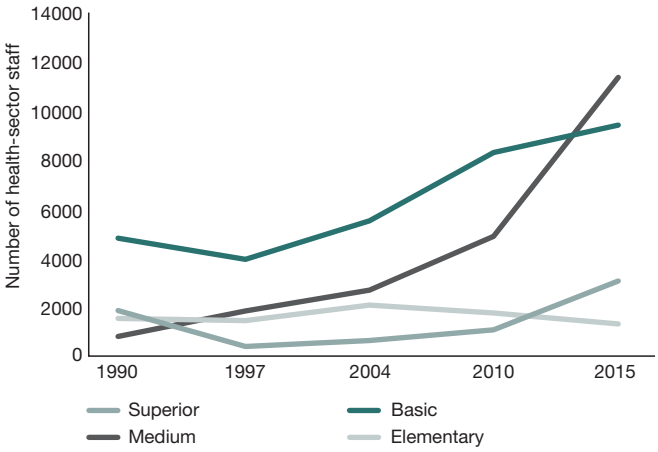
As such, the number of health facilities rose from 362 in 1975 to 1,432 in 2012 (*Ministério da Saúde*, 2012), leading also to a reduction of the population per health centre from an average of 57,000 in 1997, to 23,000 in 2007 (*Ministério da Saúde*, 2007). The rate of improvement was particularly fast in the first post-war decade. Between 1993 and 1999, over 400 facilities were newly built or rehabilitated. The average number of 'care units'[2] per inhabitant increased from 2.34 to 3.26. Furthermore, the provinces most deprived of health centres have seen a drastic decrease in their ratio of population per health centre: Zambezia, where the situation was most dire, saw a decline from 133,000 inhabitants per health centre in 1997 to 32,000 ten years later (see *Ministério da Saúde*, 2004-2012).

As a result of the growth in health facilities and in health personnel, the Mozambican population has registered a gradual increase in the health care received per inhabitant, with the annual number of external consultations per inhabitant almost tripling between 1992 and 2011, albeit from a very low base, from 0.36 to 1.20, according to health ministry data provided in joint annual health sector reviews (*Ministério da Saúde,* 2004-2012). Other indicators of increased utilisation of health facilities, discussed in the next section, paint a similar picture, and access to health services has clearly improved during the past two decades.

4. Human resources policies and efforts to increase the number of health workers

While the size of Mozambique's health workforce is smaller than the regional average, the country has widened access to care by upgrading staff skills, training medical doctors and contracting expatriate doctors (see Figure 4).

Figure 4: Numbers of health-sector staff by level of training



Source: Ministério da Saúde, (2004-2012)

The Manpower Development Plan 1992-2002 details these efforts to re-establish services and it has been suggested that the strategy 'was very significant and played a major role in steering the recovery efforts in the health sector in the right direction' (Visser-Valfrey and Umarji, 2010: 19) as it created a framework for the development and recovery of the sector and provided donors with a common strategy to support.

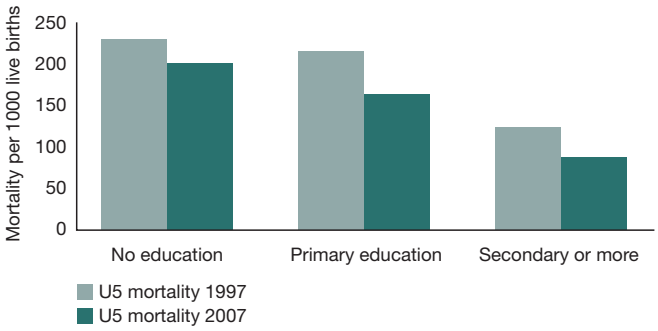
Strategies to increase human resources in the health sector in Mozambique have been described as innovative and efficient by observers, including the World Bank, for whom 'the Mozambican track record is one of innovation, steady improvement, meeting targets and adaptability. With limited human resources, much has been achieved' (cited in Ferrinho and Omar, 2006). There have been increases in national medical doctors' wages to limit the 'brain-drain', training of nurses and medical technicians to fill the need for clinical care in rural areas, and task-shifting at all levels of the health system. According to a recent report, *'the impact of the human resources development strategy and plan is beginning to show, with numbers and densities of health workers improving'* (MoH and TARSC/EQUINET, 2010).

5. Rising demand spurred by education and community outreach

Mozambique provides an example of how stimulating demand may contribute to positive effects on maternal and child health. The DHS data from Mozambique shows that improving access to education for girls, particularly following the completion of primary school, is strongly correlated with the greater use of health facilities. Higher levels of education for mothers are associated with declining under-five mortality rates: the higher the education level of the mother, the lower the mortality levels in under-five-year-olds (see Figure 5, overleaf).

2 Care units are calculated by the Mozambican health service on the basis of the time spent on the service, and provide a measure of service output and service utilisation. The care unit gives a weight to each of the five major health services that together account for the vast majority of service outputs: vaccinations, outpatient consultations, maternal and child health consultations, deliveries, and hospital-bed days (Chao and Kostermans, 2002).

Figure 5: Under-five mortality by level of education of mother



Source: DHS (various years) and census data

Community health workers (CHWs), known as *Agentes Polivantes Elementares* (APEs), have played an important role in the story of community involvement and stimulating demand in Mozambique. While CHWs are not unique to Mozambique, the country has a long-standing history of community involvement in the health sector, which continued even during the civil war thanks to support from non-governmental organisations. The CHW programme has expanded in recent years and has been integrated into national health resourcing plans. It is regarded by some as 'the only CHW program that is well structured, and with clear curriculum and training materials agreed on by all the partners. All other programmes are rather ad hoc in nature and not nation-wide' (Bhutta et al., 2010: 344).

The efforts of APEs have been of particular relevance for maternal and child health and are likely to have contributed to progress in this area. According to one informant, the APEs have been significant in 'creating awareness and convincing the population of the benefits of using health centres'. This is particularly acute given the limited number of doctors and the difficulties in transport.

What are the challenges?

1. Quality of care

The overarching concern listed by informants related to the quality of health services. According to one informant, 'the effort in getting to the health facility is not compensated with the service they might find there.' The poor training of many health workers and frequent absenteeism create a barrier to the improvement of health outcomes. Despite very ambitious plans based on World Health Organization best practice, the health system continues to face severe limitations in terms of staff and equipment, and frequent medicine stock-outs.

2. Improving access to health services

Despite supply-side improvements, distances to facilities remain a huge problem. According to one official: *'there has been improvement on training nurses to deal with obstetric complications and those are no more the main causes of maternal mortality, so that now the main problems with maternal death has to do with delays to arrive to the health centre due to lack of a transport system and precarious roads. In such cases, we were able to save the mother but not the child.'* A central component to improving access to health services is addressing the persistently low rate of contraceptive use, which has repeatedly been shown to be central to reducing maternal mortality.

3. Geographic and social inequality

Despite the improvements made in reducing disparities, inequalities in access to, and quality of, health services remain a significant challenge. Furthermore, the gap between rich and poor seems to be increasing: according to one informant, the country's new mineral wealth in particular is leading to 'a class of people who are incredibly rich' which is contributing to higher prices, especially in Maputo, as well as a two-tier health system which strongly incentivises doctors to move to private clinics.

4. Inadequate domestic financing and aid dependence

Given the massive role of donors in funding health programmes, Mozambique is highly vulnerable to cuts in aid. Some donors are pulling out of Mozambique owing to the economic crisis, domestic fiscal pressure or aid fatigue, while others are reassessing the level of their commitment. It is unclear whether the Mozambican government can fill the gap. Furthermore, high levels of aid dependence have led to conflictual relationships between donors and the government; not only has this complicated planning, but when the ministry is unclear when and how much it will receive, national ownership is also impaired. As a result, finding a way of supporting the sector at, and above, current levels through national sources of financing – particularly from the booming extractives sector – will be essential.

Lessons learned

Mozambique's experience illustrates how a war-torn country with a decimated health infrastructure, few funds and very limited capacity can develop and strengthen its health system, rehabilitate and extend health infrastructure, and train and deploy staff (including a range of community-based cadres) throughout the country.

- **A focus on preventative care.** Central to Mozambique's improvements, particularly in child health, has been a massive expansion of immunisation programmes and preventative measures that have driven the reduction in child mortality rates. There have been extensive outreach campaigns in villages. Replicating this level of outreach and awareness in the more culturally sensitive area of maternal and women's health will be essential to achieving a similar scale of progress.
- **A sequenced reconstruction and expansion effort.** In the post-war setting, addressing the deterioration of the health system, with emphasis on maternal and child health, was accorded a high priority. The first decade of reconstruction in particular was characterised by rapid and significant results, especially in the area of maternal and child health. While many community-level programmes are relatively recent, they are likely to remain essential to consolidating the gains made to date. With rural poverty rates persistently high, a more active analysis of the indirect costs entailed when seeking health care is now underway in order to determine how best to address these, both within the health system and through education, rural development and macroeconomic policies.
- **Reducing human resource costs through task-shifting.** Mozambique's focus on task-shifting and training maternal and child health nurses, *tecnicos* and APEs has demonstrated how low-level health staff can be trained to take on higher-level tasks relatively quickly even within the context of severe resource constraints.
- **Financing mechanisms allow for aid to be harmonised and reach lower-level facilities.** The early implementation of SWAps and their gradual improvement over time has helped to reduce the initial fragmentation of aid, allowing for better harmonisation among an extensive array of donors, which in turn helped the health ministry to gain more control and ownership. At facility level, the use of common funds has been integral to filling funding gaps and keeping health facilities running, supporting drug procurement and topping up salaries while waiting for budget disbursement.

This summary is an abridged version of a research report and one of a series of Development Progress case studies being released at **developmentprogress.org**

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This publication is based on research funded by the Bill & Melinda Gates Foundation. The findings and conclusions contained within are those of the authors and do not necessarily reflect positions or policies of the Bill & Melinda Gates Foundation.

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