

JUNE 2010

# McKinsey Quarterly

## Strengthening sub-Saharan Africa's health systems: A practical approach

**Systemwide barriers impede health care delivery in the region. A comprehensive approach that strengthens key elements of national health systems is required to save lives.**

Lowell Bryan, Michael Conway, Tineke Keesmaat, Sorcha McKenna, and Ben Richardson



Painted by Hemed Mbarouk Hemed

Tinga Tinga art from Tanzania  
Tingatingastudio.com

**In recent decades**, global attention to the harrowing state of health in sub-Saharan Africa has increased dramatically. Funding to combat the major health problems there has reached unprecedented levels, and marked improvements have been made. In Zanzibar (Tanzania), for example, malaria deaths have been cut substantially. And in Uganda, maternal mortality has dropped by more than half.

Despite these improvements, the health of the vast majority of people in sub-Saharan Africa remains in jeopardy. From 1990 to 2005, life expectancy slid by more than 2 years, to 47.1 years. What's more, millions of Africans still suffer from diseases that are relatively simple to prevent or treat.

As the region's health systems struggle to meet basic standards of care, many experts have come to believe that systemwide barriers to its delivery are preventing greater progress. A comprehensive approach is required to overcome these barriers. But how can systemwide changes occur in countries that struggle to provide even basic care? To address this issue, the Touch Foundation, a nonprofit organization active in Tanzania, and McKinsey recently conducted an intensive investigation of the health system in the Lake Zone, in the northwest part of the country. This area was chosen because it is small enough to be studied in detail but large enough to serve as a suitable geographic proxy for Tanzania as a whole and, potentially, for the entire sub-Saharan region.

These initiatives will require new investments, and we do not underestimate the difficulty in finding the necessary funds. But because the initiatives are targeted, their impact would be disproportionate to their cost. The diagnostic approach we used in the Lake Zone provides a way to move past the debate about whether countries in sub-Saharan Africa should pursue "vertical" programs targeted to specific disease outcomes or "horizontal" efforts to strengthen health systems. Any health system, in sub-Saharan Africa or elsewhere, could adapt this approach.

### **The challenges**

The poor health of so many people in sub-Saharan Africa has been widely known for years. Over the past decade, however, Africa's health care crisis has received renewed attention because of factors such as the spread of HIV/AIDS and a greater understanding of the link between health and economic development.

These efforts have produced important results. In a growing number of African nations, the catastrophic rate of new adult HIV infections appears to be falling: according to the UNAIDS (the Joint United Nations Programme on HIV/AIDS), the number of new infections in sub-Saharan Africa declined by approximately 25 percent in 2008. Similarly, tuberculosis rates are slowly decreasing across the region. Malaria incidence and mortality are declining not only in Zanzibar but also in several other parts of Africa.

Nevertheless, the region continues to face profound health challenges. Tanzania, for example, has made progress against childhood mortality, yet one in every nine Tanzanian children still dies before age five. And the country’s maternal mortality rate remains stubbornly high, despite almost three-quarters of these deaths being preventable.

### **Diagnostic approach**

Our investigation aimed to identify the primary barriers thwarting the delivery of preventive health services, diagnostic services, and effective treatments in the Lake Zone. To define the effort, we constructed four different clinical pathways that describe the journey patients take through the health system. Because each pathway focused on a specific health problem—malaria, child health, maternal health, and trauma care— together they provided insights into how the system functions as a whole (see sidebar, “Using clinical pathways to understand care delivery”).

This innovative approach provides several benefits. It offers a window into how patients actually experience the health system as well as a comprehensive view of how care is delivered on the ground. In addition, by enabling comparisons between actual care delivery and best-practice international guidelines, it illuminates gaps between them. More important, it exposes the barriers that allow these gaps to persist.

### **The primary barriers to effective care**

Three mutually reinforcing problems make up the most important barriers in all four pathways: access to primary care is at most only one-third of what the Lake Zone requires, the workforce is only a fraction of the size needed, and several operational weaknesses prevent the system from functioning well.

#### **Insufficient access**

In the Lake Zone, the greatest gaps in delivery occur in primary care. About two-thirds of it is provided by the public-health system, the remainder by nonprofit organizations, private enterprises, or the informal sector (traditional healers or moonlighting health workers, for example). Primary care delivered in the public sector is mostly free, but private and nonprofit organizations often charge user fees. In addition, patients often opt to pay out of pocket for services delivered in the informal sector. Despite the services all these groups provide, primary care in the Lake Zone remains woefully insufficient.

Two types of facilities deliver primary-care services there: dispensaries and health centers. Dispensaries are small clinics that provide basic consultations, diagnostic services, treatment for routine conditions, and referrals for more advanced treatments. Health centers provide these services as well as certain more advanced ones. The shortage of both types of facilities makes it difficult for people, especially mothers and children, to gain access to primary care conveniently. Further, the facilities’ effectiveness is compromised by significant shortages of medical supplies and skilled staff and by the frequent absence

of electricity and clean water. Within all four clinical pathways we studied, we found that the greatest gaps in care delivery occur at the dispensaries, with the health centers faring little better.

#### An acute shortage of health workers

Health care workers are in short supply across sub-Saharan Africa, especially in Tanzania. The World Health Organization (WHO) estimates that the country should have a medical workforce of about 92,000. The government aspires to have an even larger one—approximately 140,500—by 2019. But at present, the country has only about 25,400 health care workers.<sup>1</sup> One reason for the shortage is an insufficient number of training programs: Tanzania has fewer than 100 training institutions, which together produce fewer than 4,000 graduates a year. Up to 30 percent of the country's health workers leave the system within a year after training. Those who graduate often take up other forms of employment as a result of low salaries (with payments often delayed by over a year), the remote location and poor quality of most primary-care facilities, the lack of choice about initial postings, and the absence of access to additional training, among other reasons.

Health facilities thus often lack workers with the skills to meet basic standards of care. According to government guidelines, dispensaries should be staffed by eight health workers, but in practice most have only one or two. Health centers are supposed to have about 30 staff members but typically have less than half that. Too often, the health workers at these facilities do not have appropriate training or access to continuing medical education. In addition, productivity is low; on average, staff members spend only about 40 percent of their work time on patient care.

#### Systemic weaknesses

In addition to these problems, three systemic weaknesses prevent the Lake Zone's health system from achieving better results.

**Lack of money.** The WHO's Commission on Macroeconomics and Health has estimated that most developing nations need to spend \$30 to \$40 per person a year to reach the United Nations' Millennium Development Goals (MDG). Tanzania's annual per capita spending is only about \$20.

**Weak management practices.** Few dispensaries, health centers, and hospitals use effective performance-management tools. Many incentives for health workers are misaligned—workers are rewarded for tenure, not patient outcomes, for example. In addition, the Lake Zone lacks the information systems to support health care delivery; one reason

<sup>1</sup>In Tanzania, qualified health workers include specialists (surgeons and pediatricians, for example), medical officers (doctors with at least six years of training), clinical officers (who typically undergo three years of training), assistant medical officers (clinical officers who have practiced for at least three years and undergo another two of training), and nurses (who receive three or four years of training). They also include the recently introduced clinical assistants (who will receive two years of training) and other ancillary groups, such as pharmacy and laboratory technicians.

supply shortages are common in dispensaries and health centers is that the health system has no good way to track stock levels. The system's supply chain also suffers from weak managerial oversight and poor procurement and distribution processes.

*Mind-sets and behavior.* Interviews with staff members (especially those working in primary care) suggest that many are demoralized by the same factors that cause their colleagues to leave health care. Patients detect this demoralization; many view health workers as unmotivated, unaccountable, and unskilled. Many patients therefore have a poor perception of the health system overall and delay seeking needed care, seek it only at hospitals (which are seen as providing better care), or pay for it out of pocket.

### **Addressing on-the-ground problems**

These problems reinforce one another: low financing, for example, translates to low salaries and supply levels, which contribute to low morale, which then leads to low productivity and retention rates. If health care is to be delivered effectively in the Lake Zone, this vicious circle must be turned into a virtuous one. Better and more readily available services and supplies could attract more patients, which could lead to increased revenues and salaries and, eventually, to higher morale, productivity, and retention.

#### *Improving access to primary care*

Extending the reach of primary care and improving its performance requires action on several fronts simultaneously—including new delivery models to increase access, a greater role for nonprofit and private organizations in service delivery, and the introduction of performance incentives to improve it.

Other developing countries use three innovative delivery models to provide low-cost primary care. Community health workers have only limited training but undertake health promotion activities and serve as liaisons to more highly trained colleagues. Because almost every village can have its own community health worker, the basics of health care delivery are available to all. Mobile health care is a way to extend the reach of dispensaries and health centers. Health workers regularly travel to surrounding unserved villages (one day a week, for example), bringing basic medical supplies and communication tools. Call centers staffed by nurses (with oversight from doctors) can support both community and mobile health workers, who use mobile phones or other communication technologies to consult with call center staff.

To enhance performance in the public-sector dispensaries and health centers, the health system could offer its workforce incentives. At present, these facilities are staffed by salaried employees with little motivation to improve care delivery. Many developed countries address a similar problem by basing reimbursement on a combination of capitation and some kind of fee-for-service or pay-for-performance model to balance the

need to increase service against budget limitations. Tanzania has begun to move in this direction; for example, it now offers pay-for-performance bonuses to health workers who meet certain infant- and maternal-care objectives.

Tanzania could go further. Many countries encourage ownership of some forms of care delivery. Even in publicly financed systems such as the UK National Health System, for example, most general practitioners own their practices. Tanzania could use similar approaches.

One innovation that has been used successfully elsewhere is to encourage nonprofit and private organizations to provide more primary care. In some developing countries, dispensaries and health centers that are owner-operated or managed through a social-franchising model complement public-sector facilities. In Kenya, for example, more than 65 franchised dispensaries provide health care to more than 350,000 patients annually. The cost of these facilities is covered not only by government spending and donor contributions but also by payments from patients—which gives staff an incentive to improve care delivery. Having Tanzanians pay for some health services is not a new idea; estimates suggest that in 2006 alone, they spent \$208 million to \$265 million out of pocket on health care.

To work properly, incentives must be supported by detailed operational data on the number of patients seen and the conditions treated. Routine collection of such data is therefore essential. The rapidly expanding use of mobile phones makes this feasible even in resource-poor environments.

#### Extending the workforce

Tanzania's Twiga Initiative aims to double the country's capacity to train health workers (to 7,500 a year, from 3,850). Although this plan could increase the health system's workforce to 48,000 (from 25,000) by about 2019, staffing will still be much too low. Four additional measures should be considered: new kinds of workers with shorter training requirements, as well as improved staff retention, training capabilities, and staff productivity.

Most health workers in Tanzania receive at least two years of training and an average of three. However, average training times could fall considerably if two new types of health workers were introduced: one would provide basic primary care at dispensaries, the other the forms of community outreach described above. The experience of other developing countries suggests that these workers could be educated in about one year. In this way, Tanzania could educate another 26,500 workers within ten years.

These new health workers will not reduce the need for staff members willing to work in rural areas. To help attract health workers (especially doctors and nurses) to the countryside and encourage them to remain there, Tanzania could offer student loans and

---

## Using clinical pathways to understand care delivery

The Lake Zone investigation was based on the idea that the best way to identify systemwide barriers to better health care delivery would be to understand how people use a health system and how they experience it. Thus, the investigation used “clinical pathways” to map the routes patients take from the onset to the resolution of health issues.

To identify the barriers, the investigation examined four different pathways, each reflecting a different facet of the system’s performance. Malaria was selected to study how well the system addresses communicable diseases. Trauma was included because the treatment of accident victims reflects the performance of hospitals. Child and maternal health helped illuminate why the Lake Zone has not made greater progress in reducing mortality in these two important areas. Maternal health is also widely seen as an indicator of

the performance of the whole health system. Together, these four pathways revealed how well it provides preventive and diagnostic services and effective treatments.

To establish how care is actually delivered, the investigators visited more than 40 hospitals and clinics and conducted focus groups with patients as well as interviews with more than 200 frontline health professionals, including doctors, nurses, and pharmacists.

When compiled, this information revealed many gaps in care delivery in each pathway. Further analysis revealed that two sets of barriers underlay all the gaps: problems impeding on-the-ground care delivery and the system-wide weaknesses allowing them to persist.

incentive packages, as well as an increased commitment from local districts to maintain the quality of health care facilities. In addition, the country could introduce e-learning and active mentorship programs to improve ongoing training.

Tanzania’s hospitals will play a crucial role in expanding workforce-training programs, creating and delivering e-learning capabilities, and developing new mentorship programs. They should enhance their clinical-leadership, performance-management, and talent-management capacities and form networks to establish more effective referral arrangements from primary-care providers and among district, regional, and tertiary hospitals. Such networks could also deliver continuing medical education within catchment areas and increase collaboration among facilities. Hospitals could partner with international educational institutions for access to information about recent advances in care as well.

Tanzania cannot, however, solve its workforce crisis without improving the productivity of its workers—currently at 40 percent of best-practice levels—to about 55 percent (a reasonable target by international standards). Hospitals could lead the way by undertaking performance-improvement programs to increase their own productivity and expose trainees to more efficient methods, which the trainees could then use in primary care. A standardized performance-improvement program aimed specifically at dispensaries and health centers could have a significant impact if staff members had appropriate incentives and were open to change.

### **Creating a sustainable health system**

Three fundamental changes must occur for the health system to improve care in a real and substantial way. None will be easy to make, but all are necessary.

#### **Increased funding**

Although the health system must receive more funding, current economic conditions, both in the world and Tanzania, make significant increases unrealistic. We therefore propose new models of primary care and new ways to extend the workforce. These changes could increase the health system's coverage in the Lake Zone significantly, in an efficient and economical way. Today, the system reaches only about one-third of the region's population. Without changes in the way the system operates, funding might therefore have to triple for it to provide adequate health care to the entire population. By contrast, our recommendations would double coverage in the Lake Zone for a 35 percent increase in funding. Full coverage would be possible with a 70 percent increase.

Even these approaches will be a challenge to implement in the Lake Zone in the near term. In recent years, however, Tanzania's GDP has risen at twice the rate of population growth (6 percent versus 3 percent); even in 2008, the country posted a solid GDP gain. Thanks to this trend alone, Tanzania's per capita spending on health care should increase by 70 percent in 18 years. Furthermore, if GDP growth remains strong, the government might be able to increase the share of its budget devoted to health care to the level it embraced in the Abuja Declaration, which Tanzania and 43 other African countries signed in 2001, committing themselves to spending 15 percent of their budgets on public health.

If the budget allocation rose from its current level (about 11 percent) to the promised 15 percent, the system's public funding would rise by almost 36 percent—reducing the time needed to achieve a 70 percent increase to 13 years. Some gains from GDP growth would, however, be offset by health care inflation. Nevertheless, we estimate that by 2019, Tanzania's per capita health care spending could increase by 85 percent. Indeed, even if GDP growth was lower in 2009 than it had been previously, Tanzania could boost health care funding considerably by 2019.

These calculations assume that the percentage of total health care funding contributed by the private sector remains steady. For this to happen, both out-of-pocket spending by Tanzanians and overseas development aid would have to go on rising in line with GDP growth. Given the current recession, maintaining such growth in the near term will be another challenge. However, donors may value the chance to act as catalysts for the needed change, especially if their money serves to prime the pump for a decade while the country builds a sustainable financial model for domestic funding. Whether Tanzanians can afford higher total out-of-pocket payments is unclear, but by offering innovative care models with better service delivery, private or nonprofit providers might capture a greater share of the payments currently going to the informal sector.

#### Better management capabilities

The implementation of our ideas to improve primary care and workforce capacity will require significant oversight from Tanzania's Ministry of Health and district officials. Thus, they will need to strengthen their leadership capabilities, especially their ability to monitor the delivery of ambitious initiatives and to provide effective stewardship for the system.

Information technology can help; officials could, for example, harness the power of mobile phones to collect data and manage operations in individual facilities. IT could also significantly improve the system's supply chain to ensure that adequate amounts of drugs and equipment are available when needed. Nonprofit and faith-based organizations in Tanzania report that they have far fewer stock-outs and lower supply chain costs than the government-run Medical Stores Department. Their results suggest that Tanzania could strengthen the department's performance, open the provision of supplies to private competition, or both.

Routine data collection would let officials monitor demand for services and the deployment and productivity of the staff at each facility. Once aggregated, data could be used to survey health trends, spot emerging issues, and assess the performance of the whole health system.

Providers outside the public system could play an important role in extending its reach, but the ministry would have to ensure that they delivered quality care at a reasonable price. Although greater oversight of nonprofit and private providers is needed, the regulations should help the latter operate sustainably anywhere, not just in high-income areas.

#### Better mind-sets and behavior

Pay-for-performance bonuses and other incentive programs would motivate health workers to provide high-quality care efficiently. Improved delivery of supplies would reduce frustration. Better management capabilities would help ensure that workers were paid on time. To further improve the attitudes of health workers, the system should

## Related thinking

“Tanzania’s health care crisis”

“How private health care can help Africa”

“Addressing Africa’s health workforce crisis”

“Building better partnerships for global health”

give them management training and other skill-development opportunities and a more supportive working environment. And it should ensure that its clinical leaders are effective role models.

A mind-set shift among patients is needed as well so that they seek needed treatments more promptly. The presence of community health workers in each village may help change mind-sets by making patients see that the health system is addressing their immediate needs.



Our experience in other sub-Saharan countries suggests that many of them face similar problems. An investigative approach similar to the one described here can enable countries to identify the specific barriers that prevent them from delivering health care effectively and the initiatives that would have the greatest impact in overcoming the barriers. Those countries can strengthen their health systems, make significant progress in improving care delivery, and—most important—save many lives. ○

The authors wish to thank Angus O’Shea, the Touch Foundation’s former executive director, for assistance in writing this article.

**Lowell Bryan**, a director in McKinsey’s New York office, is also president of the Touch Foundation, which focuses on health care issues in Tanzania. **Michael Conway**, a director in the Philadelphia office, leads the global health care practice. **Tineke Keesmaat**, a consultant in the Toronto office, has worked with numerous clients around the globe on issues related to strategy and performance improvement. **Sorcha McKenna**, an associate principal in the Dublin office, has served numerous clients on primary care commissioning and improvement. **Ben Richardson**, a principal in the London office, leads McKinsey’s work in primary care and has worked extensively on health system strategy and performance improvement. Copyright © 2010 McKinsey & Company. All rights reserved.