

ONE**HEART**SOURCE |

Mateves Community Health Center Proposal

Table of Contents

Abstract Purpose

Primary Objectives of the Clinic

Mission / Vision of One Heart Source

The Need

Numbers to Address

Barriers to treatment

Mateves Ward

Approach: A Sustainable Health Model

Health Sustainability

Economic Sustainability

Environmental Sustainability

Purpose

The purpose of this clinic is to provide primary health care and treatment to the Mateves community. The **Mateves Community Health Center** will focus on long-term community health through preventative health education and emphasis on prenatal and pediatric care, and reducing the limited-accessibility barrier to healthcare.

We plan to meet these goals through implementing sustainable environmental and economic methods.

By improving health we simultaneously attack social problems of HIV/AIDS, poverty, health inequality. Our hope is that the Mateves Community Health Center may serve as an efficient and replicable **sustainable health model** in other wards around Arusha, Tanzania and the global community.

Primary Objectives: Summary

- Provide **free** health care to pregnant mothers and orphaned children while maintaining quality of care
- Significantly reduce childhood mortality due to preventable diseases such as malaria, tuberculosis, diarrhoeal illnesses
- Improve women reproductive health care; Advocate pregnant mothers to receive HIV tests during prenatal clinical care
Provide free and regularly accessible HIV/AIDS testing, education, and counseling
- Provide low-cost health care to all residents while maintain quality of care
- Provide education to residents on how to recognize and prevent common illnesses and diseases
- Promote long-term healthy living practices through health education such as nutrition, child development, family planning
- Serve as a referral network
- Collect accurate data about rates of various diseases and health complications within the community
- Improve quality of medical care and promote awareness of health needs through exchange of ideas between local physicians and international volunteering medical professionals

Vision of One Heart Source

We are committed to promoting the well-being, growth, and development of abandoned children and orphaned children in underdeveloped and developing countries through high-quality care and education programs, and providing sustainable support to local communities. The purpose of empowering education is to promote academic enrichment, life skills, and character development of the children to build effective lives and become potential community leaders, so that they may continue the cycle of positive social change.

We Believe...

Lasting social change requires shared responsibility.

Individuals are empowered through investment in their community

Every action has a reaction.

Hence it is necessary to implement sustainable social, economic, and environmental methods at all levels. With this consideration a self-sustainable and replicable model that can be implemented at each ward to minimize cost overtime and maximize effectiveness for long-term benefit.

Prevention is the only real cure.

Through education, awareness, early detection, improved accessibility to social and medical services can we work to truly uplift individuals and communities. Education is the only vaccine to HIV/AIDS, until a cure is found.

In giving kids a better chance at a fair life.

Our focus on vulnerable children and HIV/AIDS is in the same moment actively attacking poverty and lack of education in less developed countries. The spiral-down impact that the epidemic has on society and children can be significantly reduced.

The need is NOW.

Waiting for tomorrow will not solve the challenges of today.

Numbers to Address

One of the most disheartening facts about working in Tanzania is the extensive amount of suffering and death are often due to diseases that are not only preventable but in many cases also curable. Knowing this makes the numbers below completely unjustifiable. Every Tanzanian Ward is in need of a medical center. This is especially the case for young children who's weakened immune systems are compromised by these diseases.

- **Every 15 seconds**, a young adult between the ages of 15 and 24 is infected with HIV. *(UNICEF)*
 - Approximately **2.3 million children** under age 15 currently live with HIV. *(Global AIDS Alliance)*
 - **Less than 5 percent** of HIV-positive children under the age of 15 in need of anti-retroviral medicine receive it. *(UNICEF)*
 - **Eighty percent of children with HIV die** by age five without treatment; **80 percent are alive** at age six with ARV treatment. *(Global AIDS Alliance)*
 - An estimated **11 million children under age five** die each year from **preventable or treatable diseases**. In 2004, an estimated 10.5 million children died before they reached age five, most from preventable diseases. *(World Health Organization)*
 - Every day, **more than 16,000 children - one child every five seconds - dies from hunger-related causes**. *(Bread for the World)*
 - Each year, more than 10 million children in low- and middle-income countries die before reaching their fifth birthday. **Seven in 10** of these deaths are **due to just five preventable and treatable conditions**, or often a combination of them: pneumonia, diarrhea, malaria, measles, and malnutrition. *(World Health Organization)*
 - **More than 150 million** episodes of **pneumonia** are estimated to occur each year among children under age five in developing countries. **Twenty percent of those cases are fatal**. *(World Health Organization)*
 - **One in five deaths** of children under age five in Africa is attributable to **malaria**. **Malaria kills a child in Africa every 30 seconds**. Many children who survive malarial episodes often struggle with learning impairments or brain damage. *(Roll Back Malaria)*
- Percentage of African children killed by malaria: 5 percent, or almost 3,000 each day, most common age at death: 4 years

Barriers to treatment

Accessibility to Medical Care

- Currently, there is no clinic or any type of center dedicated to health care and education in Mateves Ward.
- Higher quality of care and hospital care can be found in Arusha town. Some government facilities offer reduced or free rates, however, these services are only in the city

Limited care in rural clinics

- Rural clinics are often limited in service; often it is difficult to get a full-time qualified physician, limiting the number of hours that the clinic is operating.
- Specialists are not available
- Electricity and clean water are often unreliable. Clinics running out of needed utilities cannot stay open

Time is a huge factor

- Traveling into town for medical care requires a walk to paved road, and then public transportation for an hour or more into town. Total travel time can range from 1.5 to even 3 plus hours one way.
- Waiting time at hospitals or clinics is worse than emergency rooms in the United States. Waiting rooms are constantly filled to capacity by midday, with patients flowing outside the doors.

Affordability

- The cost of treatment alone is relatively inexpensive. For example, the cost of diagnosing malaria is 1,000 TSH (= 0.87USD) and treatment is 1,500TSH (=1.3USD). Although these prices are incredibly low relative to U.S. standards, these prices are in fact equivalent to one days wage for a person in Tanzania.
- However when you total in the loss of income from a day of work, the cost of transportation, and the loss of productivity in the home, the cost may be too high of a deterrent to treatment

Attitude toward health care

- A pervasive sense of weariness has developed toward healthcare. The additive barriers to treatment keep people away from medical services until illness is critical. Exacerbated health problems and illness makes the total cost of treatment and recovery extremely high.
- The common mentality has become that only very sick people seek medical help. The perception is that once a patient enters a hospital there is no good that will come from it.

Preventative and follow up care becomes rare

- Regular checkups which are essential to monitoring overall health, especially of growing children, do not happen often
- Prevention is key to long-term health—preventative healthcare in this region is not practiced because it is not feasible for most families

Mateves Ward: Population Profile

People

- 50,000 people living in the Mateves Ward, 25,000 are children
- Over 3,000 children are estimated to be abandoned or orphaned. This number is rising due to families becoming destabilized as family members move out of rural areas and into cities in search of better job opportunities.

Economic Structure

- Mateves and the wards surrounding are heavily agriculture communities: GDP 2008 is less than 2 dollars a day. Agricultural jobs are giving way to urban employment as the allure of Arusha city draws in jobs and job seekers.
- Economic factors are pushing productive men and women out of rural areas. Men especially become migrant workers seeking job opportunities in urban areas. This leaves the women and mothers of the household to care for the home and children, and take on agriculture and food production work left by the men.
- Child labor is on the rise to support families that are not making enough money for food. This pushes school-age children into the fields and even factories.

Family Structure

- Mothers are the caretakers working 16 plus hours a day to accommodate all the needs of the household. When a mother is the essential pillar of the family, this means that she will not likely take time out for one child who is ill or for herself unless it is critical.
- Fathers are the income earners of the family. Men oversee business and farmland, and take care of all things external to the family.
- Mothers take care and raise her children fulltime. If the mother gets sick this can potentially jeopardize the integrity of the family.

A word on our method of approach: sustainability

A successful and effective health model that promotes the long-term success of an entire community is achieved by tying together sustainable social, economic, and environmental factors.

Our sustainable health model targets the reduction and elimination of the barriers to healthcare. We focus on strengthening the family through emphasis on preventative healthcare.

Health Sustainability

Preventative care is central to sustaining long-term health of an individual and community, and will be practiced through the following components:

- **Through education**
 - Parents and patients attending the health center will be taught to look for common symptoms to major diseases. This helps in early detection and early treatment.
 - Parents and patients will have access to information at the clinic on family planning, early childhood development, nutrition
- **Through accessibility**
 - Distance and travel time cost is significantly decreased if not completely eliminated. A local clinic means local access, reducing the barrier to medical services
- **Through affordability**
 - Easily affordable low-cost examinations and treatment for all residents
 - Free examinations and treatment for abandoned and orphaned children
 - Free examinations and tests for common illnesses for pregnant mothers, mothers with young children
 - Free examinations and tests for common illnesses for all children
 - Free HIV testing and counseling
- **Through quality of service**
 - We look to integrate best medical practices and ideas from around the world. This will be done through exchanges between our local Tanzanian physicians and international volunteer medical personnel.

ONEHEARTSOURCE | A Sustainable Health Model

- Our medical staff will be held to the highest standard to provide high quality care and promote prevention and early detection
- Referrals will be made when necessary to specialists or treatments and procedures for critical care. We look to connect with hospitals and specialists to reduce referral delay.
- ***Through free HIV testing & counseling***
 - Prevent MTC transmission by advocating pregnant mothers to get tested and receive necessary care for herself and her baby if she is HIV positive. Mother-to-child transmission of HIV accounts for 18% of infections in Tanzania, compared to less than 1% in the United States. The current rate of pregnant women receiving prenatal care in is at 93%, however, only 5% will receive HIV testing and results. The impact here is meteoric—with knowledge of the mother’s status, prevention of mother-to-child transmission can dramatically reduce the numbers of infants born with HIV. This is breaking the cycle of generational transmission of HIV.
 - Raise community awareness on HIV/AIDS, significantly reduce social levels of stigma through education, spread prevention knowledge throughout the community.

Economic Sustainability

The cold fact is that the East African population has a health care need that is far greater than the current resources being provided.

The success of establishing a medical center that can function sustainably is creating an economic system that allows resources to reach those most in need yet still be financially available to the population as a whole.

- The vast majority of people in the Arusha area currently travel to town for treatment which can often take an entire day’s time and also be very costly. OHS intends to make the medical center available to all at a fraction of the in-town cost.
- The profits earned from doctor’s visits and the pharmaceutical dispensary will be used to provide free services for all orphaned and vulnerable children and pregnant women in the Ward.
- This allows everyone to benefit from health resources provided in the ward without depleting the resource.
- Free HIV testing for the ward and free malaria test for all children will be provided for by donation bundles.

Another important aspect of the medical center that ties in to the overall goals of creating a system of social well being is a notion of **shared responsibility**.

- Since OHS cannot possibly take in the three thousand orphans in the ward; it will award those families that take on the responsibility.
- For example if a family takes in an abandoned child then that families children will receive free health care.
- Strict monitoring will be administered to ensure that the previously abandoned child is indeed being nurtured and is not just being used as access to health care.

Environmental Sustainability

Hydraform Earth Bricks

- Bricks are composed of 95% soil and 5% cement. They are very efficient and low cost to make. The Hydraform Machine uses high hydraulic pressure to create incredibly durable bricks. No toxins! A fully organic building is very important for children with weakened immune systems due to HIV.
- Eco-friendly using Earth directly from where construction takes place so no transportation is required. In addition no heating is used in the process.
- The bricks are interlocking so no mortar is required, this reduces labor and resource costs.
- You can build 5 times as fast as conventional brick laying. 500 bricks can be laid per person every day.
- Anyone can be a brick layer. Once an engineer sets the footings, any one can lay a brick by simply sliding it into place.
- Not a one time shot. The machine can be used for all other projects including housing, schools, and recreation and vocational facilities.

Hydraform Earth Brick Machinery

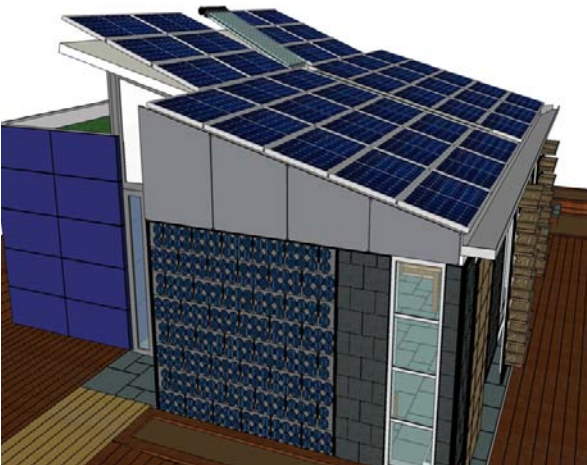




Example of building structure composed of earth bricks

Solar Power and Rain Water Collection

- Solar will be comprised of 20 40Watt STP panels and 15 no-maintenance 100V batteries. To provide all power for lighting the 3000 sq. ft. medical center and running computers and lab equipment.
- This allows the med center to be off the main city grid which allowing both full time dependability and an almost non-existent ecological impact.
- The corrugated recycled steel roof will have a gutter system leading into a 20,000L rain water collection tank.
- This is perfect in the Arusha region since there is a minimum of 60mm rainfall in every moth of the year, this is more than sufficient for the projected water usage.
- These two key factors allow the medical center to be fully self sustained for its water and power needs.



Solar Panels

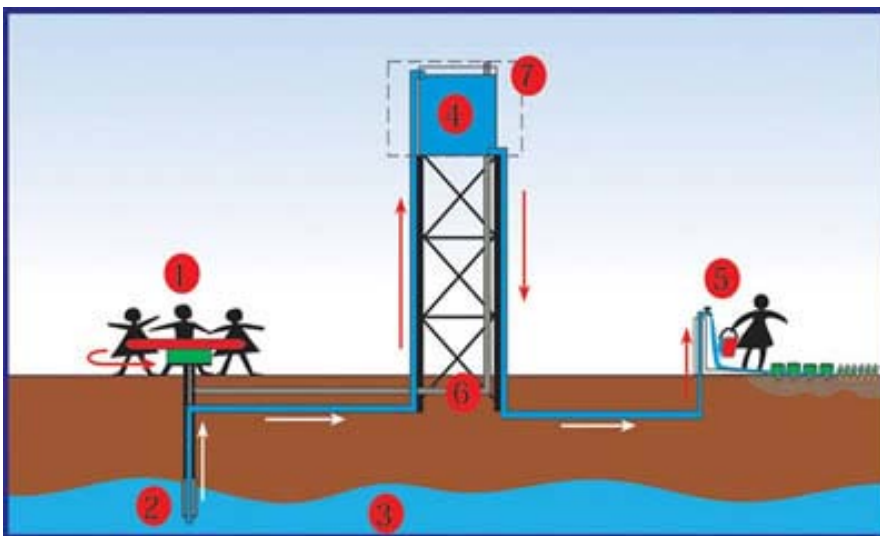


Example of Rain Water Collection System

PlayPump System

- Basics: kids play and water gets pumped.
- The kinetic energy from the use of a merry go round and a see saw is captured and used to power a pump that pushes water from the underground rain water collection tank to the water tank on top of the building.
- At which point we can simply allow gravitational force to provide water pressure leading in to the medical center.
- The water will travel through a reverse osmosis water filter and a UV light that is connected to the solar power system to completely purify the water so that it is lab usable and drinkable.

Mechanics of PlayPump System



Envirolet

Envirolet is a self-composting toilet.

- In Sub-Saharan Africa pit holes are used and then covered with soil and then a new pit hole is dug.
- Unfortunately this causes soil seepage that often times makes it in to water supplies that are based on bore holes. Dirty water is the cause of 80% of all preventable deaths,
- Envirolet actually takes the excrement and using a solar powered fan feeds it oxygen that is used in combination with pro-biotic feed that naturally break down the excrement.
- Within a weeks time all methane will have been removed from the excrement and the broken down organic molecules are added to our organic gardens as manure.
- Waterless! This eliminates the need for hundreds of feet of piping and the use of harmful chemical or to run common plumbing.
- It also shows that EVERYTHING can be made sustainable and eco-friendly.



Envirolet exterior design