



Saving mothers' lives in Namibia

Namibia's ongoing efforts offer lessons for other countries seeking to improve maternal health, as well as for health programs tackling HIV/AIDS, malaria, tuberculosis, or other conditions.

**Kathleen
McLaughlin,
Marc van Olst, and
Ronald Whelan, MD**

Up to a half a million women die each year around the world because of complications arising from pregnancy or childbirth. The majority of these deaths occur in sub-Saharan Africa.¹ Since they are largely preventable, they represent a tragedy playing out every day across the continent. Progress on maternal health there is hampered by health systems that are understaffed, underfunded, and overwhelmed—and thus too fragile and fragmented to deliver the required level or quality of care. Consequently, many countries in sub-Saharan Africa will struggle to meet the United Nations’ Millennium Development Goals for reducing child and maternal mortality by 2015.²

Nonetheless, some countries are making headway. Our recent work in Namibia, for example, suggests that coordinated, targeted interventions led by local stakeholders can accelerate improvements in maternal-health outcomes. The key is to work with local health leaders to develop solutions that improve the quality of health care, increase access to it, and promote its early uptake.

The resulting interventions being pursued in Namibia are straightforward and practical—improvements in the training of midwives, cheaper antenatal clinics inspired by the design of shipping containers, operational fixes to reduce ambulance response times and wait times at clinics, a radio talk show to educate patients and stimulate demand—yet are collectively powerful. A closer look at Namibia’s ongoing efforts offers lessons for other countries seeking to improve maternal health, as well as for health programs tackling HIV/AIDS, malaria, tuberculosis, or other conditions.

Preventable tragedies

The global health community has long understood that improving the health of women during pregnancy, childbirth, and the postpartum period represents a massive opportunity not only to save women’s lives but also to improve neonatal, infant, and child health outcomes directly. Further, most maternal deaths in low-income countries are preventable—arising largely from pregnancy-induced hypertension, hemorrhage, or sepsis. Still, up to a quarter of a million women die in sub-Saharan Africa each year because of problems associated with pregnancy or childbirth.

In Namibia, the incidence of maternal and neonatal mortality has doubled in recent years (Exhibit 1). A woman in Namibia today is almost 100 times more likely to die during pregnancy than a woman in Europe. This difference partly reflects Namibia’s high rate of HIV/AIDS infection (more than 20 percent of the women at the country’s antenatal clinics are HIV-positive) and partly reflects limited access to health facilities (Namibia has the world’s second-lowest population density, with barely two people per square kilometer).

In a bid to stem Namibia’s rising maternal-mortality rate, the country’s Ministry of Health and Social Services (MOHSS), in partnership with McKinsey, the Synergos Institute, and the Presencing Institute from the Massachusetts Institute of Technology (MIT), established the Maternal Health Initiative, or MHI (see sidebar, “About the initiative” on p. 110). It focuses on a microcosm of Namibia’s health system to develop a replicable approach for improving maternal health care across the country.

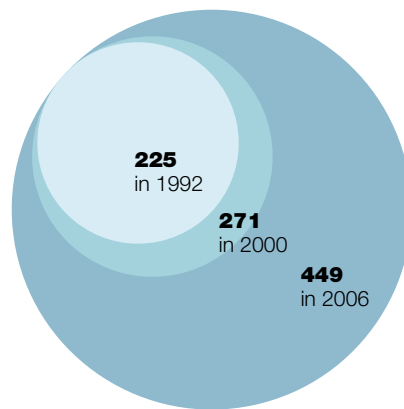
¹ World Health Organization (WHO), United Nations Children’s Fund (UNICEF), United Nations Population Fund, and the World Bank, *Maternal Mortality in 2005*, World Health Organization, 2007.

² In addition to meeting other social, educational, and health targets, the United Nations seeks to reduce child and maternal mortality rates and drastically reverse the spread of HIV/AIDS and malaria by 2015. For details, see un.org/millenniumgoals.

Exhibit 1

Maternal mortality has doubled in Namibia in recent years.

Namibia's maternal-mortality ratio,
deaths per 100,000 live births



Source: Health and Social System Services Review, 2008, Namibia's Ministry of Health and Social Services; *Monitoring Emergency Obstetric Care*, 2006; McKinsey analysis

The MHI chose to set up its pilot project in the Khomas region, the most populous of Namibia's 13 regions and the one with the worst uptake of antenatal services.³ (Less than 7 percent of pregnant women there receive antenatal check-ups during the first trimester.) Within Khomas, the team focused on four of the largest suburbs of Namibia's capital, Windhoek: Hakahana, Katutura, Okuryangava, and Samora Machel, which have a collective population of about 80,000. It focused in particular on these areas' busiest hospital and primary care clinics, Katutura Hospital and Okuryangava Clinic, respectively (Exhibit 2).

Next, three subteams were formed to design and develop prototype maternal-health solutions for problems associated with community

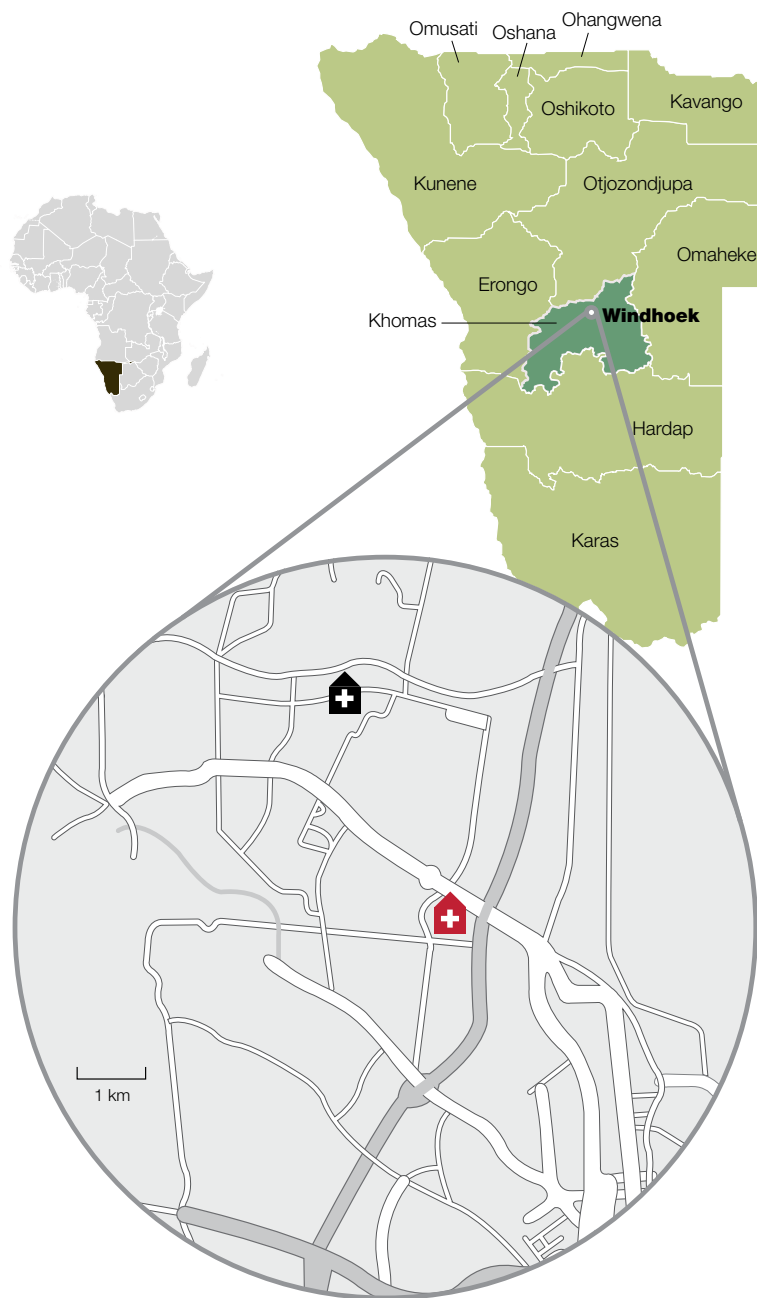
mobilization, the capabilities of health workers, and health system operations, respectively. Each subteam included a variety of local front-line health leaders and other stake holders—for instance, nurses, social workers, ambulance drivers, and middle managers.

Finally, to ensure local ownership and accountability (as well as to expand future initiatives across Khomas), a regional delivery unit was established under the guidance of the chief medical officer in Khomas. It provides managerial oversight, monitors the performance of the region's improvement in maternal health service delivery, and integrates the activities of the subteams with those of the health ministry's regional team. The subteams quickly identified and

³Common antenatal services include measuring blood pressure, conducting blood and urine tests, monitoring weight, taking fundal height measurements, and answering general questions about diet and fetal movements.

Exhibit 2

Where we worked: Inside the Maternal Health Initiative.



Namibia

Total population: 2,047,000

Life expectancy at birth: 59 years (men) 63 years (women)

Total expenditure on health per capita: \$338

49% of population lives below international poverty line of \$1.25 per day (2007)

An estimated 160,000 to 230,000 people (all ages) live with HIV (2007)

More than 60% of rural population lives farther than 5 km from a health facility and cannot afford transport; pregnant women often must travel on foot to reach a health care facility

Khomas region

Most densely populated of Namibia's 13 regions

Region with highest number of facility-based deliveries (8,915); nearly 19% of all such births in country

Around 7% of women get antenatal checkups in the first trimester



Katutura Hospital

Situated in Katutura, one of the largest communities in Khomas, with ~40% of total population of the region (~80,000 people)

Largest hospital in the region, with 400–500 beds

Waiting time at antenatal-care clinic: ~6 hours

Antenatal patients in 2007: 4,997



Okuryangava Clinic

The busiest clinic in Khomas

Situated in the heart of Katutura, the clinic's full-time nursing complement of 8 registered and staff nurses attend to ~120 patients per day

Antenatal patients in 2007: 0

Note: Figures are for 2006 unless indicated.
Source: World Health Statistics 2008

A woman in Namibia today is almost 100 times more likely to die during pregnancy than a woman in Europe



implemented several interventions to improve the supply of maternal care in Khomas and to raise demand for care among local women. While it is too soon to claim victory over Namibia's maternal-health problems, the results thus far are encouraging.

Supply-side interventions

Improving the access of patients to quality care is a vital step in improving health outcomes. In Khomas, the MHI and its local partners helped to bolster the quality of maternal care and to pilot novel ways of adding capacity to the system. They also introduced efforts to squeeze greater capacity out of the region's existing health assets.

Raise the bar on quality

In Namibia, the quality of maternal care has deteriorated in recent years—a fact reflected in a 2006 survey from the MOHSS, which found that less than 20 percent of the country's midwives could reliably diagnose and manage post-partum hemorrhage. Further, the ministry found that less than 40 percent of Namibia's midwives correctly monitored women in labor. What is more, the MHI team observed that, not uncommonly, more than five different midwives attended to a woman in labor during her delivery (global best practice promotes individualized care).

The quality of care during pregnancy was found to be significantly constrained by the lack of continuing education as well as by apathy and poor motivation among nursing staff. Mentoring and coaching practices have gradually fallen away as a result of staff shortages and turnover in critical positions. Katutura Hospital, for example, has only one full-time gynecologist, and doctors there do not typically stay in the department for more than two or three years.

In response, the MHI subteams worked with the hospital's superintendent and with nurses and doctors in the obstetrics department to develop and institute a skill-building program for clinical personnel. One important component was the creation of a mentoring role so that senior nurses could identify, coordinate, and offer in-service training for nurses and nursing students. Next, health workers at the hospital engaged with nearby private hospitals and local training institutions to learn best-practice training and clinical techniques. The team also visited training institutions in Cape Town, South Africa, where its members met with colleagues who had developed a best-practice curriculum and training manuals for midwives. These moves led to efforts to standardize midwifery training in the region and to the development of a skills-accreditation system.

Within six weeks, Katutura Hospital had developed its own in-service training curriculum and concluded its first training program. Subsequently, the nurses we interviewed reported feeling more confident in their ability to coach and mentor one another and to provide better care to patients. In-service training sessions are now held weekly, and program coordinators continue to look for best practices and innovative training methods. Further, to keep quality high, the MHI is introducing a formal process to investigate maternal deaths so that their causes can be determined and similar deaths prevented.

Finally, the hospital set its sights on shortening the antenatal unit's waiting times—over six hours, in most cases. The unit reduced them by 30 percent in less than a month by making a series of simple process changes: for instance, introducing a numbered ticket system for people arriving at the hospital and allowing patients to keep their records instead of handing them back to the charge nurse upon completing each of the nine stages of consultation. To encourage staff to focus on customer service, the unit created a patient satisfaction survey, whose results are posted daily, along with average waiting times, to encourage further improvement.

Expand access by adding capacity

More than 60 percent of Namibia's rural population lives five kilometers or farther from a health facility, and many people cannot afford transport to faraway clinics or hospitals. This reality was driven home for us when we encountered a group of pregnant women living under a tree outside a hospital in largely rural northern Namibia. Some of the women had been living there five months because they were afraid that they would not be able to reach the hospital in time once they went into labor.

The situation is nominally better in urban Katutura, where only the two hospitals provided antenatal care before the MHI. To get proper treatment, most women in the Khomas region had to walk more than five kilometers to reach a medical facility—and repeat the journey at least five or six times during their pregnancies.

A team of MHI participants therefore worked with a local NGO to help design a “container clinic” prototype that could be set up in outlying areas to increase access to care for rural women. The clinic—dubbed “CWIClinic” as a play on the word “quick” and an acronym for child, women, and infant clinic—is a modular, prefabricated, 15-square-meter structure the size and shape of

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Opening time at Okuryangava Clinic (October 2009).



The Okuryangava Clinic's staffers see its first antenatal patient (October 2009).

a shipping container. It can be assembled in just 48 hours, includes a fully equipped examining room and a small administrative office, and costs 25 percent less than a similarly sized permanent building (Exhibit 3). Nurses employed by the NGO (the Namibia Planned Parenthood Association) staff the clinic and receive special refresher training at Katutura Hospital to ensure high-quality care.

In anticipation of efforts to test the concept's feasibility in rural areas, different versions of the clinic are being equipped with solar panels, a septic tank, and a stand-alone tank to supply fresh water. The results have been promising. In fact, Namibia's health ministry, in partnership with the NGO, now aspires to roll out such clinics across the country and has submitted plans to Namibia's finance ministry to mobilize funding for 16 additional clinics. The health ministry has also identified a site for a second CWIClinic in Khomas.

Improve efficiency

Another powerful means of expanding access to health care in Africa would be to use existing facilities and resources more efficiently, so that they can serve larger numbers of patients. During the project, the MHI team attempted to realize this goal in two ways.

First, the team worked with Okuryangava Clinic to see if it could offer antenatal care.

Namibia's health ministry had long wanted to provide it in urban clinics to make access easier and more affordable for patients but had been frustrated by shortages of staff and space.

While these shortages were a constraint, so was the mind-set of clinic staff. Many nurses felt that offering antenatal care at the clinic was simply impossible given existing staff levels. Therefore, a big task was to get the local nurses energized and involved. The team achieved this goal, in part, by working



Setting up a CWIClinic is truly quick

Within 48 hours of purchase: a modular, prefabricated 15-square-meter structure is transported to and assembled on site

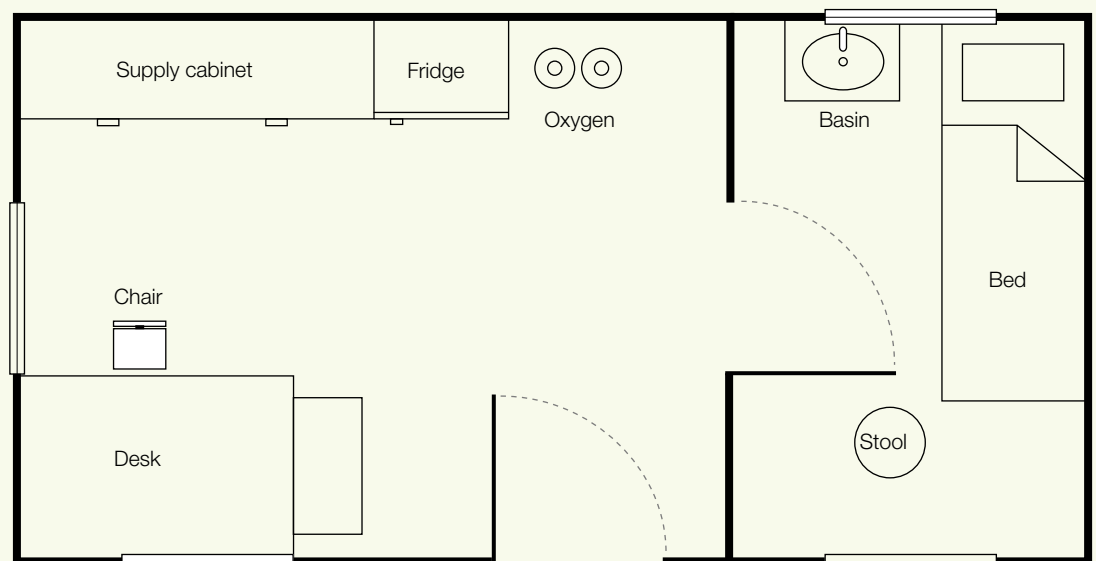
Within 72 hours on site: the structure is connected to electricity and water

Exhibit 3

The prototype container clinic brings antenatal care to outlying areas.

Prototype CWIClinic (child, women, and infant clinic)

Sample layout for container-sized structure



About the initiative

The Maternal Health Initiative (MHI) is part of a larger project designed and supported by a partnership among Synergos Institute (an international NGO and the in-country partner in Namibia), the Presencing Institute from the Massachusetts Institute of Technology (MIT), and McKinsey. The project, funded by the Bill & Melinda Gates Foundation, is testing ways to improve health service delivery in developing countries rapidly by combining leadership development with coordinated operational and organizational changes. The goal is to create a replicable model that can be applied within or across disease programs in national health systems.

MHI was created in partnership with Namibia's Ministry of Health and Social Services (MOHSS). The aim was to promote locally developed maternal-health-improvement initiatives, build local leadership capacity, and improve alignment among the MOHSS, the country's civil society organizations, the private sector, and other development partners. The 20 participants of the pilot MHI team, from a range of backgrounds and levels within the health system, include nurses, doctors, private health care providers, NGOs, and academic institutions.



with nurses to show how simple operational changes could free up time. By using straightforward diagnostic tools common in lean-manufacturing environments (for instance, spaghetti diagrams to pinpoint wasted process steps visually), the nurses identified bottlenecks and addressed them.

As the nurses saw the improvements take hold, they changed their minds about what was possible and began enthusiastically backing the antenatal care pilots. Within four weeks, the nurses had found ways to free up space and staff schedules and had seen their first antenatal patient (after receiving refresher antenatal training at Katutura Hospital). In large part because of the nurses' enthusiasm as "change agents," other clinics in the region began investigating similar changes. Within five months, all of the region's 11 primary care clinics were offering antenatal care.

The second way the MHI team used efficiency gains to expand access was to cut the excessively long response times of ambulances (90 minutes, on average). In fact, ambulances failed to answer about half of all emergency calls because they were otherwise occupied. When the team looked closer, it found that up to 70 percent of the trips of the community's five ambulances involved non-emergency cases. Moreover, critical radio communication equipment was broken, dispatching procedures were largely ad hoc, and ambulance repairs took several weeks. The MHI team helped ambulance drivers work with the health ministry to prioritize the repair of radio equipment, streamline requests for vehicle repairs, train a specialized dispatcher, and develop a simple dispatch protocol. Moreover, the team helped to mobilize funding (through the health ministry) for a minibus specifically intended to provide nonessential medical transport, thus freeing up ambulance capacity.



Expectant mothers wait for their first antenatal checkups at Katutura Hospital (June 2009).



A health ministry official discusses the new performance-measurement system with employees at the Katutura ambulance station (September 2009).

Within a month, average response times had decreased by 60 percent and the proportion of emergencies handled within 30 minutes had more than doubled, to 55 percent, from 23 percent. To encourage improvement and keep drivers focused on results, the ambulance service began using performance-management whiteboards to track drivers' response times and the availability of ambulances. Consequently, average response times have consistently remained below half an hour for more than six months.

Demand-side interventions

Improving the supply and quality of health care is the first priority for governments seeking better maternal-health outcomes. However, health systems must also educate patients so that they know about and seek the potential life-saving interventions and treatments available to them. Stimulating demand for services is therefore critical. In Khomas, the central challenge was to spur demand for antenatal services.

Raising awareness

Less than 7 percent of the pregnant women in Khomas receive antenatal checkups during the first trimester of pregnancy. Almost 40 percent of the women who receive

antenatal care present themselves for their first visit well into the third trimester—when it is often too late to manage problems.

On closer examination, the MHI team found that this behavior reflected not only poor access to antenatal care but also the prevailing lack of awareness among local women about its importance. Many women the team talked to did not, for example, know the basic risks associated with pregnancy, including the potential transmission of HIV/AIDS to their babies.

To address these knowledge gaps, the team worked with Namibian education and health officials to create a weekly, 45-minute reproductive-health show for a local radio station. (Radio is well suited to spread information effectively among rural populations that may be widely dispersed or have low literacy rates.) The show, which first aired in August 2009 and is hosted by influential radio personalities with strong ties to the local community, focuses on promoting good maternal-health practices. The messages include the benefits of early antenatal care and deliveries in hospitals, the danger signs during pregnancy, and family-planning options and postnatal care.



The show's format includes call-in segments where listeners anonymously share their stories, ask questions, and receive immediate expert medical input from a guest panel of health workers. Broadcast in six different local languages, the show appears to be quickly gaining popularity among local women and is a hot topic of conversation among women in Khomas's antenatal clinics. Encouragingly, the MHI team observed that a high proportion of callers are men, suggesting that the anonymity of the show's format encourages them to ask candid questions about reproductive health. This is good news, because one reason the region's women do not seek antenatal care is a fear that their partners will not approve.

To increase the show's impact, members of the MHI team are creating a spin-off radio serial drama in a "soap opera" format to reinforce the messages. Students at the Katutura media school will support this new show, which will feature fictitious Namibian characters displaying both good and bad health habits. The show has generated interest from four national radio stations, as well as from local newspapers that plan to introduce the fictional radio characters into their comic strips to promote the show and its messages.

User incentives

The use of simple incentives is the last way the team is attempting to stimulate demand for antenatal services in Khomas. The radio show, for instance, plans to introduce quizzes on family health-related topics. These quizzes can be quite powerful: in Uganda, for example, the mobile provider Celtel recently supported an interactive, text message-based quiz about HIV/AIDS that used free airtime as an inducement for users to play. During the pilot, the number of people seeking HIV tests increased by 40 percent.

Other incentives are less obvious, though surprisingly powerful. The MHI team quickly discovered, for instance, that what women in Khomas particularly valued during their antenatal checkups was the ultrasound, as it allowed them to see their babies for the first time. Consequently, the team is arranging for the antenatal clinic at Katutura Hospital to offer women one free ultrasound picture during their pregnancies to encourage earlier and greater participation. The prospect of getting that first baby picture has thus far proved a potent incentive to seek antenatal care.



While much work remains to be done in Namibia, our experience there demonstrates that focused interventions harnessing the efforts of local leaders, together with simple changes in operating practices, can free up significant capacity in health systems and quickly improve health outcomes for mothers and their babies. **o**

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Kathleen McLaughlin is a director in McKinsey's Toronto office; **Marc van Oist** is a principal in the Johannesburg office, where **Ronald Whelan, MD**, is a consultant.