MEDICINE & RADIOLOGY IN TANZANIA

https://fameafrica.org/aboutfame

OVER 10,000 MILES FROM SANTA ROSA, CA

FAME - LOCATED IN REMOTE AREA ON RIM OF NGORONGORO CRATER

A YEAR OF PREPARATION

- LEARNING THE LANGUAGE - KISWAHILI
- RESEARCHING THE CULTURE
- VACCINATIONS
- FLIGHTS, ACCOMODATION AND TRANSPORT TO FAME
- FEES, VISAS, INSURANCE, CONSULATE INFO
- WHAT WAS I GOING TO DO IN TANZANIA???? - Communicating with FAME and the Rad Techs
- DONATIONS - batteries, linens, BE supplies, sharpies, + 2 computers
- PACK. REPACK. REPACK AGAIN. AND AGAIN
CULTURAL CHECK - TANZANIA
(GOING IN)

- Modesty. It is impolite to show shoulders and knees
- Never walk by without greeting!
- Greetings. It can take a long time to get to the point. Greetings and niceties are important and must be completed first.
- Pole, pole... no sense of urgency...
- "Pole" - "Sorry" - sorry for your hardship, illness, job
- Telling time: 12 hours daytime (siku) 12 hours nighttime (asiku)
  - 7a = 1 o'clock. 7p = 1 o'clock
- OH NO! I AM LEFT HANDED!!!!!!

TANZANIAN FACTS

1/2 THE POPULATION HAS NO ACCESS TO PROPER WATER
1/4 OF THE POPULATION HAS NO ACCESS TO SANITATION
ROUGHLY 30 PERCENT OF CHILDREN UNDER FIVE IN TANZANIA SUFFER FROM CHRONIC MALNUTRITION AND 16 PERCENT ARE UNDERWEIGHT.
MALNUTRITION AFFECTS CHILDREN'S PHYSICAL DEVELOPMENT. THE RATE OF STUNTING IN TANZANIA RANKS THIRD IN SUB-SAHARAN AFRICA.
POVERTY IS HIGHEST IN RURAL AREAS, WITH AROUND 47 PERCENT OF THE COUNTRY'S POOR LIVING IN THOSE REGIONS.
ON AVERAGE, WOMEN IN TANZANIA WILL HAVE FIVE CHILDREN.
ONE-THIRD OF WOMEN ARE DEFICIENT IN IRON, IODINE, AND VITAMIN A AND TWO-FIFTHS ARE ANEMIC.

TANZANIAN FACTS

MEDICALLY TRAINED PROFESSIONALS ARE IN DEMAND

ACCORDING TO THE WORLD HEALTH ORGANIZATION, THE IDEAL RATIO FOR DOCTOR: PATIENT = 1:300

IN TANZANIA THEY HAVE 1 DOCTOR FOR 20,000-80,000 PATIENTS
LIFE EXPECTANCY
- 1960s - 45.3 yrs
- 2009 - 55 yrs
- 2018 - 63.9 yrs

LEADING CAUSE OF DEATH
- 1. TUBERCULOSIS #9 (WORLD)
- 2. INFLUENZA & PNEUMONIA
- 3. HIV/AIDS
- 4. CORONARY HEART DISEASE
- 5. DIARRHOEAL DISEASES

6. STROKE
7. MVA's #9 (WORLD)
8. CERVICAL CANCER #5 (WORLD)
9. PROSTATE CANCER
10. MALARIA

EPILEPSY - #3, ANEMIA #10 (WORLD)

Abilinism is very high in TZ - 1:1500 and ritual killings for body parts are not uncommon

TERMITE HILLS BETWEEN ARUSHA AND FAME

WORLD'S LARGEST CONCENTRATION OF BABOONS CLOSE TO MANYARA PARK

BABOONS EVERYWHERE
MANY HAVE SYPHILIS
- PHYSICAL SYMPTOMS ATTRACTIVE TO OPPOSITE SEX
TIMELINE OF FAMEAFRICA

2002 - conception
2005 - mobile clinic to Rift Valley Children’s Village
2008 - Outpatient Clinic opens
2010 - Ground breaking for hospital
2011 - Laboratory opens
2012 - First IP admitted
2014 - First surgery; Labour & Delivery; Vaccination program
2016 - X-ray & CT
2019 - Maternity/Birthing

FAME HOSPITAL

- 14 IP BEDS (1045 ADMISSIONS)
- 9 MATERNITY BEDS (721 DELIVERIES IN 2018)
- 2 SURGICAL THEATER, (538 SURGERIES)
- VARIETY: CHOLEs and APPYs, C-SECTIONS, SBOs, ODD & UNUSUALS - ELEPHANT GORINGS
- 2 DELIVERY ROOMS, 1 EMERGENCY DEPARTMENT, RECOVERY

THE FAME AFRICA FACILITY

- CANTEEN
- PHARMACY
- LAB
- RADIOLOGY
- ADMINISTRATIVE OFFICES
- MATERNAL EDUCATION - BABY WELLNESS CLINIC
- MOBILE CLINIC
- SOLAR
- GARDEN - FOR FEEDING STAFF AND PATIENTS
- VOLUNTEER HOUSING
BABY WELLNESS CLINIC:
NURSE SIENA GIVES SEMINAR ON MATERNAL SELF-CARE, BIRTH CONTROL, NUTRITION

WELLNESS CHECKS PERFORMED FOR LOCAL ORPHANAGES

FAME FACILITY OUTPATIENT CLINIC - 100+ PATIENTS PER DAY
Future home of Maternity & Birthing Centre - donors welcome!

UGALI & COLLARD GREENS GROWN IN FAME GARDEN
- RICE FLOUR & WATER COOKED TO CONSISTENCY OF VERY STIFF MASHED POTATOES. IF IT STICKS TO YOUR FINGERS IT IS NOT COOKED WELL.
- UGALI IS USED AS A SPOON
- UTENSILS NOT USED, TRADITIONALLY
- RIGHT HAND.

CANTEEN

VOLUNTEER PROGRAM - SUPPORT
- Doctors, RNs, ancillary staff, specialists from all over the world
- Most volunteers return, often once or twice a year
- NOVEMBER 2018: Radiologist, Diabetes, Peds, ER MD, Surgical Fellow from Creighton, retired surgeon, retired Gynecologist, neurosurgeon.
EMPLOYEES ARE TANZANIAN
VOLUNTEERS ARE SUPPORT
ADVANCING EDUCATION
FOR FAME DOCTORS
MUTUAL EXCHANGE OF KNOWLEDGE

TANZANIAN DOCTORS
AT FAME:
VARYING EDUCATION
CO’S - GRADE 10+3 YRS PRACTICAL
AO’S - 2 YRS POST HIGH SCHOOL
MO’S - 5 YEARS POST HIGH SCHOOL
MD’S - FAME OFTEN PAYS FOR EDUCATION

80% OF POPULATION USES
SHAMANS/HEALERS/WITCH DOCTORS

MY DAILY ROUTINE - 6 DAYS WEEKLY
7:30 or 8a - Conference room
0830a - Rounds
0900a - Radiology
4:30p - home
5p - hike with friends back before 6p (dark = hyenas!)
8p - bed
MORNING HUDDLE THEN ROUNDS

- Twice weekly: presentations from guests and volunteers -
- 8AM: Morning debrief of each patient, questions, problem solving
- 9AM Rounds

MORNING ROUNDS - SO CROWDED!

CULTURAL CHECK - TANZANIA

MY FIRST DAY AT "WORK" - "SOPHIE'S CHOICE"

- Maasai Twins - rarely enough breastmilk for both infants
- First 1000 days of a child’s life is most important to prevent irreversible damage
- High infant mortality - babies recognized at 3
- 57% of children under age 5 are anemic
- 33% are vitamin A deficient
- Shamanistic healing - often arriving at FAME too late

[Links and figures as appropriate]
MAASAI
Semi nomadic, superb survival skills - 22 sub-tribes
Language Maa with multiple dialects (NOT KISWAHILI)
Displaced from fertile grazing lands through the creation of wildlife preserves such as Ngorongoro, Serengti, Manyara.
Traditional life style, disregarding Govt policies

MAASAI AND TRIBAL CULTURE

• Payment in cattle, goats for grievances
• Wealth determined by # of cattle, # wives & children
• Cattle - main food = RAW meat, unpasteurized milk and fresh blood with crops such as maize added though not widely accepted culturally - UGALI
• Toddlers will drive cattle to graze

CATTLE AS A WAY OF LIFE - evident in disease patterns

MAASAI YOUTH
WARRIOR (MORAN)
PREPARING FOR YEAR OF ENTERING MANHOOD

• Male rites of passage - Over a week of singing and dancing
• Junior warriors:
  • circumcision - emorata. Bravery. No anesthetic, often non-sterile - black clothing for up to six months afterward while healing.
• Housed in Manyatta, built by mothers, no kraal
• Senior warriors and other graduations

CULTURE CHECK - TANZANIA

“VALUE OF THE ELDERS”
- Will often mourn the death of a parent or grandparent more than the death of a child
- Loss of wisdom
- Can have more children

• CARRYING FUEL TO THEIR HOMES FOR COOKING FIRES.
  • MILES AND MILES
  • In their mud huts, they cook their meals, inhaling smoke and damaging their lungs. COPD is rampant.

“Brick factory” near FAME
BOMA “MANSION”
RADIOLOGY!!!!
TECHNOLOGIST EDUCATION

- SONOGRAPHY, MRI, CT, X-RAY
- 2 YEARS - 6 SEMESTERS - DIPLOMA
- ONE SCHOOL - IN DAR ES SALAAM
- CROSS SHORTAGE OF TECHS

X-Ray room - donated with Carestream reader. 5 cassettes. Automatic exposure.

EQUIPMENT FAILURES AND REPAIRS

- CT Scanner - donated by a veterinarian - November, 2018 needed a UPS. In January 2019 it finally arrived (bureaucracy x 100) but then the XR Tube was blown.

- March 17, 2019 - XR Tube delivered and CT Scanner up and running.

MY PROJECTS

- Presentation - infection control
- Presentation/training BE
- Training - SID, CASSETTE SIZE, positioning, techniques, AEC
- Cleaning! SEPARATE GOWNS FOR EACH PATIENT, change linens! Wipe buckys!
- Acquiring supplies - barium, new cassettes, tech markers
- Contrast reaction boxes
Radiology technologists:

- perform HSG's with no fluoro, no catheter except a Foley, with some ingenuity to create a guide wire
- are asked for diagnosis. Doctors asking techs what is wrong with their patient. Skill level for reading images is increasing but they rely on techs to point out anomalies
- technologist hungry for new knowledge: B.E.s!! :)

HSG NO FLUORO

OUR TANZANIAN VOLUNTEER FOR B.E. TRAINING
EAGER TO
LEARN B.E.S!!!!

DR. KELLY SHINE
DEMONSTRATING
TO DR. BADYANA
A T-TUBE
CHOLANGIOGRAM

A FIRST AT FAME
NO FLUORO

ONAELLY
SOAKING IN THE
EDUCATION
FIRST CHOLANGIOGRAM PERFORMED IN X-RAY

CULTURE CHECK - TANZANIA

- 29 yr old woman, mother of 5 children, fell out of a tree
- Teardrop fx of 5th cervical vertebra
- Permanent quadraplegia.
- Why was she in a tree?

PATIENT WAS CLIMBING A TREE TO GATHER FUEL FOR HER FAMILY
CULTURE CHECK - TANZANIA
HEALTH - EVERYDAY COMMON ILLNESSES

• ANEMIA - assumed AND SEVERE
• TUBERCULOSIS - In TZ - organs, bones, BRAIN
• CUTANEOUS ANTHRAX - untreated 20% fatal - from contaminated animals/hides/hair.
• BRUCELLOSIS - transmitted from cattle & goats - unpasteurized milk and cheese - Night sweats, fever, reproductive dz & liver damage
• SCHISTOSOMIASIS - worms
• COPD - less about cigarettes & more about cooking indoors
• MALNUTRITION - Last patient of my stay

UNUSUAL CASE CAUSING S.B.O.

NEUROFIBROMATOSIS AKA ELEPHANT MAN’S DISEASE (MISNOMER)

NEUROFIBROMATOSIS SURGERY SAVED THIS PATIENT’S LIFE
30 YR OLD WOMAN WITH SEVERE TB

ASCITES CAUSED BY WORMS IN LIVER

CULTURE CHECK - TANZANIA
PATIENTS AT FAME

• Birthdates often unknown - generic July 5, 2000 - difficult to discern between patients with same name
• Night sweats, fevers - most common hx
• stoic, patient, uncomplaining
• Example: hyena attack

FIVE YR OLD LIMPED MANY MILES TO FAME COMPLAINING OF PAIN AFTER BROTHER HIT HIS LEG.
INITIAL DIAGNOSIS WAS FX FROM ASSAULT BUT IT WAS DETERMINED CONGENITAL AND HE HAD BEEN WALKING ON THIS LEG SINCE HE WAS BORN.

WAITING FOR X-RAYS - LUNCHTIME. POLE, POLE

ONE OF TWO DRUG REACTION BOXES IN RADIOLOGY - BIG PROJECT, ...POLE, POLE...
39,000 TZ SHILLINGS = ~$16USD

BLOOD TESTS, URINALYSIS, DR. CONSULT, 2 X-RAYS (MOST $$$)
ASANTE SANA

CULTURE CHECK

• Leaving TZ
  • Assumptions - respect for their culture, knowledge
  • Grief - lives that could be saved with more accessible healthcare and education (shamans)
  • Appreciation for real life problems
  • Perspective

REFERENCES


   https://www.worldlifeexpectancy.com/tanzania-life-expectancy


   https://commons.wikimedia.org/wiki/File:Young_Maasai_Warrior.jpg#/media/File:Young_Maasai_Warrior.jpg


   sharpphotography.co.uk, CC BY-SA 4.0, https://commons.wikimedia.org/wiki/File:Young_Maasai_Warrior.jpg#/media/File:Young_Maasai_Warrior.jpg
Two rainy seasons and two dry seasons

November is beginning of short-rain season

HUGE raindrops!