

“Wherever You Go, Remember Africa”: Memories of a Medical Experience in Kenya

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Abstract

A short time spent volunteering in a small, rural Kenyan hospital required me to revive dormant medical skills. Much could be done despite markedly limited resources. Major contrasts with my experiences in the US, especially the harsh living conditions, types of illnesses, and more advanced disease at presentation, left indelible memories.

The Maseno Mission Hospital, a few single-level buildings clustered below a hill in southwest Kenya near Lake Victoria, is accessed by a dirt road that passes a school President Obama’s father attended. There are adult male and adult female medical wards and pediatrics and obstetrics units—about 40 beds in all—and buildings for basic radiology and laboratory services, records, pharmacy, and administration. The verdant surroundings, songbirds and vervet monkeys playing in the trees belie the suffering inside. During the 3 weeks when my wife, a retired registered nurse, and I volunteered there in 2010, we felt amply rewarded by being able to effectively manage many disorders, yet frustrated and saddened that we could not do more. We were amazed by the great resilience manifested by the people as well as their warmth and hospitality.

Nominally sponsored by the Anglican Church of Kenya, the hospital hobbles along on a little church support, minor government assistance, donations from the US and United Kingdom, and fees collected from patients. The administrators try hard to collect payments, even refusing release of deceased patients until the family pays the hospital bill.

Until his recent departure from Kenya, Gerry Hardison, MD, a retired San Diego gastroenterologist, had worked for more than a decade caring for patients and attracting US medical students and residents for temporary assignments and was responsible for much of the care being as good as it was. I decided to volunteer

at his hospital because he welcomed assistance and I wanted to work in Africa. In preparation, I participated in a 1-week HIV/AIDS program at the University of California, San Diego. I also contacted a recent medical school graduate who had worked there. She gave me a positive report and emphasized, “The main thing is not to expect what you are used to here.” I was prepared for this, as I had done medical work in 2 other underserved areas, St Lucia and the West Bank (Palestine), but many of the challenges in Kenya differed markedly from those experiences. At Dr Hardison’s request, I brought some donated elastic stockings and biopsy needles, but after arriving I realized the hospital lacked other basic equipment that I could have supplied, such as soap, thermometers, and workable syringes. Dr Hardison’s masterful clinical skills acquired in another age accomplished much with only plain x-ray examinations and simple laboratory procedures. He applied his abilities to adults and children and used a briefcase-sized ultrasound machine to extend his examination of the chest, abdomen, and pelvis and to measure fetal head size. Working with him, I discovered that I could examine babies, treat burns, and do spinal taps and other procedures that had been dormant skills for 40 years. I was impressed that so many diagnoses could be made without consultants and modern diagnostic tools such as computerized tomography.

To inform physicians and nurses who may be interested in working at a similar hospital, I comment on some of the chal-

lenges for practitioners in such settings. Much of my description exemplifies Paul Farmer’s broad concept of structural violence: social and economic inequality that underlies illness and suffering.¹ Despite these realities, I found that great satisfaction can come from such work, even if viewed as a glass half empty in contrast to what could be accomplished with fewer obstacles. Although the illnesses of many patients resemble those seen in the US, I include some brief case descriptions of illnesses or disease stages that are more common in Africa and inextricably linked to the physical environment, poverty, and cultural milieu.

Challenges

Although Kenya is one of the more prosperous African countries, its gross domestic product of only \$740 per capita is 1.6% of that of the US,² and nearly everyone in the Maseno area struggles to survive. Subsistence agriculture in worn-out soil containing *Striga*, a corn-killing weed, is ubiquitous. Most homes have a dung floor and lack indoor plumbing, and obtaining safe water can be daunting. Very few people have electricity. High unemployment and low wages are the norm, and alcoholism and abuse of women are common. It is one of the most troublesome areas in Africa with regard to HIV, and the small Maseno outpatient clinic had about 5000 registered cases.

Among the numerous Kenyan tribes, the Luo and Luyia are most populous in the Maseno area. Intertribal animosity prevails. In response to our comment that we had worked among the Luo, a Nairobi taxi driver told us, “They are bad people.” This type of bias and the privileges enjoyed by the Kikuyus, the nationally dominant tribe, have fomented postelection, intertribal violence resulting in many casualties. These issues also affect hiring at the

hospital and sometimes impair relations between staff and patients. Some patients speak their tribal language, English, and Swahili—the lingua franca of East Africa. However, other patients know only one or two of these languages. It was sometimes necessary for our Swahili-speaking Luo nurse assistant to translate my questions from English to Swahili for a patient's family member, who then translated them into Luyia for the patient. The patient answered in Luyia, which the family member translated to Swahili for our nurse, and the nurse finally related the answer to me in English. This process caused difficulty in obtaining medical histories and, of course, added to the cultural barrier between the patients and me. Some local terms were useful in assessing stool from patients with diarrhea: *magi* (watery), *ugi* (semi-formed), and *ugali* (formed—*ugali* is a food staple in Kenya!).

Transportation difficulties and pervasive poverty have major effects on health care. Roads are poor, most people have no car, and many walk, bicycle, or hire a "bicycle taxi," sitting behind the operator. *Matutus* (minibuses) are the main motorized transportation for most people. They are accessible but lack seatbelts, are often crowded, and are frequently involved in collisions that cause many injuries and deaths. Patients with chronic illness usually purchase only a few days of medication before discharge and cannot obtain more. Thus, proper treatment and monitoring of hypertension, diabetes, and other chronic disorders rarely occur; treatment of acute disease, especially infectious disease, is most effective. Long-term treatment of HIV is an exception, as an American agency provides drugs, some of which are taken to remote villages by motorcycle. Also, antituberculosis therapy is fairly accessible, as three medications are conveniently combined into a single tablet at low cost. Patients may go without surgical procedures they need because they lack the few hundred dollars needed to pay for them; for example, an impoverished, elderly woman with a fractured hip returned to her village untreated.

Generally, health care is poor in Kenya. Childhood immunization and use of insecticide-treated bed nets to prevent malaria is far from universal. Roadside clinics and tiny hospitals with only a few beds often



Figure 1. Cistern with collecting troughs for capturing and storing rainwater.

treat patients on the basis of a deficient evaluation that leads to incorrect diagnosis and shotgun therapy. Combined antibiotic and antimalarial therapy is frequently administered to febrile children. Provincial hospitals are supposed to accept poor patients, but it is common knowledge that many are turned away or not treated properly. There seemed to be few performance standards for practitioners. Nurses' administration of medications and documentation of drugs given and vital signs were unreliable. Dr Hardison often measured patient temperatures with his own glass thermometer. However, these deficiencies must be viewed in light of the circumstances: some of the staff struggle with HIV themselves, child care is lacking, and home life is rough. For example, one nurse often brought her preschool-aged child to the hospital to play on her ward while she worked, and another nurse came to work with a forehead laceration inflicted by her husband. While surgeons repaired an inguinal hernia, I saw the anesthesiologist walk out of the operating room and remain absent temporarily. Some of the better physicians and nurses leave to accept work elsewhere for a higher salary. One of the greatest contrasts with American medicine that I noticed was a detached attitude toward relieving pain. Not only did patients accept untreated

pain more readily than patients in the US, but often nurses did not independently give medication for pain. I think life is so difficult, suffering and death so common, and individual empowerment so limited that acceptance of one's own pain occurs routinely and relieving others' pain has little priority.

Our hospital lacked running water, soap, and towels for hand washing, so we used alcohol gel. Electricity could stop unpredictably, such as when the power company shut off electricity after incorrectly concluding that the hospital had missed paying a bill, and paraffin (kerosene) lanterns were available for such occasions. Syringes were poor. The plunger often detached from the rubber tip while medication was drawn, leaving the tip in the barrel before the drug was completely drawn for injection. Potable water was a major issue. As there was no connection with a water supply, cisterns stored rainwater collected from the hospital roofs, from which it was pumped into containers (Figure 1). Although the dark sediment in the water contained bird and monkey excrement as well as ordinary dirt, it was made into coffee and tea after boiling and chemical disinfection. Fortunately, there were competent technicians to promptly perform basic x-ray examinations and laboratory tests, including some

special tests needed by HIV patients. Tissue can be examined by a pathologist in Nairobi, but weeks may pass before a report arrives. The pharmacy dispenses basic medications, depending on what is in supply. Since the pharmacy keeps no records of intake and dispensing, theft cannot be identified. There is no blood bank: any blood for transfusion must be obtained from a family member. I never saw a follow-up visit planned for after discharge—patients who feel better are unlikely to return anyway—and there was rarely any information about long-term outcomes, even for patients sent to the provincial hospital.

Cases

From an educational viewpoint, the variety of diseases I saw in a mere 3 weeks greatly exceeded what I had seen during any similar period in my entire medical career. This was a condensed version of medical school. Almost without exception, patients presented with a more advanced stage than presenting patients in the US. Therefore, physical findings were not subtle and were often of greater value than the history, in contrast to much medical practice in the US. We did not long for advanced diagnostic techniques, although some diagnoses were presumptive. The hospital had some 30-year-old textbooks that were more appropriate for our practice than newer ones—physical findings have not changed, and findings of computerized tomography and specialized laboratory tests are irrelevant in that setting. The books refreshed my memory of diseases I had forgotten and taught me about ones I had never known anything about. I rounded twice a day on an average of about 20 patients with a resident from Tennessee who had trained in both adult medicine and pediatrics; the latter training was especially valuable, as I am an adult gastroenterologist.

Case 1

A 13-year-old boy presented after 1 week of progressive swelling of the left calf. He had a fever (38.6°C) and a tender, enlarged left calf. Blood count revealed a hemoglobin of 10.9 g% and leukocyte count of 15,100/mm³ (81% neutrophils). After 2 days of antibiotic therapy, the

leg became fluctuant anteriorly below the knee. A surgeon incised the area, drained more than 100 milliliters of pus, and placed a drain in the cavity. He recovered rapidly.

Most tropical pyomyositis, a skeletal muscle infection of hematogenous origin, is caused by *Staphylococcus aureus*, and it usually occurs in people who are otherwise healthy, in contrast to the immunocompromised state of most patients in temperate regions. I had never heard of this disease.

Case 2

A 9-year-old, HIV-positive girl came from another facility, where she had presented 2 days before with vomiting, mental changes, severe headache, and fever. No cerebrospinal fluid analysis was done, and she worsened after receiving 3 doses of quinine and 1 dose of ceftriaxone. On arrival at Maseno, she was febrile (38.8°C), pale, and weak and had nuchal rigidity. Her hemoglobin was 10.2 g% and her leukocyte count was 14,000/mm³ (86% neutrophils). A blood smear tested negative for malaria, and her spinal fluid was cloudy with >1000 leukocytes/mm³ (84% neutrophils), gram-positive cocci, 28 mg% glucose, and no cryptococci or acid-fast bacilli. She recovered with intravenous ceftriaxone and hydrocortisone.

Childhood meningitis is common and, as in this case, sometimes mistakenly treated as malaria. Cryptococcal meningitis occurs in HIV-positive patients. One woman had received a course of antifungal therapy for her initial episode but stopped maintenance therapy, suffered a recurrence, and required a second course along with withdrawal of spinal fluid twice to improve her headache.

Case 3

A 14-year-old orphaned girl cut a heel on glass 9 days before admission. The wound had been sutured elsewhere, and tetanus toxoid was administered; no tetanus immune globulin was given. Two days before admission, muscle spasms occurred. She received diazepam, phenobarbital, and quinine. On transfer, examination revealed fever (38.5°C), trismus, and spasm of neck and back extensors (opisthotonus, Figure 2). We gave her ceftriaxone and diazepam and contacted the provincial hospital—we had no mechanical ventilator, which would likely be needed soon, or tetanus immune globulin. Initially, transfer was refused, but we insisted and provided transport there. We received no outcome report.

It is my understanding that tetanus is virtually 100% fatal in Africa. I wish parents who decline immunizations for their



Figure 2. Adolescent girl with tetanus and spasm of extensor muscles of the neck and back.

children could hear about this case and about the case of the second adolescent I saw with tetanus, whose entry wounds were bites from "jiggers," a common insect. Her grandmother had carried her into the hospital on her back and had diagnosed tetanus, a tragic reflection of the common occurrence in that region of an easily preventable disease. She also went to the provincial hospital, but we received no report. Tetanus must kill many Africans every day.

Case 4

A 61-year-old man reported he had had anorexia, fever, diaphoresis, cough, and headache for 1 month. Examination revealed fever (38.5°C), tachycardia, tachypnea, and coarse inspiratory rales in the left axilla. Hemoglobin was 8.6 g% and leukocyte count was 7000/mm³. Chest x-ray showed extensive opacification of the left lung. His HIV test result was positive and his serum *Cryptococcal*-antigen test result was negative. Acid-fast bacilli were found in the sputum. He rapidly became afebrile after starting antituberculosis therapy. Tuberculous pneumonia is much more common in Africa than in the US, and I saw patients with extrapulmonary tuberculosis, including cervical lymphadenitis (scrofula) and bone involvement.

Case 5

A 35-year-old woman was admitted after 2 months of cough and diaphoresis. Two years earlier, an invasive, intraductal carcinoma had been excised from her left breast; surgical margins tested positive. Six months before admission, a mass became visible on the breast, and she started chemotherapy but stopped after 2 months because she did not have the \$250 required to continue. One week earlier, the result of an HIV test was positive. Examination revealed rales throughout her chest and hepatomegaly. Her left breast was replaced by a large ulcerated tumor. The right breast also had a mass. Chest x-ray showed bilateral fluffy infiltrates. Her sputum tested negative for acid-fast bacilli. Mercifully, she died 2 days later.

We suspected that additional surgery had been advised after the initial resection and that she could not afford it. The appearance of the poorly treated breast cancer is unforgettable.

Case 6

A 27-year-old woman was hospitalized because of several hours of chest pain, generalized abdominal pain, and headache. Examination revealed costochondral tenderness and generalized abdominal tenderness. Blood count, electrocardiogram findings, and abdominal ultrasound findings were normal.

I suspected functional pain and asked a nurse from her tribe to chat with her outside the hospital. After half an hour, she told me that the patient had problems interacting with her mother-in-law. She further told me that women there do not tell each other about such problems ("African women can't talk about it."), fearing retribution, and that some women with interpersonal conflict commit suicide. I suspect that somatization is underdiagnosed in Africa at least as often as in the US, despite the dominance of organic disease. Manifestation of mental anguish as physical symptoms is probably a universal human reaction to circumstances as varied as the reasons for Tolstoy's unhappy families, depending on the cultural context.

Case 7

A 43-year-old woman reported a 13-year history of enlarging neck mass, 1 week of leg swelling, and 3 days of dyspnea and orthopnea. She had a giant, grapefruit-sized goiter, bibasilar rales, decreased breath sounds, a holosystolic murmur of mitral insufficiency, hepatomegaly, and lower-extremity edema. Chest x-ray showed pulmonary edema. Ultrasonography confirmed hepatomegaly and revealed a few nodular, calcified areas in the thyroid. We treated her congestive heart failure with furosemide and spironolactone.

It is almost unthinkable that in the US a goiter would not have been removed before reaching this size.

Case 8

A 27-year-old woman complained of abdominal pain that had started 2 days earlier in the epigastrium and moved to the lower abdomen. She had vomited 1 day before and had noted menstrual spotting 3 weeks earlier. Initially, her blood pressure was 100/70 mm Hg, and she had generalized abdominal tenderness.



Figure 3. Man with severe pemphigus vulgaris.

Within a few hours, her blood pressure was 90/50 mm Hg and her pulse was 110 beats per minute. Her hemoglobin was 6.3 g%. The urine test result for human chorionic gonadotropin was positive. Ultrasound examination revealed intra-abdominal fluid and a mass near the uterus. Needle aspiration of the abdomen yielded blood that did not clot. Surgery revealed a 2.5-L hemoperitoneum, and the surgeon successfully managed her ruptured ectopic pregnancy but did not return to see her postoperatively.

Ironically, this patient's condition was diagnosed as promptly as some similar cases would have been in the US, after delays due to specialist consultation and imaging procedures. Generalists in developing countries perform ultrasonography and find that it confirms diagnoses at low cost and saves lives. However, if this patient had not been able to pay the surgeon, she likely would have died untreated.

Case 9

A 66-year-old man had experienced oral pain onset when eating 10 months earlier, and painful ulcers later developed on his trunk and extremities. Examination revealed oral ulcers and multiple, large cutaneous ulcers with peripheral

collapsed bullae (Figure 3). The Nikolsky sign was present.

We treated his severe pemphigus vulgaris with high-dose prednisone and applied glucocorticoid cream to the lesions every day and covered them with autoclaved, Vaseline-soaked gauze. The oral lesions disappeared, and the skin ulcers showed evidence of early, peripheral healing and became less painful. After about 10 days, we discharged him with prednisone. Before leaving, this gentle, thankful man told me, "Wherever you go, remember Africa."

I was saddened to learn months later that he died. Details are lacking, but sepsis is suspected. He had consulted a dermatologist in Kisumu, but it is likely that no glucocorticoid-sparing drug was available or he could not afford it.

Conclusion

There were many other disorders. Notably, we treated babies and young children for falciparum malaria nearly every day using reliable intravenous quinine. The World Health Organization had recently announced that much of a supply of a major alternative, an artemisinin derivative, that had been provided to some African countries had been diluted, so that the doses on the labels were unreliable. Only 1 patient succumbed to malaria, a 2-year-old girl with a hemoglobin level of 3 g% who died within minutes of arrival, before we could start treatment. Many adults have a positive result for malaria on blood smear and their partial immunity, due to multiple childhood episodes, prevents severe symptoms; no patient older than 18 years was hospitalized for malaria during our stay. An extraordinarily dedicated Irishman named Desmond was working with a faith-based organization and usually arrived at the hospital in the afternoon with a patient suffering from AIDS, typically quite debilitated. Desmond had provided transportation from the

patient's village. We decided whether the patient could be helped in the hospital or should be transported back home, often to die soon. Obstetrical care was especially deficient, as evidenced by exsanguination of a woman after vaginal delivery; the woman had previously undergone a cesarean section. This event is nearly unheard of in the US. The exact cause of bleeding was not determined, and pharmacologic therapy was not given. Unfortunately, Dr Hardison's broad skills did not include deliveries, but he would have had little time to manage them anyway. Burns occurred when children tipped over lit lanterns, spilling burning kerosene on themselves. My wife and I cared for a 10-year-old orphaned girl with kerosene burns on her abdomen and extremities with daily debridement and application of silver sulfadiazine cream. Another memorable case was a young man with acute psychosis whose hallucinations responded to chlorpromazine. I heard of cases of blindness caused by drinking *changa*, a home brew to which antifreeze is sometimes added.

The patient who admonished me to remember Africa probably did not know that I would retain such vivid memories of my experiences. I think the reason I recall them so clearly is that I had to step out of my customary, narrow medical track and depend on myself more than I did in San Diego. And, of course, the focus in Africa was more intense—there was little else to do but take care of patients—and the context and maladies were quite foreign.

Of course, I could not help but wonder what measures would most improve the lives of these people. Better governance and more equitable distribution of resources are required. Then more people could have improved sanitation, electricity, and clean water. Until such changes occur, chance will determine the quality of life for many, including the quality of their medical care.

More than three years later, I still wonder what has happened to my patients. I'm sure the adolescents with tetanus died, but did the children with meningitis suffer permanent cognitive effects? Did the burned girl get a fatal infection after going home? Also, how many of the cheerful children I saw walking to a nearby school each morning will survive malaria or get tetanus or HIV? Despite these lingering worries, I highly recommend this type of experience. I had doubts about my ability to help both pediatric and adult patients with unfamiliar diseases in a foreign setting with restricted resources. I am sure many readers have the same concerns, but basic skills, energy, access to needed information, and the flexibility to adapt to reduced conveniences and technology can broaden our abilities beyond the narrower responsibilities most of us have. The experience helped me realize that no matter how great my deficiencies were, many patients would do worse without me. Dr Hardison once said to me, "In the land of the blind, the one-eyed man is king." I think my efforts helped many patients. No matter what your medical specialty or experience, you can serve in Africa and find some of the greatest professional fulfillment of your career. ❖

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Reference

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