

Far from home and the nearest FHR monitor

# Thoughts about ObGyn after practicing in Tanzania

📌 For 2 years, we've helped provide basic medical services to thousands of ill and injured Tanzanian women. They've taught us understanding and compassion and given us a sense of usefulness.

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Two years ago, our family moved to Tanzania to help build a women's health collaboration between Duke University and the Kilimanjaro Christian Medical Center (KCMC) in the town of Moshi, one of four tertiary referral centers in Tanzania that serves a population of nearly 14 million people. The goal of the collaboration was to expand the successful Duke-KCMC HIV/AIDS program that had been in operation at KCMC for 10 years to a broader women's health service. Here is a synopsis of what we found in Tanzania and what we learned in those 2 years working alongside excellent local consultants and medical residents. (For ease of narration here, the word "we" expresses our individual and in-common experiences and thoughts.)

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**Editors note:** Questions about the Duke-KCMC women's health collaboration can be directed to Dr. Wilkinson at [jeffrey.wilkinson@duke.edu](mailto:jeffrey.wilkinson@duke.edu).

## Welcoming party: Fire ants

**Introductions.** We are faculty members at Duke, in obstetrics and gynecology (Jeff) and family medicine (Sumera). In 2007, after we rented out our house for the coming 2 years, sold both cars, and packed 20 suitcases with our clothes and medical supplies, we left for Tanzania with our children in tow.

**In Moshi.** We arrived late at night, after the airline lost at least 30% of our baggage, to a house near the hospital that was in disrepair and infested with fire ants. There were (passing) thoughts of turning around and heading home.

Jeff had done a good deal of OB and gynecology in under-resourced settings—India and West Africa. But the work had always been brief surgical excursions, mostly to care for women who had obstetric fistula.

Now, however, broadening the Duke-KCMC HIV/AIDS to general women's health presented great challenges and great opportunity. Yes, the Tanzanian ground was fertile for sowing seeds of collaboration in women's health, but opportunities for federal funding for global women's health projects, apart from HIV/AIDS, were limited. Duke's goal was to build a research platform that cultivated awards from the National Institutes of Health, which, ultimately, are essential to the sustainability of most East-West and North-South research collaborations.

**Priorities are everywhere.** The fact that,

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## Some interesting (often medically devastating) cases that we encountered in Tanzania

Every week at KCMC presents interesting challenges to our intellect, our surgical skills, and our resolve to press on to the next happy outcome—or tragedy. We admire our Tanzanian colleagues who confront these challenges every day of their professional lives.

- A woman with massive labial elephantiasis with a 40-cm labial mass
- Multiple abdominal pregnancies of advanced gestation (testing the surgical skills and resolve of anyone who dares enter the abdomen)
- A 40 week-size molar pregnancy
- Many cases of uterine rupture and associated complications
- Countless women with complications of HIV infection and AIDS, in and out of pregnancy
- More cesarean hysterectomies than we can count
- A woman with a 18 week-size fetus in the right broad ligament, inside a huge retroperitoneal abscess that developed as a result of a botched abortion, performed in her village, that perforated the cervix.

every year, worldwide, more than 500,000 women die in childbirth and there are more than 6 million stillbirths and early neonatal deaths has, for a long time, eluded the conscience of the world's major funding organizations. Devastating related problems, such as obstetric fistula, have been so neglected that some expert voices have labeled obstetric fistula “an orphan initiative.” United Nations Millennium Development Goal #5—a 75% reduction in maternal mortality by 2015—is far off target, with minimal progress made in sub-Saharan Africa.

Our strengths had been in clinical care, teaching, and program development. Based on the priority areas of the KCMC department of ObGyn and our professional experience, we chose to focus on four areas of care in expanding the Duke-KCMC program:

- emergency OB care and neonatal resuscitation
- OB fistula repair and recovery
- cervical cancer screening and prevention
- laparoscopic surgery.

In Moshi, any one of these areas could have consumed all our time. (See “Some

interesting [often medically devastating] cases that we encountered in Tanzania.”)

### A deficit of hands-on skills

We then determined that instruction in emergency OB care and neonatal resuscitation was needed most urgently at KCMC.

In most of sub-Saharan Africa, medical education focuses on learning theory. If we were to put medical students in Tanzania up against their US counterparts in an examination of the theoretical aspects of medicine, the Tanzanian students would perform as well or better.

Regrettably, however, the structure of clinical education here does not afford the same opportunities for students to learn a systematic approach to managing clinical problems. For example, at Duke, there are upwards of 50 ObGyn faculty members; at KCMC, there are only four—yet they handle similar numbers of deliveries, outpatient visits, and surgeries. Such a level of staffing is inadequate to manage the clinical load and to teach residents and medical students.

Consequently, students often learn “on the fly,” independently, and without the benefit of a systematic approach to OB emergencies.

We teach a systematic, evidence-based approach to the management of OB emergencies with the Advanced Life Support in Obstetrics (ALSO) program. We modified the course for an under-resourced setting and to meet the specific needs of this place. So far, we have taught the course to more than 250 OB providers in the region, with help from our colleague from Denmark, Dr. Bjarke Sørensen. We have watched the nurses and physicians grasp this knowledge and apply it with great success and satisfaction.

**Postpartum hemorrhage.** PPH remains the leading cause of death of pregnant women in under-resourced countries—even though it is often one of the easiest complications to prevent. By teaching active management of the third stage of labor and a progressive, staged approach to managing PPH at KCMC, the rate of maternal mortality from PPH has dropped substantially: Of 26 maternal deaths

at KCMC in 2008, 25 % were related to PPH; after emergency OB instruction, not a single maternal death in 2009 was attributable to PPH. We think this is at least in part related to the teaching of ALSO and the rapid uptake of the methodology by the doctors and midwives there.

**Pre-eclampsia.** This condition, on the other hand, remains stubbornly resistant to quick change. The ALSO course teaches management of pre-eclampsia, but we often encounter patients too late in their course to intervene meaningfully. After KCMC's success managing PPH, complications of hypertensive disorders rapidly became the #1 cause of maternal death here in 2009. Few drugs to control hypertension (we have hydralazine most of the time; labetalol, never; and no other IV options) and a frequent lack of magnesium sulfate make management of women with severe preeclampsia difficult, almost impossible.

Lack of sophisticated life support systems and trained personnel make the very sick patient much more likely to succumb to her illness. Some of the most tragic cases we've seen here are adolescent mothers with preeclampsia who died from a cerebral accident or renal failure, either of which could have been prevented with timely access to OB care, proper medication, trained personnel, and at times, advanced imaging modalities and hemodialysis.

**Stillbirth.** Even more common are the staggeringly high numbers of stillbirths that we encounter, either as referrals from smaller hospitals or on site during labor.

Use of continuous electronic fetal monitoring (CEFM) in resource-rich settings has been analyzed and scrutinized at length, mostly because of the high rate of unnecessary cesarean deliveries that false-positive interpretations of the fetal heart rate inspire in the cautious obstetrician. Every OB, we would guess, has intervened surgically because of what seemed to be an ominous fetal heart rate tracing—only to have the newborn nearly jump out of your delivering hands with its vigor.

Where there is no electronic fetal monitoring—and there is certainly none in

Moshi—one must rely on a fetoscope (we still can't hear the fetal heart with one of those) or a hand-held Doppler device to divine the fate of the fetus.

Intermittent auscultation has been shown to be as reliable as CEFM in low-risk patients, but the technique requires a high nurse-to-patient ratio to be effective. This is nearly impossible in many under-resourced settings. The nurse-to-patient ratio at KCMC may be as high as 30 to 1 (it's higher still in other hospitals in the surrounding areas), and patients sleep, even labor, two or three to a bed. That makes true intermittent auscultation impossible.

Intrapartum stillbirths are a tragedy wherever they occur; the reality is that 95% occur in under-resourced countries. Concern over preventing stillbirth often leads to a quicker decision to perform a cesarean delivery where this service is available. Audible decelerations or meconium may be benign findings if one has the luxury of CEFM, but may prompt a cesarean when the outcome is less certain. Paradoxically, therefore, both the availability of CEFM in resource-rich settings leads—and the *absence* of CEFM in under-resourced settings—lead to unnecessary cesareans.

Finding a means of reliably monitoring the fetus during labor is critical in both settings, but is needed most acutely where resources are scarce. As the capacity for performing cesarean deliveries increases in these settings, so does the rate of cesarean deliveries—to a point at which the rate exceeds 50% in some centers. This situation will, ultimately, lead to its own set of complications, including future placenta-tion abnormalities and their potentially life-threatening consequences.

**Neonatal resuscitation.** Before we moved to Africa, neither of us had resuscitated a newborn suffering the stress of difficult labor and delivery. Here, however, mastering this skill has proved invaluable. In fact, applying simple neonatal resuscitation efforts and witnessing remarkable results must count as one of the most satisfying moments in a physician's career.



**“Paradoxically, both the availability of electronic fetal monitoring in resource-rich settings—and the *absence* of electronic fetal monitoring in under-resourced settings—lead to many unnecessary cesareans”**

Here is what we have often seen: A baby, blue and appearing lifeless, is born after a long labor inside a sick mother. It isn't breathing, and the pulse is very slow or undetectable.

In many under-resourced settings, such babies are put aside to, almost always, die.

But we have also seen how warming, drying, stimulation, and a few breaths with bag-mask ventilation are easily the difference between life and death for these babies. Those techniques can be learned in a course lasting less than 1 day, and the nurses at KCMC have embraced them with great enthusiasm—with dramatic results.

### Devastating problem: OB fistula

The problem of OB fistula recently gained widespread attention in the international media; as a result, some effort is being made to address the problem. But, with as many as 3 million women suffering from this devastating condition, that effort has only scratched the surface of the problem.

**The typical fistula patient in Tanzania.** Consider an impoverished 17-year-old new mother, of short stature, who lives in a rural area and has no access to OB care. It's likely that she delivered at home; perhaps she had the assistance of a lay midwife.

After labor that lasted for as long as 5 or 6 days, the woman delivered a dead, macerated fetus. Despite the risk, she did not die of PPH or infection, but she is left with a vesicovaginal or (less commonly) rectovaginal fistula. She leaks waste constantly.

More often than not, her husband then divorces her.

Her family and community shun her because of her constant wetness, her odor, and her status as a mother bereft of child. Associated problems, such as foot drop, infertility, amenorrhea, and debilitating skin excoriations, worsen her status as a pariah.

**An especially horrifying case.** One patient—she was in our care for longer than 16 months—was brought in by her family and abandoned at the casualty department. She was emaciated and near death. The skin on

the buttocks had huge ulcerations down to muscle from pressure necrosis and chronic wetness. She had long ago given up hope of living. She had both a vesicovaginal fistula and a rectovaginal fistula, with extensive scarring and no identifiable urethra or cervix.

This woman underwent resuscitation and, once she was stable, diverting colostomy. After months of wound care and nutritional supplementation, she was able to undergo repair of the rectovaginal fistula. She is now ready for a urinary diversion procedure.

Many of our fistula patients are not as sick as this woman was upon presentation; their problem can be addressed with a 1- or 2-hour vaginal surgical procedure. Their equanimity and humility belie their suffering. They are, we think, the most beautiful and thankful of all patients. They deserve any attention that the world can give to them.

### How we've been reimbursed

What we've described here establishes a context for the work we do, but our words give only a glimpse of the challenges of providing care in such a setting. Gaps in language and culture; corruption; apathy; and a shortage of nearly everything that we have come to consider necessary in the United States to practice medicine—all these make life in Moshi challenging and interesting.

After 2 years managing the women's health collaboration program, we've barely scratched the surface of understanding what it means to work and live in this setting. What we hope is that our understanding, compassion, and usefulness will continue to grow as we experience more and more in this and similar settings.

We close by observing that the most important personal characteristics needed for a successful venture into global women's health are, we believe, **humility**, **patience**, **honesty**, and **courage**. These qualities are slow to come by; for us, acquiring them will be a life's work—they are not a welcoming party that greets you when you step off a plane in a distant land. 🚫



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