CHAPTER SEVEN

Why Do Women Die in Childbirth?

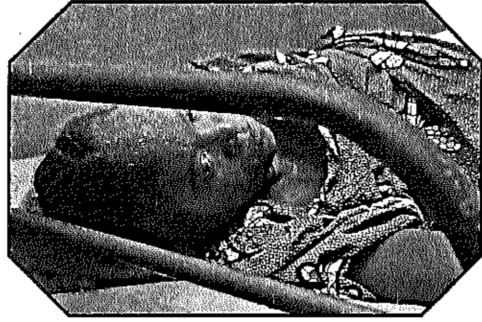
Would the world stand by if it were men who were dying just for completing their reproductive functions?

—ASHA-ROSE MIGIRO,
UN DEPUTY SECRETARY GENERAL, 2007

The first step to saving mothers' lives is to understand the reasons for maternal mortality. The immediate cause of death may be eclampsia, hemorrhage, malaria, abortion complications, obstructed labor or sepsis. But behind the medical explanations are the sociological and biological ones. Consider the factors that converged to kill Prudence Lemokouno.

We found Prudence lying on a bed in the little hospital of Yokadouma, in the wild southeastern corner of Cameroon, in roughly the area where (genetic evidence suggests) AIDS first jumped to humans in the 1920s. A twenty-four-year-old mother of three children, Prudence was wearing an old, red-checked dress that bulged out hugely at the belly; a sheet covered her lower parts. She was in tremendous pain, and she periodically grabbed the side of the bed, though she never cried out.

Prudence had been living with her family in a village seventy-five miles away, and she had received no prenatal care. She went into labor at full term, assisted by a traditional birth attendant who had had no training. But Prudence's cervix was blocked, and the baby couldn't come out. After three days of labor, the birth attendant sat on Prudence's stomach and jumped up and down. That ruptured Prudence's uterus. The family paid a man with a motorcycle to take Prudence to the hospital. The hospital's doctor, Pascal Pipi, realized that she needed an emergency cesarean. But he wanted $100 for the surgery, and Prudence's husband and parents said that they could raise only $20. Dr. Pipi was sure that the family was lying and could pay more.



Prudence Lemokouno in her hospital bed in Cameroon, untreated by the staff (Naka Nathaniel)

Perhaps he was right, for one of Prudence's cousins had a cell phone. If she had been a man, the family probably would have sold enough possessions to raise $100.

Dr. Pipi was short and solidly built, with spectacles, a serious and intelligent manner, superb French—and a resentful contempt for local peasants. He worked diligently, and he was very pleasant to us, but he excoriated the nearby villagers like Prudence who didn't take care of themselves and didn't seek medical attention early enough.

"Even the women who live in town, right next to the hospital, they have their babies at home," he said. Overall, he estimated, only about 5 percent of local women deliver in the hospital. Supplies are almost nonexistent, he complained, and in the history of the hospital nobody had ever given a voluntary blood donation. Dr. Pipi came across as bitter—angry at the women, and also at himself for being stuck in a remote provincial backwater. He was utterly unsympathetic to their needs.

We had come upon the clinic by accident and dropped in to inquire about maternal health in the area. Dr. Pipi gave an intelligent assessment of conditions in the region, and then we stumbled upon Prudence in an unused room in the hospital. She had been lying there untreated for three days, according to her family—only two days, Dr. Pipi indignantly told us later. The fetus had died shortly after she arrived at the hospital, and now it was decaying and slowly poisoning Prudence.

"If they had intervened right away, my baby would still be alive,"

Alain Awona, Prudence's twenty-eight-year-old husband, said angrily as he hovered beside his wife. A teacher at a public school, he was educated enough to be indignant and assertive at the mistreatment of his wife. "Save my wife!" he pleaded. "My baby is dead. Save my wife!"

Dr. Pipi and his staff were furious at Alain's protests and embarrassed at having a woman die in front of visitors. They argued that the problem was a resource shortage compounded by uneducated villagers who refuse to pay for medical services.

"Most of the time in emergencies, the family doesn't pay," scoffed Emilienne Mouassa, the senior nurse, who appeared to have veins full of antifreeze. "They just run away."

Dr. Pipi said that without intervention Prudence had only hours to live, and that he could operate on her if he had the remaining $80. So we agreed to pay it then and there. Then Dr. Pipi said that Prudence was probably anemic and would need a blood transfusion to get her through a C-section. A nurse consulted Prudence's records and reported back that her blood was type A, Rh positive.

Nick and Naka Nathaniel, the videographer, looked at each other. "I'm A positive," Nick whispered to Naka.

"And I'm O—a universal donor," Naka whispered back.

They turned to Dr. Pipi.

"What if we gave blood?" Nick asked. "I'm A positive and he's O positive. Could you use that blood for the transfusion?"

Dr. Pipi shrugged agreement.

So Nick and Naka handed over some money to send a nurse to town to buy what supposedly were brand-new disposable needles. The lab technician then drew blood from each of them.

Prudence didn't seem fully aware of what was going on, but her mother had tears of joy streaming down her cheeks. The family had been sure that Prudence was going to die, and now it suddenly seemed that her life could be saved. Alain insisted that we stick around to see the surgery through. "If you go," he warned bluntly, "Prudence will die."

Emilienne and the other nurses had been arguing with the family again, shaking them down for more money, but we intervened and paid some more. Then the nurses hooked up the blood units on a drip, and blood from Nick and Naka began coursing into Prudence's bloodstream. She almost immediately perked up and, in a weak voice, she

thanked us. The nurses said that everything was ready for Prudence's surgery, but the hours dragged by and nothing happened. At 10 p.m., we asked the duty nurse where Dr. Pipi was.

"Oh, the doctor? He went out the back door. He's gone home. He'll operate tomorrow. Probably." It appeared that Dr. Pipi and the nurses had decided to teach Alain and Prudence's family a lesson for being uppity.

"But by tomorrow it will be too late!" Nick protested. "Prudence will be dead. The doctor himself said that she might have only a few hours."

The nurse shrugged. "That is up to God, not us," she said. "If she dies, that would be God's will." We came close to strangling her.

"Where does Dr. Pipi live?" Nick asked. "We'll go to his house right now." The nurse refused to say. Alain was watching, flabbergasted and dazed.

"Come on, you must know where the doctor lives. What if there's a crisis in the night?"

At that point, our Cameroonian interpreter tugged us aside. "Look, I'm sure we could find out where Dr. Pipi lives if we ask around," he said. "But if we go to his house and try to drag him back here to do surgery, he'll be incredibly angry. Maybe he'll do the surgery, but you don't know what he'll do with the scalpel. It wouldn't be good for Prudence. The only hope is to wait for morning, and see if she's still alive." So we gave up and headed back to our guesthouse.

"Thank you," Alain said. "You tried. You did your best. We thank you." But he was crushed—partly because he knew the hospital staff was doing this to spite him. Prudence's mother was too angry to speak; her eyes glowed with tears of frustration.

The next morning, Dr. Pipi finally operated, but by then at least three days had elapsed since Prudence had arrived at the hospital, and her abdomen was severely infected. He had to remove twenty centimeters of her small intestine, and he had none of the powerful antibiotics that were necessary to fight the infection.

The hours passed. Prudence remained unconscious, and gradually everybody realized that it wasn't just the anesthesia; she was in a coma. Her stomach expanded steadily because of the infection, and the nurses paid her little heed. When the bag of urine from her catheter overflowed, no one changed it. She was vomiting lightly, and it was left to Prudence's mother to clean it up.

As the hours passed, the mood in the room became increasingly grim. Dr. Pipi's only comments were criticisms of Prudence's family, especially of Alain. Prudence's stomach ballooned grotesquely, and she was spitting up blood. She began fighting for her breath, in huge, terrifying rattles. Finally, the family members decided that they would take her home to the village to die. They hired a car to take them back to the village, and they drove back, somber and bitter. Three days after the surgery, Prudence died.

That's what happens, somewhere in the world, once every minute.

It wasn't only Prudence's ruptured uterus that was responsible for her death. There were four other major factors.

- *Biology.* One reason women die in childbirth has to do with anatomy, arising from two basic evolutionary trade-offs. The first is that once our ancient ancestors began to walk upright, too large a pelvis made upright walking and running inefficient and exhausting. A narrow pelvis permits fast running. That, however, makes childbirth exceedingly difficult. So the evolutionary adaptation is that women generally have medium-sized pelvises that permit moderately swift locomotion and allow them to survive childbirth—most of the time.

  The other trade-off is head size. Beginning with our Cro-Magnon ancestors, human skull size expanded to accommodate more complex brains. Larger brains offer an evolutionary advantage once a child is born, but they increase the chance that a large-headed fetus will never emerge alive from the mother.

  Humans are the only mammals that need assistance in birth, and some evolutionary psychologists and evolutionary biologists have argued that as a result perhaps the first "profession" to emerge in prehistoric days was that of the midwife. The risk to the mother varies with anatomy, and human pelvises are categorized by shapes that reflect alternate evolutionary compromises: gynecoid, android, anthropoid, and platypelloid. There is some disagreement among specialists about how significant the pelvic distinctions are, and *The Journal of Reproductive Medicine* has suggested that they reflect childhood environmental factors as much as genetics.

  In any case, the most common pelvis for women is gynecoid, which is most accommodating of the birth process (but is not

found on great women runners) and is particularly common among Caucasian women. In contrast, the anthropoid pelvis is elongated, permits fast running, and is more likely to result in obstructed labor. Data on pelvis shapes is poor, but African women seem disproportionately likely to have anthropoid pelvises, and some experts on maternal health offer that as one reason maternal mortality rates are so high in Africa.

- *Lack of Schooling.* If villagers were better educated, Prudence would have had a better chance, for several reasons. Education is associated with lower desired family size, greater use of contraception, and increased use of hospitals. So with more education, Prudence would have been less likely to have become pregnant and, if she had become pregnant, would have been more likely to deliver in the hospital. And if the birth attendant had been better schooled, she would have referred a case of obstructed labor to the hospital—and she certainly would not have sat on Prudence's stomach.

  Education and family planning also tend to leave families better able to earn a living and more likely to accumulate savings. The result is that they are better able to afford health care, and educated families are also more likely to choose to allocate savings to the mother's health. Prudence's family, if educated, would therefore have been better able to afford the $100 for her surgery, and more likely to consider it a wise expense. The World Bank has estimated that for every one thousand girls who get one additional year of education, two fewer women will die in childbirth. As we'll see, such studies sometimes overstate the power of education, but even if the magnitude is exaggerated, an effect is clear.

- *Lack of Rural Health Systems.* If Cameroon had had a better health care structure, the hospital would have operated on Prudence as soon as she arrived. It would have had powerful antibiotics available to treat her infection. It would have had trained rural birth attendants in the area, equipped with cell phones to summon an ambulance. Any one of these factors might have saved Prudence.

  One of the impediments to constructing a health system is the shortage of doctors in rural Africa. Dr. Pipi was unsympathetic, but it's also true that he was a hard worker who was hugely overburdened—and Cameroon just didn't have enough physicians to post a second one at the hospital in Yokadouma. Doctors and nurses in rural Africa get ground down by the relentless hours, lack of supplies, and difficult conditions (including the dangers to their own health), so they try to move to the capital. Very often, they also emigrate to Europe or America, amounting to a kind of foreign aid from Africa to the West and leaving women like Prudence without anyone to operate on them.

  One problem with our proposal for donor countries to invest heavily in maternal care in Africa is that those countries lack the doctors—at least those willing to serve in rural areas. It's far easier to build an operating theater in a rural area than to staff it. One sensible response is to start training programs in Africa that produce many more health care professionals, but in two- or three-year programs that don't grant MDs that allow the graduates to find jobs abroad. Africa would be better off graduating fewer doctors if the trade-off were that more health professionals would be forced to remain in their home countries. The purpose of medical training isn't to fuel emigration but to address health needs at home.

  Another common problem is that doctors and nurses often don't show up for work, particularly in rural clinics. In one careful study across six countries in Africa, Asia, and Latin America, on any one day 39 percent of doctors were absent from clinics when they were supposed to be on duty. Western donor governments and UN agencies should try supporting not just the building of clinics, but also a system of auditors to conduct random inspections. The pay of medical staff who are unaccountably absent would then be docked, and that just might prove a cheap way to make existing clinics more efficient and effective.

- *Disregard for Women.* In much of the world, women die because they aren't thought to matter. There's a strong correlation between countries where women are marginalized and countries with high maternal mortality. Indeed, in the United States, mater-

nal mortality remained very high throughout the nineteenth century and beginning of the twentieth century, even as incomes rose and access to doctors increased. As late as 1920, America had a maternal mortality rate equivalent to poor parts in Africa today. But then deaths from pregnancy began to plunge. One reason was antibiotics and blood transfusions, but another was women's suffrage. A society that gave women the right to vote also gave their lives more weight and directed more resources to women's health. When women could vote, suddenly their lives became more important, and enfranchising women ended up providing a huge and unanticipated boost to women's health.

Unfortunately, maternal health is persistently diminished as a "women's issue." Such concerns never gain a place on the mainstream international agenda, and never gain sufficient resources. "Maternal deaths in developing countries are often the ultimate tragic outcome of the cumulative denial of women's human rights," noted the journal *Clinical Obstetrics and Gynecology.* "Women are not dying because of untreatable diseases. They are dying because societies have yet to make the decision that their lives are worth saving."

It might also help if women didn't menstruate and childbirth involved storks. As *The Lancet* noted:

> The neglect of women's issues . . . does reflect some level of unconscious bias against women at every level, from the community to high-level decisionmakers. . . . While we may ignore it, maternal health does involve sex and sexuality; it is bloody and messy; and I think many men (not all, of course) have a visceral antipathy for dealing with it.

In most societies, mythological or theological explanations were devised to explain why women *should* suffer in childbirth, and they forestalled efforts to make the process safer. When anesthesia was developed, it was for many decades routinely withheld from women giving birth, since women were "supposed" to suffer. One of the few societies to take a contrary view was the Huichol tribe in Mexico. The Huichol believed that the pain of childbirth should be shared, so the mother would hold on to a string tied to her husband's testicles. With each painful contraction, she would give the string a yank so that the

man could share the burden. Surely if such a mechanism were more widespread, injuries in childbirth would garner more attention.

Poverty is obviously also a factor, but high rates of maternal mortality are not inevitable in poor countries. Exhibit A is Sri Lanka. Since 1935 it has managed to halve its maternal deaths every six to twelve years. Over the last half century, Sri Lanka has brought its maternal mortality ratio down from 550 maternal deaths for every 100,000 live births to just 58. A Sri Lankan woman now has just one chance in 850 of dying in pregnancy during her lifetime.

That is a stunning achievement, particularly since Sri Lanka has been torn apart by intermittent war in recent decades and ranks 117th in the world in per capita income. And it's not just a matter of throwing money at the problem, for Sri Lanka spends 3 percent of GNP on health care, compared to 5 percent in India next door—where a woman is eight times more likely to die in childbirth. Rather, it's about political will: Saving mothers has been a priority in Sri Lanka, and it hasn't been in India.

More broadly, Sri Lanka invests in health and education generally, and pays particular attention to gender equality. Some 89 percent of Sri Lankan women are literate, compared to just 43 percent across South Asia. Life expectancy in Sri Lanka is much higher than in surrounding countries. And an excellent civil registration system has recorded maternal deaths since 1900, so that Sri Lanka actually has data, in contrast to vague estimates in many other countries. Investments in educating girls resulted in women having more economic value and more influence in society, and that seems to be one reason that greater energy was devoted to reducing maternal mortality.

Beginning in the 1930s, Sri Lanka set up a nationwide public health infrastructure, ranging from rudimentary health posts at the bottom to rural hospitals one tier up, and then district hospitals with more sophisticated services, and finally provincial hospitals and specialist maternity centers. To make sure that women could get to the hospitals, Sri Lanka provided ambulances.

Sri Lanka also established a major network of trained midwives, spread across the country and each serving a population of three thousand to five thousand. The midwives, who have undergone eighteen months of training, provide prenatal care and refer risky cases to doctors. Today, 97 percent of births are attended by a skilled practitioner,

and it is routine even for village women to give birth in a hospital. Over time, the government added obstetricians to its hospitals, and it used its data to see where women were slipping through the cracks—such as those living on the tea estates—and then to open clinics targeting those women. A campaign against malaria also reduced maternal deaths, since pregnant women are especially vulnerable to that disease.

Sri Lanka shows what it takes to reduce maternal mortality. Family planning and delayed marriage help, and so do mosquito nets. A functioning health care system in rural areas is also essential.

"Looking at maternal mortality is a great way to look at a health system as a whole, because it requires you to do a great many things," says Dr. Paul Farmer, the Harvard public health specialist. "You need family planning, you need a district hospital for C-sections, and so on."

There are other possible innovations as well. One study found that giving Vitamin A supplements to pregnant women in Nepal reduced maternal mortality by 40 percent, apparently because that reduced infections in malnourished women. Anecdotal evidence in Bangladesh and other countries suggests that loosening controls over antibiotics and encouraging women to take them postpartum will reduce death from sepsis.

One of the most interesting experiments is under way in India, where a pilot program in some areas is paying $15 to poor women to deliver in health centers. In addition, rural health workers get a $5 bounty for each woman brought in for delivery. Vouchers are also provided so that pregnant women can get transportation to the clinic. The initial results have been very impressive. The proportion of women delivering in health centers rose from 15 percent to 60 percent, and mortality plunged. In addition, after the delivery the women were more likely to return to the health center for birth control and other services.

"We have what it takes," said Allan Rosenfield. "Those countries that have paid attention to the problem have made a real difference in maternal mortality." The World Bank summed up the experience in a 2003 report: "Maternal mortality can be halved in developing countries every 7–10 years . . . regardless of income level and growth rate."

Because progress on maternal health is possible, people have often assumed it is virtually guaranteed. In 1987, partly as a result of Allan's landmark article in *The Lancet*, a UN conference convened in Nairobi to launch the Safe Motherhood Initiative; the goal was to "reduce

maternal mortality by 50 percent by the year 2000." Then, in 2000, the UN formally adopted the Millennium Development Goal of reducing maternal mortality by 75 percent by 2015. The first target wasn't achieved, and the millennium goal will be missed by a wide margin.

In retrospect, advocates of maternal health made a few strategic errors. The dominant camp—which was backed by the World Health Organization and initially prevailed—insisted that the solution lay in improving primary care. The idea was to create programs like China's old "barefoot doctors" or Sri Lanka's network of midwives, because this would be much more cost-effective than training doctors (who in any case would probably serve only city-dwellers). After a WHO conference in 1978 emphasized funding for rural birth attendants, some countries even dismantled obstetric programs at hospitals.

Those training programs for birth attendants probably helped save newborn babies—by teaching midwives to use sterile razor blades to cut the cord—but they didn't much help maternal survival. In Sri Lanka, training midwives worked because they were part of a complete health care package and could refer patients to hospitals, but in most of the world training birth attendants was only a cheap substitute for a comprehensive program.

A minority camp, led in part by Allan Rosenfield, had argued that the crucial step for saving pregnant women was to provide emergency obstetric services. Training birth attendants is useful, Allan argued, but cannot save all pregnant women. Worldwide, about 10 percent of women giving birth need C-sections, and the percentage is higher in the poorest countries where pregnant women are more likely to be malnourished or very young. Probably too many women get C-sections in the West, but too few do in Africa. Without C-sections, there is simply no way to save the lives of many women, and ordinary birth attendants cannot provide that service. It may not take an ob-gyn to perform a C-section, but it does take more than a birth attendant with a razor blade.

Further evidence of the centrality of emergency obstetrics came from a study of a fundamentalist Christian church in Indiana whose members were affluent, well-educated, and well-nourished Americans, yet who for spiritual reasons eschewed doctors and hospitals. The group's maternal mortality ratio was 872 per 100,000 live births. That's seventy times the rate in the United States as a whole, and it's almost twice as high as in India today. It's difficult to avoid the conclusion that

Mamitu Gashe, herself an obstetric fistula patient who never attended even elementary school, now regularly performs surgery—a reminder that nonphysicians can perform some jobs we think of as the domain only of doctors. Here Mamitu repairs a fistula at the Addis Ababa Fistula Hospital. (Nicholas D. Kristof)

the critical factor for saving mothers is access to doctors in an emergency. As the *International Journal of Gynecology & Obstetrics* put it in an editorial, emergency obstetric care is the "keystone in the arch of safe motherhood."

The practical challenge is how to provide emergency obstetric services. Such services are neither simple nor cheap. They require an operating theater, anesthesia, and a surgeon. And the reality is that rural parts of Africa often have none of these. In puzzling over that challenge, Allan Rosenfield kept thinking back to his experience as a young doctor in Thailand, when he trained midwives to offer services that normally were the preserve only of physicians. Especially considering how MDs often emigrate, why couldn't nonphysicians be trained to perform emergency C-sections?

The Addis Ababa Fistula Hospital often makes use of medical staff without formal degrees. As is common in poor countries, those administering anesthesia at the Fistula Hospital are nurses, not doctors. Indeed, one of them started out as a porter. Most striking, one of the top surgeons is Mamitu Gashe, who never went to elementary school, let alone medical school. Mamitu grew up illiterate in a remote village in Ethiopia and suffered a fistula as a young wife in her first pregnancy. She made her way to the Addis Ababa Fistula Hospital for surgery, and afterward began help-

ing out by making beds and assisting Reg Hamlin during surgeries. She would stand beside him and hand him the scalpel, and she watched closely. After a couple of years, he let her do simple work, like suturing, and over time he entrusted her with more and more of the surgery.

Mamitu had nimble fingers and first-rate technical skills, and even if her biological knowledge was limited, she steadily accumulated experience repairing internal injuries. Eventually, Mamitu was doing fistula surgery by herself. The fistula hospital does more fistula repairs than any institution in the world, and Mamitu was at the center of the whirlwind. She also began to take charge of the training program, so when elite doctors went to Addis Ababa for a few months to learn fistula surgery, their teacher was often an illiterate woman who had never been to a day of school. Eventually Mamitu tired of being a master surgeon who couldn't read, so she went to night school. Last time we visited her, she had reached the third grade.

"You can train midwives or senior nurses to do C-sections, and they will save lives," notes Ruth Kennedy. Indeed, there have been some experiments in Mozambique, Tanzania, and Malawi with training nonphysicians to perform C-sections; this approach would be a major lifesaver. But doctors are reluctant to give up their exclusive control over these surgeries, and so there has been no broader rollout.

Another impediment is that maternal health just doesn't have an international constituency. In the 2008 U.S. presidential election, candidates tried to prove their foreign aid bona fides by calling for increased spending to fight AIDS and malaria. But maternal health wasn't on the political horizon, and the United States and most other countries contributed negligible sums to address it. Norway and Britain are rare exceptions, having announced a major foreign aid program in 2007 to target maternal mortality. The United States could do a world of good—and bolster its international image—if it joined the British and Norwegians in that effort.

In pushing for a global campaign to reduce maternal deaths, it's crucial to avoid exaggerated claims. In particular, advocates should be wary of repeating assertions that investing in maternal health is highly cost-effective. A senior World Bank official told a maternal health conference in London in 2007, with typical enthusiasm: "Investing in better health for women and their children is just smart economics." Now, that's certainly true of educating girls, but the sad reality is that invest-

ments in maternal health are unlikely to be as cost-effective as other kinds of health work. Saving women's lives is imperative, but it is not cheap.

One study suggested that the millennium development goal of curbing deaths by 75 percent could be achieved by spending escalating sums ranging from an additional $1 billion in 2006 up to an additional $6 billion in 2015. Another study suggested that it would cost an additional $9 billion a year to provide all effective interventions for maternal and newborn health to 95 percent of the world's population. (In contrast, total international development assistance from all countries for maternal and neonatal health was a paltry $530 million in 2004.)

Suppose that the estimate of $9 billion per year is correct. It pales beside the $40 billion that the world spends annually on pet food, but it's still a great deal of money. If that $9 billion managed to save three quarters of the mothers who are now dying, that would mean that 402,000 women would be saved annually, in addition to many newborns (and many maternal injuries would be averted as well). The cost of each woman's life saved would be more than $22,000. Even if we're wrong by a factor of five, it would still cost more than $4,000 for each life saved. In contrast, a $1 vaccine can save a child's life. As one leader in the development field said: "Vaccines are cost-effective. Maternal health isn't."

So let's not overstate the case. Maternal mortality is an injustice that is tolerated only because its victims are poor, rural women. The best argument to stop it, however, isn't economic but ethical. What was horrifying about Prudence's death was not that the hospital allocated its resources poorly, but that it neglected a human being in its care. As Allan Rosenfield has been arguing, this is first and foremost a human rights issue. And it's time for human rights organizations to seize upon it.

An example of the measures we've been talking about—including emergency obstetrics to save lives in difficult environments—can be found in a wondrous hospital in a remote country that doesn't even exist. . . .

Edna's Hospital

Edna Adan first scandalized her country by learning to read, and she's been shocking her neighbors ever since. Now she is startling those few Westerners who venture to the Horn of Africa and find, gleaming in the chaos, a beautiful maternity hospital.

Westerners have become so cynical about corruption and incompetence in the third world that they sometimes believe it's not even worth trying to support good causes in Africa. Edna and her maternity hospital bear witness to the fact that such cynics are wrong. She and a handful of donors in the United States together have built a monument that neither could have accomplished alone.

Hargeisa, where Edna grew up, is a town in the harsh desert of what was then the British protectorate of Somaliland, later Somalia, and now the breakaway republic of Somaliland. The people there are poor, and the society deeply traditional. The innumerable local camels often had more freedom than the women.

"I was of a generation that had no schools for girls," Edna recalled as she sat in her modern living room in Hargeisa. "It was considered undesirable to teach a girl to read and write. There were no schools for girls, because if girls are educated then they grow up to talk about genitals." A mischievous glint in her eye revealed that she was joking—a little bit.

Edna grew up in an exceptional family. Her father, Adan, was a doctor who became the father of medical care in the country. Adan met Edna's mother, the daughter of the postmaster-general, at the tennis court of the British governor of Somaliland. Even in such an elite family, Edna's newborn brother died when the midwife dropped him on his head. And when Edna was about eight years old, her mother inducted her into Somali tradition: Edna's genitals were cut in the process called female circumcision. The intention is to reduce girls' sexual desire, curb promiscuity, and ensure that daughters will be marriageable.

"I was not consulted," Edna says. "I was caught, held down, and it was done. My mother thought it was the right thing to do. My father was out of town. When he came back and heard, that was the only time

I ever saw him with tears in his eyes. And that encouraged me, because if he thought it was wrong, then that meant a lot."

The cutting of Edna, who was very close to her father, led to a fierce argument between her parents and a souring of their marriage. And it is one reason Edna herself has become a passionate opponent of genital cutting. But at home, Edna's enlightened upbringing continued. A tutor came to her home to teach the boys of the family, and her parents allowed her to hover in the background and absorb the lessons. Edna soon proved her aptitude, and so her parents sent her to attend a primary school for girls in the nearby French colony of Djibouti. There was no high school for girls, so she returned to Hargeisa to work as an interpreter for a British doctor. "It improved my English, got me into health, and whetted my appetite even more for health work," says Edna.

In 1953, an elementary school for girls opened in another town, and at the age of fifteen Edna went off to work as a student teacher there. In the mornings she taught the girls, and in the afternoon she was taught privately by the same teacher who taught high school boys (since it would have been improper for Edna to sit with the boys). Every year there were a few scholarships for Somalis to go to Britain to study, and it was assumed that these would be for boys. But Edna was allowed to sit for the exams—in a separate room from the boys—and soon became the first Somali girl to study in Britain. She spent seven years there, studying nursing, midwifery, and hospital management.

Edna became her country's first qualified nurse-midwife, the first Somali woman to drive, and then Somalia's first lady, period. She married Somaliland's prime minister, Ibrahim Egal, who became Somalia's prime minister in 1967 after the former British and Italian Somali territories merged. She and her husband visited President Lyndon Johnson at the White House. In a photo she showed us, Edna is gorgeous as well as vivacious, and LBJ beams as he towers over her (she's five foot two).

Edna later divorced and was recruited by the World Health Organization. She lived the good life of a UN official and was posted around the world. But she dreamed of starting a hospital in her homeland—*the hospital my dad would have wanted to work in*—and in the early 1980s she began building her own private hospital in Somalia's capital, Mogadishu. When war broke out, the project had to be abandoned.

In the UN, Edna rose to be the top WHO official in Djibouti, with a

lovely office and a Mercedes-Benz. But she didn't want her legacy to be a Mercedes; she wanted it to be a hospital. The dream nagged at her, and she felt unfulfilled. She knew that Somaliland has one of the highest maternal mortality rates in the world, though precise figures do not exist because no one keeps track of deaths. So when Edna retired from the World Health Organization in 1997, she announced to the Somaliland government—which by then had won a civil war and had broken off from Somalia—that she was going to sell her Mercedes and take the proceeds, as well as her savings and pension, to build a hospital.

You tried that, said Somaliland's president, who happened to be her ex-husband.

I have to do this, she replied. *I have to do this now more than ever, because what few health facilities we had were destroyed during the civil war.*

We'll give you land for the hospital on the edge of town, he said.

No, Edna said firmly. *That's not good for women who have babies at two a.m.*

There was only one available tract inside the town of Hargeisa. It had been a military parade ground for the previous government, notorious as the spot where people were imprisoned, flogged, and executed. After the civil war ended, the site had been abandoned, and Somalilanders used it as a dump. Edna initially recoiled when she visited it but also saw an advantage: It was in the poor part of town, near the people who needed her most. So Edna planned her own maternity hospital, funding it with $300,000—her entire life savings.

It was an audacious dream, perhaps a foolish one. An official at the small UN outpost in Hargeisa said that Edna's vision was noble but too ambitious for Somaliland, and he had a point. African countries are littered with incomplete and abandoned projects, so skepticism was in order for a project driven less by balance sheets than by dreams. Another challenge in planning the hospital was that potential supporters like the UN and private aid groups are not very active in a breakaway country like Somaliland that no one recognizes and thus officially doesn't exist.

When the hospital was mostly built but still lacked a roof, Edna's money ran out. The UN and other donors were sympathetic but refused to provide the rest of the money needed. That's when Ian Fisher wrote an article in *The New York Times* about Edna and her dream. Anne Gilhuly, a recently retired English teacher at Greenwich

High School in a wealthy suburb in Connecticut, with no particular interest in Africa or maternal health, read that article. She was teaching classics to adults in continuing education classes and pursuing her interest in Shakespeare and theater. But the article moved her, and so did the accompanying photo of Edna beside her incomplete hospital. A friend of Anne's in Greenwich, Tara Holbrook, had also read the article, and they spoke about it on the phone.

"We were so disgusted with the plastic toys our grandchildren wanted for Christmas that we leaped at the chance to do something better for the children of the world: help some of their mothers survive," Anne recalls. She quickly adds, self-mockingly, "Sounds corny, I know."

So Anne and Tara contacted Edna. They asked various experts if Edna's goal was sensible, if it was achievable. Former American ambassador Robert Oakley and others said it just might be, and so Anne plowed ahead. Soon she and Tara found out about a group of people in Minnesota who had also read Ian's article and wanted to help. The Minnesota group included a few Somalilanders, led by a computer executive named Mohamed Samatar and a dynamo travel agent named Sandy Peterson. Sandy's daughter had been raped at age six by a neighbor and had subsequently undergone the gamut of psychiatric counseling, mental hospitals, and suicide attempts. Sandy realized that many African girls underwent equally traumatic experiences yet received no help whatsoever. The Minnesotans had created a support organization, Friends of Edna's Hospital, and applied for tax-exempt status. The two groups joined forces. When the tax-exempt status was granted the following June, Anne launched her appeals.

"Tara and I sent out our first fund-raising letter—mostly to women of our generation we thought would be proud of Edna for her achievements in a patriarchal society," Anne recalled. "And they did respond."

With help from Anne and her friends, Edna completed her hospital, after upsetting all the protocols of the construction industry in Somaliland. First, she barred workers from chewing khat, a leaf that has amphetamine-like qualities and is enjoyed by men throughout the region. The workers didn't believe she could be serious—until she fired some of them for disobeying orders. Then Edna insisted that the masons teach women how to make bricks. They resisted at first, but she was paying the bills, so Somaliland soon had its first female brickmakers. Local merchants in Hargeisa also supported the hospital,

Edna in front of her hospital in Somaliland (Nicholas D. Kristof)

allowing Edna to use construction equipment free of charge and even donating 860 bags of cement.

The result is a white three-story hospital with an English sign that reads EDNA ADAN MATERNITY HOSPITAL in front of it. There is no hint of the squalid dump it replaced. Anybody accustomed to dilapidated African hospitals would be astonished, for it gleams in the afternoon sun and has the hygiene and efficiency of a Western hospital. It has sixty beds and seventy-six staff members, and Edna lives in an apartment inside the hospital so that she can always be on call. She accepts no salary and uses her WHO pension to make up the shortfall in the hospital's operating expenses.

"Things like this are very precious to us," she said, holding a surgical mask, unobtainable commercially anywhere in Somaliland. The hospital imports all medical supplies and survives thanks to gifts and hand-me-downs. The generator is from the Danish Refugee Council. The ultrasound machine is from a German doctor who had once visited; he sent his old one. The blood refrigerator is from a Somali who owed Edna a favor. The United Nations Refugee Agency donated an ambulance. The Netherlands donated two incubators. USAID, the American aid agency, built an outpatient center. Britain equipped the operating theater. UNICEF gives vaccines. WHO provides reagents for blood transfusions.

Friends of Edna's Hospital initially gathered equipment and medical supplies in the United States and shipped them to Somaliland. Gradually the emphasis shifted to fund-raising only, to pay for equip-

ment and supplies that Edna buys closer to the hospital. The group is also financing two of Edna's former nursing students in medical school so that she will have two of "her own" practicing full-time as physicians at the hospital. And the Friends are simultaneously trying to build an endowment so that the hospital can survive Edna's passing.

Somehow, improbably, it all comes together. At three o'clock one morning, a man arrived, pushing his wife in a wheelbarrow. She was in labor. The team leaped into action and rushed the woman into the delivery room. Another time, a nomadic woman gave birth in the desert and developed a fistula. Her husband couldn't stand her smell and constant wetness, and stabbed her in the throat; the knife went through her tongue and stopped at her palate. The other nomads stitched her throat together with needle and thread and carried her to Edna's hospital. A visiting fistula surgeon patched the woman together again, from her throat to her bladder.

As Edna roams the hospital, she's like the weather in October: alternately stormy and sunny. One of her hospital's major roles is training a constant stream of midwives, nurses, and anesthetists, and she is constantly grilling the trainees in English, because she wants them all to speak English fluently. In the hallway, she pauses to upbraid one nursing student about an error, ensuring that she'll never make that mistake again. A moment later, Edna is all empathy as she talks to a fistula patient who sobs as she describes how her husband forced her to leave their home.

"I'm a woman, too!" Edna tells the girl, holding her hand. "I feel like crying myself."

Once a man drove through the hospital's front gate with his wife in labor in the backseat. The baby emerged just as they arrived, and so the man tried to drive right out again.

"No! No!" Edna shouted at him. "You'll kill your wife. The placenta still has to come out."

"I won't pay you," the man shouted back. "I'm leaving."

"Close the gate!" Edna shouted to the guard, blocking the car from leaving. Then Edna turned to the husband.

"Forget about the payment," she said, and she pulled out the placenta right there in the backseat before opening the gate and allowing him to go.

Somali superstition holds that burning a baby on the chest will prevent tuberculosis, so Edna constantly has to guard against mothers

Edna delivering a breech birth in her hospital (Nicholas D. Kristof)

sneaking their newborn babies out of the hospital to burn them. At least once, a mother burned her new baby in the hospital kitchen.

The American backers of the hospital have been venturing out to Somaliland to see what they have wrought. Sandy Peterson, the travel agent, was the first to travel to Hargeisa. Then others went as well, including Anne Gilhuly and her husband, Bob, who visited when Edna was doing double duty as Somaliland's foreign minister a few years ago. Anne e-mailed us:

> Swimming with her, with all our clothes on naturally (except for Bob, who could wear a bathing suit because he was a man), in the Gulf of Aden at Berbera, in that warm turquoise water with the pink mountains in the distance and her bodyguard marching up and down the otherwise absolutely deserted beach with his machine gun, is a lot more interesting than playing bridge at the local Y.

Anne also saw the tougher side of Edna. Once a senior nurse waited too long before calling in the doctor to perform a cesarean. Believing that the nurse had endangered a woman's life, Edna erupted in full fury and gave the nurse such a ferocious tongue-lashing that Anne and Bob were shaken. Afterward, they decided that Edna was right: If she was going to save patients and change attitudes, she had to be ferocious.

"Edna was determined that that would not happen again, that they had not been sufficiently sensitive to the woman's condition," Anne recalled. "In her hospital there must be total attention paid to each individual. I definitely felt chastened. The incident brought home the extent of the task Edna has set for herself and how hard it is for us to comprehend fully what she is up against."

CHAPTER EIGHT

Family Planning and the "God Gulf"

Whenever cannibals are on the brink of starvation, Heaven, in its infinite mercy, sends them a nice plump missionary.

—OSCAR WILDE

Rose Wanjera, a twenty-six-year-old woman in Kenya, showed up at a maternity clinic one afternoon. She had a small child in tow, and her stomach bulged with another on the way. Rose was sick and penniless and had received no prenatal care. She was an unusual visitor to a slum clinic because she had attended college and spoke English. She sat in a corner of the squalid, dimly lit clinic, patiently waiting for the doctor, and told us how wild dogs had mauled her husband to death a few weeks earlier.

A nurse eventually called her, and she lay on a cot. The doctor examined her, listened to her abdomen, and then announced that she had an infection that threatened her life and that of her unborn baby. He enrolled her in a safe motherhood program, so that she would get prenatal care and help with the delivery.

The clinic that Rose visited represents an unusual outpost of a consortium formed by aid organizations to provide reproductive health care for refugee women, who tend to be among the most forlorn and needy people on Earth. The consortium includes CARE, the International Rescue Committee, and AMDD, Allan Rosenfield's organization at Columbia University. This particular clinic was run by another member of the consortium, Marie Stopes International—but then George W. Bush cut off funds to Marie Stopes and the entire consortium, all around the world, because Marie Stopes was helping to provide abortions in China. One might have understood cutting funds to the China program, but slashing funds for the consortium in Africa was abhorrent.