The Dumbeta Dispensary: A Physician's Report

Overview of Dumbeta Dispensary

In April 2025, it was my privilege to be a guest of the Rafiki Village Project (RVP) in Dumbeta Ward. As a physician and psychiatrist, I was particularly interested in learning about the Dispensary and about the state of health care in the local community. I'm grateful to Dumbeta Dispensary's staff physician, Dr. Meshek Mesayi, and to the head nurse, Ms. Eunice George, for taking the time to be interviewed and for showing me the facilities. Thanks also to David Newman and Laura Orgel, who answered many of my questions and asked Dr. Mesayi and Ms. George excellent ones.

The Dumbeta Dispensary is the only health care facility located in Dumbeta Ward. It primarily serves Dumbeta Ward residents, although patients from outside the ward can also access services there. The population of the ward was 9,121 in the latest (2022) census and the ward's geographic area is 28.5 square miles. Thus, many patients travel long distances on poorly maintained roads to get to the Dispensary. A staff of four performs all of the clinical work of the Dumbeta Dispensary: there is a physician, a head nurse, an assistant nurse, and a laboratory technician.

The Dumbeta Dispensary has three buildings. The main structure houses an office for Dr. Mesayi, an examination room, a supply room, and a small clinical laboratory for specimen collection and basic testing procedures. There is also a covered outdoor waiting area — recently constructed by the Rafiki Village Project — that shelters waiting patients from the sun, wind, and rain.

Nearby, the newly constructed Birth Center is a spacious building with separate rooms for labor, delivery, and postpartum bedrest. Although there is no ultrasound machine for fetal imaging, the Birth Center is equipped with a Doppler fetal heart monitor. Mothers and newborns remain at the Birth Center for 24 hours postpartum, which is the World Health Organization (WHO) standard of care. Before it was built, there was one small room in the main building that was used for examination, labor, delivery, and bedrest, which meant that mothers often had to leave within hours of giving birth. At that time, the dispensary could only fully accommodate one delivery per day whereas the current capacity is three per day.

There is also a side-by-side duplex that was partially constructed by the Tanzanian government and eventually completed by the RVP in 2018. One side provides housing for the physician when he is on-call. The assistant nurse lives full-time in the other unit. A staff member is therefore present on-site at all times, which makes it possible for the facility to remain open twenty-four hours per day and seven days per week.

Dr. Mesayi graduated from college in Dodoma, Tanzania in 2013, with a degree in Clinical Medicine. In 2014, he was appointed to the staff of the Hanang District Hospital in Katesh and was in charge at the Simbay Health Center from 2015 to 2020, when he was transferred to the Dumbeta Dispensary. Regarding his work at the dispensary, he said, "I like it very much. It was my dream to become a physician. As time goes on, I'll go back to school for more specialized training." Ms. George attended four years of nursing college, where she received her diploma in nursing. Her degree program included training in midwifery and labor and delivery: vital background for her work at Dumbeta Dispensary. Her favorite part of her job is delivering babies. She has worked there for thirteen years. Her strong religious faith guides her work. As she told us,"Without God we can't do anything."

Ms. George lives in Katesh, works six days per week, and is on-call for deliveries when she is at home. This means that she must come to the Dispensary when a mother in labor is admitted. The doctor is there on the nurse's day off and can perform the delivery himself if she is unable to get back to the dispensary. In addition to working on-site at the Dumbeta Dispensary, Ms. George also does outreach to the nine sub-villages of Dumbeta Ward – for example, traveling by motorcycle to local schools to vaccinate children and teach them about health. Even in the dry season, the roads in Dumbeta Ward are in very poor condition. During the rainy season, it is often impossible for parents to bring their young children to the dispensary to be vaccinated. Currently, there is a volunteer nurse/community health care worker who assists with outreach and vaccinations but only for four days per month. Fortunately, one of the RVP's priorities for the coming year is to fund a more extensive community health care worker position.

Dr. Mesayi and Ms. George both told me that they love taking care of patients at the Dumbeta Dispensary, and their extraordinary devotion to their work was obvious to me. But they also made it clear to me that the dispensary would benefit from hiring more staff, particularly nurses. To do so would require government authorization. The four-person staff of the dumbeta Dispensary is stretched quite thin. They work long hours, have few days off, and may see thirty to forty patients per day, including mothers delivering babies. Patients get frustrated by having to wait a long time to receive care. The dispensary has one shared computer that is used for such tasks as patient registration, charting and other record-keeping, ordering supplies, medications, and lab tests, keeping track of medications and vaccines dispensed, recording test results, and communicating with other health care facilities and agencies. Staff often needs to use their phones, with inconsistent internet access, to perform many of the functions that could be so much more easily accomplished using computers. Fortunately, the Dumbeta Ward community has asked the RVP to prioritize the purchase of three additional computers. This goal can be quickly accomplished.

The RVP has given assistance to the Dumbeta Dispensary for the past eight years. During the first year, they provided indoor running water. Subsequent projects have included completion of the staff housing (2018), building and opening a Birth Center (2023), and constructing an

outdoor waiting area for patients (2025.) All along, the RVP has provided a quarterly stipend that supplements the funds received from the Tanzanian government. This aid has helped the clinic to greatly increase their stock of medications on hand.

Health Care in Tanzania

In Tanzania, there are several levels of public health care facilities, as follows:

1. Dispensaries
2. Health Centers
3. District Hospitals
4. Regional Hospitals
5. National Hospitals

Dispensaries are Ward-level, outpatient, primary care clinics. They generally do not have maternity units and Dumbeta Dispensary is exceptional in this regard, thanks to the RVP. Health Centers operate in more populous wards, provide inpatient and outpatient services and have maternity and pediatric units. Like dispensaries, they offer preventive care and health education. Patients with more complex health conditions who require more specialized and/or longer-term inpatient care are referred to District Hospitals, which provide the full range of inpatient medical and surgical services for adults and children as well as emergency care. Training of health care personnel and research also take place at these facilities. The District Hospital that serves Dumbeta Ward is in nearby Katesh.

Regional Hospitals offer services and specialized care that are not available at District Hospitals. The nearest one to Dumbeta Ward is in Babati, about 60 kilometers away. Finally, there are National Hospitals, such as the Muhimbili National Hospital in Dar es Salaam, which is a research and university level teaching facility with 1500 inpatient beds. There are also national specialty hospitals such as the Mirembe National Mental Health Hospital in Dodoma, which is the only psychiatric inpatient facility in Tanzania. Health care in Tanzania is provided free of charge for charge for children under 5, pregnant women, and people 60 years or older.

Clinical Care at Dumbeta Dispensary

Much of the care provided at Dumbeta Dispensary focuses on mothers and children. Although it has been decreasing in recent years, the current fertility rate in Tanzania is 4.47 children per family. Tanzania's fertility rate ranks twelfth among African nations and thirteenth in the world. (All countries in the top thirteen are in sub-Saharan Africa except for Afghanistan.) Clearly, the need for prenatal, obstetrical, and pediatric care in Tanzania is very great.

Patient education at Dumbeta Dispensary starts with the first patient visit and is ongoing, with a strong emphasis on family planning. Dumbeta Dispensary has a reproductive care clinic that

offers various types of contraception, including intramuscular medroxyprogesterone injections, hormonal implants, birth control pills, and condoms. In Dumbeta Ward, where most families rely on subsistence farming, a family of five children or more can expect to suffer significant hardships. Dr. Meshayi noted that "early marriages" (at ages 14-16) and teenage pregnancies are very common in the community. Adolescent mothers often do not receive adequate prenatal care and have higher-risk pregnancies. They also often lack the emotional maturity and economic stability needed to take good care of their children. Domestic violence and child abuse, which are big problems in the community, may well be more prevalent in these families.

Pregnant mothers may receive up to fourteen prenatal visits at Dumbeta Dispensary, which exceeds the WHO standard of eight. The prenatal clinic gives pregnant mothers folic acid, mebendazole prophylaxis for parasitic worms, routine anti-malarial prophylaxis, and insect nets for the mother and infant, to prevent contact with the mosquitoes that transmit the disease. The Dispensary staff teaches expecting and new parents about nutrition for the pregnant mother and her infant. They are instructed about breastfeeding and discouraged from engaging in longstanding local practices such as mixing porridge, milk, and water in the breastmilk or formula. Parents also receive education about the routine early childhood vaccines that are provided at the Dumbeta Dispensary. These include vaccines for measles, polio, Streptococcus pneumoniae (pneumococcus) BCG (anti-tuberculosis prophylaxis), and respiratory syncytial virus (RSV.)

In addition to providing excellent prenatal care, the Birth Center has given expecting mothers in Dumbeta Ward a better option for giving birth. Those who have received their prenatal care at the dispensary are well known to the staff by the time of delivery, which leads to better outcomes for mother and infant. Currently, 25% to 30% of babies in Dumbeta Ward are born at home, where conditions are suboptimal. However, this is a far lower percentage than when Ms. George started working at Dumbeta Dispensary, and one that its staff hopes will continue. The other local delivery option is the District Hospital, in Katesh, which some mothers choose mainly because it is closer to their homes than the dispensary.

Female circumcision is a common practice in Tanzania, especially in the Dumbeta/Manyara region, where Dr. Meshayi estimates that ninety percent of girls and women are circumcised. It can lead to significant psychological injury to girls and women, as well as obstetrical risks that can be potentially life-threatening to the delivering mother and harmful to the newborn infant. During the first one or two months of a baby girl's life, a female village elder, usually her grandmother, will cut out her clitoris. Because the amount of experience or training the elder has in performing this procedure is highly variable, the degree of damage to the girl's genital region also varies greatly. The risk of infection is high, given that the circumcision is performed at home and not under antiseptic conditions. Removal of the clitoris impairs vaginal and cervical dilatation when the pregnant, circumcised mother goes into labor. Cervical tearing and hemorrhaging, trauma to the fetus, and in severe cases, maternal death can result. At the Birth

Center, Dr. Meshayi and Ms. George can repair first-degree cervical tears. However, if a mother in labor has second- or third-degree cervical tearing, it is a medical emergency requiring transfer to the District Hospital. Despite efforts by the government and by the Dispensary staff to advise against clitoral circumcision, the practice persists; it is a strong and longstanding cultural tradition among the tribes that live in the region.

The most common ailments found in children treated at the Dumbeta Dispensary include upper and lower respiratory infections such as influenza, viral or bacterial pneumonia; asthma; and diarrhea. These illnesses are also found among the adult population, along with epilepsy and urinary tract infections. As is generally true, urinary tract infections occur more frequently in women.

While Tanzania has made notable progress in reducing the incidence of tuberculosis in recent years, it is still ranked fourteenth or fifteenth among all nations. A large percentage of patients with TB also have HIV, as tuberculosis is an opportunistic infection that frequently occurs in patients with HIV/AIDS due to their being immune-compromised. Tanzania has made great strides in reducing HIV prevalence and in lengthening the lifespans of HIV patients through the use of antiretroviral medications. Significant progress has also been made in reducing malaria. Still, in 2022, Tanzania ranked among the ten countries in the world with the highest number of malaria cases and deaths. Fortunately, levels of malaria are low in the Manyara region and few cases present at the Dispensary. The number of TB and HIV patients has also declined. Pregnant mothers with HIV are given medications to prevent HIV transmission to the fetus.

Much of Tanzania's progress to date in combating malaria, tuberculosis, and HIV/AIDS was made possible by funding from U.S. Agency for International Development (USAID). According to Dr. Mesayi, USAID had provided about 90 % of the national budget to fight these infectious diseases and 60% of the nation's entire health budget. Tragically, the Trump Administration has recently dismantled USAID, thus severely depleting the financial resources of Tanzania and many other third world countries that are necessary for tackling disease, hunger, and poverty. Per Dr. Mesayi, "The [Tanzanian] government is making plans about how to handle that challenge." With the sudden elimination of USAID funding, the need for non-governmental organizations (NGOs) such as the Rafiki Village Project to increase their financial assistance to Tanzania is greater than ever.

Environmental Factors

Dr. Meshayi and Ms. George both cited the contribution of environmental factors to the high incidence and prevalence of respiratory, gastrointestinal and genitourinary illnesses among the patients seen at the Dumbeta Dispensary. People living in this rural region of Tanzania are exposed to elements in their environment that lead to more disease. I learned some interesting and surprising facts, such as why the prevalence of epilepsy is quite high in Tanzania and other countries in sub-Saharan Africa: It turns out that the pork tapeworm (Taenia solium) causes

neurocystocercosis, a brain infection that leads to epilepsy. Cerebral malaria, especially in children, can also cause a severe seizure disorder. In addition, perinatal trauma to the infant, and head trauma from motor vehicle accidents, which I imagine might be fairly common on the rough roads of Dumbeta Ward, can all result in seizure disorders.

The widespread use of biofuels such as wood for cooking is associated with the high incidence and prevalence of respiratory illnesses throughout sub-Saharan Africa, including Tanzania. Exposure to dust in this arid agricultural region is another risk factor for pulmonary disease. There is a seasonal increase in the incidence of upper respiratory illnesses during the rainy season, when the weather is cold, windy, and wet. The degree of access to clean water, sanitation, and hygiene (referred to by international development and aid organizations by the acronym WASH) has a significant impact on health outcomes. While a growing number of people in Dumbeta Ward have gained access to clean water and toilets in recent years, many households in Dumbeta Ward still lack both. Using contaminated water for drinking, cooking, washing, bathing, and toileting can lead to diarrhea, amoebic dysentery, schistosomiasis, urinary tract infections, and many other illnesses that have a high prevalence in the Manyara region of Tanzania, where Dumbeta Ward is located. People in the sub-villages of the Ward live close to their livestock. Infected animals can spread parasites and other pathogens to humans via direct contact or by contaminating water, food or soil. The risks increase when there is a lack of infrastructure for access to clean water, both for humans and their animals, and for sanitary disposal of animal and human waste products. The Dumbeta Dispensary staff provide vital teaching about sanitation, hygiene, and animal handling to the families they serve.

The prevalence of alcohol abuse is higher in rural areas of Tanzania than in its cities. Dr. Mesayi confirmed that it is quite common in Dumbeta Ward, especially during harvest season, when farmers have more money to spend, and the abundant maize and other grains are ready to be distilled to produce alcoholic beverages. The psychosocial and medical problems associated with excessive alcohol consumption are well known. However, abuse of recreational drugs is rare in this region.

Africanized bees pose another serious environmental health problem in Tanzania, including Dumbeta Ward. The Africanized bee (or “killer bee”) is a hybrid of various European honeybee varieties and the native East African lowland honey bee, bred in order to produce more honey in tropical regions. Beekeeping is an important agricultural practice in Tanzania. Unfortunately, when disturbed, Africanized bees will chase and sting people and animals up to 1300 feet away. Their venom is not in fact stronger than that of other honeybees; the danger comes from being stung many times.

The Dumbeta Dispensary staff gives antihistamines and/or hydrocortisone to patients who have had one or a few bee stings. Someone who has received 50-100 bee stings may present with nausea, vomiting, diarrhea, dizziness, or anaphylaxis, which is a severe, life-threatening allergic reaction to the venom. Patients who come to Dumbeta Dispensary with many bee stings are

given intravenous fluids with antihistamines, epinephrine to prevent or treat anaphylaxis, and possibly steroids to reduce airway tissue swelling. The most severe cases are transferred to the District Hospital in Katesh, where intubation and advanced respiratory support may be necessary to save the patient's life. Time is of the essence in treating Africanized bee stings; death is more likely to result if there is too long a delay in initiating treatment.

Closing Remarks

Coming to the Dumbeta Dispensary and learning about the care provided there was a great opportunity for me, and one of many transformative experiences that I had during my visit to Dumbeta Ward as a guest of the Rafiki Village Project. I hope that I have conveyed a clear picture of the key health issues that affect people in this region and in Tanzania as a whole, and that my report gives its readers a good sense of the excellent work that the staff of Dumbeta Dispensary is doing to take care of its patients. These are four extremely dedicated, competent, and resourceful clinicians who work tirelessly and with very limited equipment, infrastructure, and financial means. Over the thirteen years since it first opened, Dumbeta Dispensary has made great progress in improving the lives of the people it serves. Yet much work remains to be done. Your support is vital.