

Fall 2009

How to Build a Health Clinic: Disease Burden, Health Seeking Behavior and Clinic Structures in the Kibera Slums

Samuel McGowan
SIT Study Abroad

Follow this and additional works at: https://digitalcollections.sit.edu/isp_collection



Part of the [Community Health and Preventive Medicine Commons](#)

Recommended Citation

McGowan, Samuel, "How to Build a Health Clinic: Disease Burden, Health Seeking Behavior and Clinic Structures in the Kibera Slums" (2009). *Independent Study Project (ISP) Collection*. 743.
https://digitalcollections.sit.edu/isp_collection/743

This Unpublished Paper is brought to you for free and open access by the SIT Study Abroad at SIT Digital Collections. It has been accepted for inclusion in Independent Study Project (ISP) Collection by an authorized administrator of SIT Digital Collections. For more information, please contact digitalcollections@sit.edu.

How to Build a Health Clinic: Disease Burden, Health Seeking Behavior and Clinic Structures in the Kibera Slums

By Samuel McGowan

Advisor: Donna Pido, SIT Academic Advisor, 0722720892
Ads: Odoch Pido and Jamal Omar Awadh
SIT Kenya: Development, Health, and Society
Fall 2009

Contact Info:
US Phone: +13108712986
Kenya Phone: 0713841401
Field Contact - George Okewa - Cell: 0724968391

ACKNOWLEDGMENTS

I would like to thank everyone at the Kibera School for Girls and SHOFCO for allowing me such unfiltered access and acceptance into the community of Kibera. Jessica Posner, Kennedy Odede, George Okewa, Madahana Mable, Matt Podolin, Kate O'Reilley-Jones and everyone else who I had the pleasure of working with everyday at school - thank you so much!

Thank you especially to the family of Kennedy Odede - Ajey, Liz, Jackie, and Vickie especially, for treating me like family and taking me into your home.

To my friends - Becca Green, Sindhya Rajeev, Gilia DeGange – thank you for all of your work at KSG, our much needed breaks, and for always having space for me to crash at your apartment.

To my families, both in Nairobi and Los Angeles, thank you for your love and encouragement.

To everyone at SIT - Odoch, Donna, and Jamal, thank you for being more than teachers and for keeping me alive and sane for these past 4 months.

TABLE OF CONTENTS

Abstract.....	4
Introduction.....	5
Setting.....	8
Method.....	10
<u>Discussion/Analysis.....</u>	13
Guidelines/Conclusion.....	26
Suggestions.....	29
Appendix.....	30
References.....	35

Deleted: Discussion

3

Deleted: 1

ABSTRACT:

This study seeks to determine a model for a health clinic to be run by the Kibera School for Girls in the Katwekera village of Nairobi's Kibera slums. The study examines the disease burden of the school's initial target population, the health-seeking behavior of the community, and current clinic structures in Kibera. Using these methodological tactics, the study suggests the Kibera School for Girls should start a small, locally-run clinic that offers basic primary health care to a target population of about 5,000 Kibera residents.

INTRODUCTION

The Kibera Slum of Nairobi is the biggest and oldest informal settlement of Africa, housing 25% of Nairobi's population on less than 5% of Nairobi's land mass (Sclar and Northridge, 1993). Because of high-density and a lack of government services, living conditions in Kibera are deplorable. There is no access to clean running water, no trash or sewage disposal of any kind, and only one pit latrine for every 50 to 500 residents. Housing consists of semi-permanent structures made out of wood, mud, and metal sheeting (Erulkar and Matheka, 2007).

A sample study of Kibera residents conducted by the UN in 2008 revealed a worsening health situation in Kibera. Because Kibera is a settlement unrecognized by the Kenyan government, accurate statistics about its population are difficult to come by, but the UN estimates 1.5 million people live in the informal settlement of Kibera (UNHABITAT, 2005). Other estimates put the population closer to 500,000, accounting for 25% of the population of Nairobi (Odino, Mwonthi, 2008). An average of 5.5 people live in one 9x9 meter home in Kibera, making it one of the most densely populated places on the planet and therefore a hotbed for infectious disease. The UN calculates that 80% of the population of Kibera are either very poor (earning less than 5,000 Ksh a month) or moderately poor (earning between 5,000 and 10,000 Ksh a month)(UNHABITAT, 2005). According to Umande Trust, an engineering firm in Kibera specializing in clean water and sanitation, the average household income in Kibera is only 3,000Ksh a month (Kagwemi, 2009).

Deleted: 1

The residents of Kibera cite malaria and HIV/AIDS as the leading health problems in their community, but typhoid, tuberculosis, respiratory tract infections, and diarrhea are also diseases the community feels they suffer from. A recent study measuring the burden of disease in Nairobi's slums revealed the greatest threats to health were pneumonia, diarrheal diseases, HIV/AIDS and tuberculosis. For children under 5 years of age, mortality rates were four times the mortality burden for the rest of the population. Pneumonia and diarrheal diseases were a leading cause of death. For participants in the study aged 5 years and over, HIV/AIDS and tuberculosis accounted for 50% of the mortality burden. Interestingly, while Malaria was the most common self-reported illness in Nairobi slums and second most common diagnosis in Nairobi, the study showed that due to the high altitude and cold climate of Nairobi, Malaria has a very small prevalence (Kyobutungi, Kasiira, Ziraba, Ezeh and Ye, 2008).

Despite these problems, less than 30% of the residents have ever been to a government run/owned medical facility (UNHABITAT, 2005). Because Kibera is an informal settlement that lacks recognition from the Kenyan government, private clinics are much more common and more widely used.

Private clinics in Kibera are supposed to be regulated by the Ministry of Health, only to be approved if they meet the standards outlined by the National Hospital Insurance Fund (NHIF, 2009). However, in Kibera most of the health dispensaries used are not regulated and thus operate illegally, leading to malpractice and poor quality of health. Clinics outside of Kibera are also available, but difficult to travel to. Many patients end up skipping clinics and going straight to the hospital when they need medical attention. As a result, hospitals become extremely overcrowded. The most widely used hospital is Kenyatta National Hospital, the

Deleted:

Deleted: 1

biggest government-run hospital in East Africa. It has a bed capacity of about 1,800, but regularly houses 3,000 patients a day, meaning that most patients have to share beds (Evans, 2009). These statistics do not include the approximately 7,000 outpatients that come to the hospital each day to receive treatment. Crowding is such a problem that most people waiting to be treated can be found lying outside on the grass, often waiting days before being seen by a doctor. For most residents in Kibera, the 200Ksh consultation fee alone, along with transportation costs, is too much to justify leaving the slum to receive medical attention (Evans, 2009).

Deleted:

Extreme gender discrimination provides strong barriers for women accessing health facilities or health information. A recent study of youth aged 10-19 in the Katwekera village of Kibera showed significant inequities across gender lines. Forty-three percent of girls, compared to 29% of boys, had already reported dropping out of school, and only 49% of those girls who hadn't dropped out reached secondary school (Erulkar and Matheka, 2007). The study showed that 60% of girls at times feel scared of being raped, 10% had been "touched indecently or molested by someone in the community", and only 38% have a safe place to go other than home in the case of an emergency (Erulkar and Matheka, 2007). Also, only 56% of girls had ever used a family planning method, and 43% of girls had been coerced or forced into sex their first time. Although much effort has gone into educating youth about HIV/AIDS, only 32% of girls surveyed knew that condoms fight HIV (Erulkar and Matheka, 2007).

The determination of a model for a working health clinic in Kibera is desperately needed. While the government claims there are more than 4,000 clinics in Kibera and the surrounding area (NHIF, 2009), they are unregulated, dangerous, and unused by the

Deleted: 1

community. If clinics can effectively treat the residents of Kibera, health issues can be identified and treated early in the disease process, which will lower the overall health costs of Kenya, stop the spread of infectious disease, and help to prevent the proliferation of HIV/AIDS.

THE SETTING

Research for this project was conducted through two Community-Based Organizations (CBOs): Shining Hope for the Community (SHOFCO) and the Kibera School for Girls (KSG). SHOFCO is a CBO founded by Kibera resident Kennedy Odede, aimed at social and economic uplift through grassroots projects. By community organizing, SHOFCO facilitates many programs (e.g. youth soccer teams, women microfinance projects, adult literacy classes and IT classes). The Kibera School for Girls was also founded by Kennedy Odede in conjunction with School for International Training graduate Jessica Posner, and is the first primary school in Kibera to offer completely free education to young girls in Kibera. The school opened in August of 2009, and currently has three classes of 15 students - one nursery class, and two integrated Kindergarten and first grade classes. Children attending the school represent the most economically disadvantaged families in Kibera.

Both SHOFCO and the Kibera School for Girls operate through the same facility, located in the heart of the Katwekera Village in the Kibera Slum. Both organizations target

the most economically needy populations in Kibera, and focus specifically on empowering women to lift themselves out of poverty. Future plans for these organizations are to create a fully functioning running health facility that serves both the students and families of the Kibera School for Girls and the surrounding community. The burden of running the clinic will fall on the staff of the Kibera School for Girls primarily, so the guidelines focused on them.

This project examined why current health facilities in the Katwekera village of Kibera are not adequately serving the population, and seeks out an appropriate and effective model for health dispensaries that will best combat Katwekera's worst health issues. Data was collected for this project through the Kibera School for Girls and SHOFCO for the purpose of creating guidelines specific to the development of a health clinic on the grounds of the school. Focus groups, informal and formal interviews were used to accumulate data for the project.

Analysis in this paper includes both broad conclusions about the state of health delivery in Kibera, as well as in-depth and detailed guidelines and suggestions for how the Kibera School for Girls should proceed in creating a health facility that will best serve their intended target population. The report focuses on realistic, practical information designed specifically with the school's needs and resources in mind.

METHOD

Data was collected through four methods.

Medical information. My first strategy for collecting data was obtaining accurate and up-to-date medical information from the children of the Kibera School for Girls. For this part of the project, I worked with certified registered nurse (RN) and health clinic specialist Vanessa Wyne-Jones. I facilitated the completion of basic physicals for each child at school. The RN filled out a standardized medical chart for each child, which included vitals, a medical history, and social and dietary information about families. (See Appendix B for a sample of medical form used). Present for each physical was myself, Vanessa, our volunteer translator, Jackie Odede, each patient and one parent. Materials used for the exams were a scale, measuring tape, gloves, alcohol swabs, a stethoscope, a thermometer, hand sanitizer, and a stopwatch, all of which were donated by American Friends of Kenya, a financial partner to the Kibera School for Girls. Carolina for Kibera (a fellow CBO in Kibera similar to SHOFCO), in conjunction with Voluntary Counseling and Testing (A government sponsored program), also donated HIV/AIDS test strips and buffer solution, but it was determined that without adequate counseling services we would not test children or parents for HIV/AIDS. Retroactive approval was obtained from each family for the use of their medical data in this study (see Appendix C).

Community Focus Groups. I interviewed the families of the Kibera School students, as well as the surrounding community to gain knowledge as to what types of services are needed in the community. I created a partnership with the Gender-Violence Recovery Center (GVRC) in Nairobi Women's Hospital. The GVRC held regular health educational lectures at our school weekly during the ISP period. Once a week, the GVRC sent volunteers to educate our children's parents and anyone in the surrounding community about a variety of health issues. In total, we had 4 health talks at the Kibera School for girls. Topics included child nutrition and hygiene, rape, sexual assault and domestic violence, and HIV/AIDS. These meetings were not just a chance for health workers to educate, but also a place for open dialogue between the community and health professionals. These meetings served as focus groups, where the need of the community was more accurately determined. Each meeting concluded with a short discussion about the talk and time for community members to give opinions on health clinics and the state of health affairs. These discussions sought to determine why clinics in Kibera are not being used and which health problems are not being adequately addressed in the community. I used a translator for these sessions, since they were conducted almost entirely in Kiswahili.

Clinic Interviews. My third strategy for collecting data was a loose survey of already existing health dispensaries and clinics in Kibera. I created a set of standardized questions to ask each clinic, but most of the data collected was qualitative (see Appendix C for a list of questions). I conducted long, semi-structured interviews with health clinics that parents of The Kibera School for Girls said they used most often. The majority of interviews were conducted at

Deleted: 1

Carolina for Kibera's Tabitha Clinic, managed by the Center for Disease Control (CDC), which is the largest health clinic in Kibera, and the four clinics operated by Doctors without Borders (MSF). I also found a cross section of other health dispensaries in Katwekera to obtain a general sense of how the average clinic functions.

Deleted:

Volunteer work. I volunteered for both SCHOFCO and the Kibera School for Girls, where I worked within the organizations alongside residents of Katwekera. My main contacts were George Okewa, the administrator of the school and current head of SHOFCO, and Jessica Posner, co-founder of the Kibera School for Girls and current director. I worked side-by-side with them on a daily basis, helping to keep the school running. Specifically, I facilitated communication between workers in the field and the school's directors in the United States, I updated and maintained computers and technical literacy, and I aided in teaching classes. In addition to teaching 45 young girls in nursery and integrated kindergarten/first grade classes, The Kibera School for Girls maintains a number of development projects that I helped manage, including a sustainable vegetable garden. I also worked to help the school construct a bio-digester and water tank, both of which were contracted by the engineering firm Umande Trust. I also worked with Rebecca Green, a fellow SIT student, to help her develop an after-school program for the girls of the school.

By working on these varying projects during the ISP period, I gained firsthand experience in how to successfully create a functioning development project. Extra focus was given to the construction of the bio-digester, as it was the one project I was involved with from the start of the construction. This project gave me invaluable information I used to plan how The Kibera School for Girls can improve upon their next project, the health clinic.

Deleted: 1

Information gathered from this approach lead to administrative guidelines for the project, including how to budget the project, how the construction can be handled most efficiently, and how to navigate the various roadblocks any project in Kibera faces.

DISCUSSION AND ANALYSIS

Part 1: Medical Information

Medical data collected from the 45 children attending the Kibera School for Girls revealed upper respiratory tract infections and diarrhea as leading health problems for the children. Participants in the study, aged 3 -7, revealed health problems ranging from asthma, stomach pain, vomiting, diarrhea, and upper respiratory tract infections (URTI). Fifty percent of the participants complained of symptoms related to URTI including dry and wet coughs and pneumonia. Eighteen percent of children had suffered either chronic stomach pain, vomiting or diarrhea, and 22% of parents claimed their children suffered from chronic bouts of Malaria. While these health issues were most common, many other varying problems were reported within this small population. Common issues were asthma, high temperature, tonsillitis and problems with blindness and vision. In addition, one child presented with Ringworms, one child had recently been the victim of sexual assault, and one child was suspected to have epilepsy.

In addition to this medical data, social and dietary data was collected to give a broader picture of the children's health status. The average number of children per family was 4.6,

Deleted:

Deleted: 1

with the majority of families having only one parent present. Eighty percent of the families were either completely unemployed or were day-to-day laborers, meaning that there was no consistent income for the family. The average diet in the home consisted of *Ugali* (Kenyan food consisting of flour and water) and *sukumawiki* (commonly known in the United States as Kale). Many households reported consuming *Uji* (porridge) and having limited access to meat (primarily beef and chicken). Almost no families reported feeding their children fruit on a regular basis.

Formatted: Font: Italic

Formatted: Font: Italic

Formatted: Font: Italic

Much of this data reveals that many necessary medical interventions can be handled in a public health setting. Children's chronic suffering from vomiting, diarrhea, and stomach pains is largely due to environmental factors (Wyne-Jones, 2009). Scarcity of water in Kibera means that most children do not wash their hands after using a bathroom or before they eat, increasing their chances of getting sick. The unsanitary conditions in Kibera, in which children are exposed to daily and the lack of supervision, leaves them vulnerable to sickness.

Deleted: ally

Treatment can start by encouraging a healthier lifestyle and more balanced diet. A recent study by the London School of Hygiene and Tropical Medicine showed that use of community health workers, some receiving as little as 6 weeks of training, effectively administered behavior-modification treatment for similar ailments in sub-Saharan urban settings (Haines, Sanders, Lehmann, Rowe, Lawn, Jan, Walker, Bhutta, 2007). Continuing health talks with Nairobi Women's hospital focusing especially on hygiene and nutrition, is a good first step the clinic can take to combat these problems.

For complex problems that behavior-modification cannot solve, a set of drugs and supplies was compiled by RN Jones with consultation from surrounding clinics that

Deleted: 1

correspond with the disease burden researched (see Appendix E). These supplies will serve as a starting point for the clinic's drug stock, which will grow as the clinic sees its first patients.

While much of this data corresponds to similar statistics gathered by clinics in Kibera, a number of methodological shortfalls hinder the reliability of data. There is significant evidence that parents, when discussing the histories of their children, lied or unknowingly presented false information. For example, given Malaria's non-presence in Nairobi, it seems unlikely that 30% of children are suffering from this disease chronically. Since symptoms of Malaria are similar to the flu, it is likely that many of these parents self-diagnosed their children incorrectly, or took their children to unqualified health dispensaries and were incorrectly diagnosed. Also, one parent claimed to be running out of Anti-Retroviral medication (ARVs) for her child, who is HIV+, which was later to be confirmed a lie, given that ARVs are given out free by the Kenyan government and never run out (O'Brien, 2009). This shows the clinic should be wary of patients seeking to take advantage of access to free medication.

Although discrepancies in medical histories will always be present, specific changes should be made to better the future clinic. First, the language barrier between patient and nurse made it difficult to identify nuances in the medical stories of patients, and also inhibited the detail to which histories were taken. Almost none of those interviewed could speak English, and while the translator was effective at getting the patient's point across, it presented a significant hurdle to attaining information. Finding health professionals that can speak English, Kiswahili, and perhaps even Kijaluo will be an important goal of the future clinic. Second, having qualified clinicians that also have specific knowledge of Kibera is extremely important. Having both the statistics on prevalence rates of certain diseases, as

Deleted: 1

well as knowledge of other facilities in Kibera will make it possible for more accurate diagnosis as well as the ability to facilitate care beyond the capabilities of the clinic. A nurse who is a Kibera resident will also serve to foster a closer relationship between the patient and the clinic. This will hopefully reduce the likelihood of patients lying to receive drugs, and ensure patients receive quality care they can trust.

Part 2: Focus Group Discussions

Community members showed a broad knowledge about the different health clinics in the area. Every participant knew of at least one major clinic in their area, and most had been to at least one clinic in their lives, whether it was to treat themselves or a family member. However, few people had been multiple times to the same clinic, and many people had been to multiple clinics, depending on the cost at each clinic for specific procedures. Although residents said there were many clinics in Katwekera, 5 specific clinics surfaced as both the most widely known and used: The CDC's Tabitha Clinic, MSF Belgium, Yes to Kids (Y2K), Lea Toto, and Kawanga (also an MSF clinic).

When asked why people didn't go to the completely free clinics all of the time, residents cited distance, high waiting times, and availability of more convenient options. Clinics are often overcrowded, so when patients suffer from what they perceive as less severe illnesses, they would rather go to local chemists and small dispensaries that are close by. These small, unregulated shops, called *duka la dawas*, are convenient and can offer a free assessment and drugs for a cheap price. Many people were also confused about which clinics

Deleted: 1

were free and which cost money, and many cited lack of time to go to a clinic, especially for a child.

These data show that while there are many options to receive care, Kibera residents often choose a clinic or dispensary that provides low quality of care for a higher price. Even with the knowledge that they can obtain free drugs and consultations elsewhere, patients would rather go to a smaller clinic close by than wait in long lines. As was shown with data obtained from the Kibera School for Girls, many patients self-diagnose and therefore don't feel the need to be seen by a qualified doctor or nurse. If they know the drugs they need for their self-diagnosed illness, they would rather go to a chemist that can give them the drugs quickly.

Health-seeking behavior that leads to overspending is problematic for several reasons. First, health care expenditures are contributing to the perpetuation of poverty in Kibera. Residents have two options when seeking medical attention: go to a qualified clinic but miss an entire day's work waiting in line, or go to a smaller unqualified dispensary and pay market prices for drugs that are often unnecessary. Either way the patient is losing money, and the entire economy suffers as a result. Second, over allocation of drugs, especially antibiotics, can have long-term negative effects for the greater population. Infectious diseases are still the leading causes of death in Kenya, but overusing antibiotics can limit their effectiveness. Tuberculosis, despite well established and effective treatment methods being used in Kenya, continues to be a top medical emergency because strains have become resistant to antibiotics (MDRTB and XDRTB). Many health professionals in Kibera cite overuse of antibiotics as a leading cause of this phenomenon (O'Brien, 2009).

Deleted: overallocation

Deleted: 1

The convenience factor that many parents cited in focus groups also speaks to stigmas and cultural differences between small dispensaries and big clinics. Big clinics are almost exclusively international organizations run by *wazungu* (white people). Those clinics that are actually in the Kibera slums are daunting, multi-story structures that don't fit into their environment. When patients go to these clinics, they rarely see the same doctor twice, and even if they do, patient volume is so high that there is no personal relationship between patient and physician. On the contrary, local chemists shops are located just on the corner. These dispensaries are run by families living in the neighborhood trying to make an honest living. When people go to these shops, they see the same familiar face every time, and they are treated immediately.

Stigmas also play an important part in health-seeking behavior. In Kenya, international health organizations are known for distributing ARVs and other AIDS-related services. Because of government funding, all major clinics provide HIV testing, counseling, disease management and distribution of ARVs. While such robust action has halved the infection rate of HIV over the last ten years (Kenya Country Report, 2008), it is often assumed that if one's neighbor is going to a big clinic, he or she probably has AIDS. Not wanting to be tagged as "infected", many people avoid these larger clinics to the detriment of their personal health.

Part 3: Interviews with Clinics

Interviews with administrators at both large international clinics and small, local dispensaries confirmed much of what was obtained in Parts 1 and 2 of the study. While the

large clinics have the best resources, highest quality of care, and largest stocks of free drugs, many challenges keep them from adequately serving targeted populations and therefore patients end up receiving care at smaller, less qualified dispensaries.

MSF's four clinics in Kibera, easily the largest presence in the slums, suffer from too high a volume of patients and high costs. MSF performs an average of 10,000 consultations a month, meaning that the average waiting time for a patient can be as long as 5 hours. The cost of stocking any clinic in Kibera with adequate drugs is expensive, but since MSF is the only clinic that offers completely free care to anyone that walks into the clinic, there is no source of income to offset the costs. Since MSF is perceived by the community as a rich international organization, many of their patients are what the clinic calls "drug shoppers". These are people who pretend to be sick to access free drugs, and then sell to local chemists for a profit. Also, most of MSF's patients, since they are only coming to the clinic in dire circumstances, expect to be given some type of drugs even if it is not warranted. Just like in local dispensaries, this leads to an over allocation of drugs, primarily antibiotics. The only difference between local dispensaries and MSF is that MSF loses money the more it allocates unnecessarily.

MSF also struggles with managing long term care. They are overwhelmed with new patients seeking care for pressing medical issues, and following up on these patients is extremely difficult. MSF struggles to keep its patients adhering to drug regimens and returning for check-up appointments. Often when drugs initially improve a patient's health, like with ARVs, people feel they don't need the drugs or appointments and stop taking them, even if they are free. This is problematic because the efficacy of such drugs declines and even disappears if the drugs are not taken as directed, which is usually to continue taking the drugs

Deleted: 1

even after the symptoms have improved. To combat this problem, MSF employs 7 social workers whose sole job is to make sure people keep up with appointments. MSF also cites gender suppression as a factor keeping women from going to clinics. Because women are supposed to be domestically tied, men often distrust women who claim to need to visit a clinic, and therefore don't give them permission. Another common problem is people wanting malaria drugs when they don't need them. According to a recent survey, 27% of MSF's patients claimed to have it, when in reality only 5% tested positive (O'Brien, 2009).

MSF is an organization designed to administer care in extreme, short term settings like war zones. MSF would prefer to not be indefinitely involved in providing care to Kibera, and wishes to transfer its infrastructures to the Kenyan government. Given the high expense of these clinics, if a more sustainable approach is not found, or other clinics are not created to ease the burden, these currently successful health clinics will cease to be sustainable once put into less wealthy hands.

The other major health care presence in Kibera is the Tabitha Clinic, a massive 5-story structure in Katwekera that is co-run by the CBO Carolina for Kibera and the Center for Disease Control (CDC). The Tabitha clinic rivals MSF in its scope. In one clinic it sees an average of 35,000 to 45,000 patients a year, which averages to about 250 a day (Hilary, 2009). The majority of these patients (30,000) are enrolled in a "Surveillance Study" piloted by the CDC and the Kenya Medical Research Institute (KEMRI), which combines free outpatient care with home-based biweekly interviews. The study collects data on pneumonia, jaundice, diarrhea, and febrile illnesses, which the clinic's drug stock and subsequent delivery focuses on. For those not enrolled in the program, care comes at a subsidized cost, although fees can be waived based on a needs assessment.

The Tabitha clinic suffers from many of the same problems as MSF, most notably volume and costs. Drugs alone cost between 300,000 and 400,000 ksh a month, a bill covered by the CDC. But like MSF, the CDC only has temporary involvement in the clinic while it performs research, meaning that at some point CFK will have to cover these costs on its own. The 35,000 patients the clinic sees each year is a statistic reached only after many measures to reduce the volume in the clinic. Originally those not contributing to the study had access to care at such a low cost that it flooded waiting rooms, forcing each nurse to see an average of 50 patients a day. As a result, the clinic had to raise its prices to keep people from coming. Just like MSF, the CDC works to reduce the number of patients it sees to maintain high quality of care. For those now not part of the Surveillance Study, however, the cost of the clinic is too high. The registration fee is 150ksh, and the average visit can cost as much as 350ksh.

The health-seeking behavior of Tabitha clinic patients is also to seek treatment in *duka la dawas*, or local chemist shops. Interestingly, because the clinic practices evidenced-based treatments, meaning they only provide treatments that have been proven to be efficacious and that are warranted with testing, many patients come to the Tabitha clinic to confirm what disease they have, and then go home to their local chemist to buy drugs instead of receiving them free from the clinic. The clinic cites many of the same reasons for losing clients to more expensive, less qualified clinics: accessibility, convenience, and the personal relationship people have with their local chemists. But the clinic also is constantly fighting negative stereotypes and associations the people of Kibera have about them. The logos for CFK and the CDC have been likened to devil worship, and many people literally fear that their blood will be offered as a sacrifice to Satan if they come to the clinic. Enmeshed with these

allegations are Kibera residents' general distrust of free services and big, international organizations with lots of money. Rumors and negative stereotyping of major clinics are often started and perpetuated by *duka la dawas*, who view these clinics as market competitors.

According to MSF's recent survey, there are 152 clinics in Kibera, although the government claims there are over 4,000 in Kibera. This discrepancy is because MSF does not include *duka la dawas*, since they are not qualified caregivers. There are about 10 large Non-Governmental Organization (NGO) clinics, but the remaining clinics are private, for-profit entities. Approximately 100 clinics in Kibera are smaller, often faith-based entities that struggle to make ends meet.

One such example is St. Mary's Maternity and Child's Health Clinic, founded in 1996 and located just on the eastern edge of Katwekera. The clinic was started by a nurse, Constance Elizabeth Akoth, who was eventually so fed up with working for an ineffective, low-paying government that she decided to quit and start her own clinic. After an initial investment of 72,000Ksh worth of drugs from a pharmacist friend, along with 67,000Ksh of her own money saved from when she worked in a refugee camp in North-Eastern Kenya, Akoth was able to rent out space in Katwekera and open its doors to the public with just her and one other nurse.

The initial goal of the clinic was just to treat the most minor of ailments. They simply would make a good, professional diagnosis, treat what they could with the equipment they had and refer what they couldn't handle. But with Akoth's experience in maternity health, they slowly grew into a maternity ward, offering family planning, antenatal care, deliveries, and long-term care management for children. Mary applied to the Kenya Expanded Program for Immunizations, was accepted, and now offers free immunizations to all children she

treats, which she says has been very successful. Currently, Mary's clinic, which is staffed by recent medical school graduates who volunteer their time for a small transportation stipend, delivers over 300 babies a year.

While Mary has created a reliable clinic in Kibera that is used in great numbers by the community, the clinic is struggling to stay afloat. Despite maintaining a highly trained staff for minimal cost, Mary still spends about 32,000Ksh on drugs and supplies a month, and is currently 60,000Ksh in debt because of pending drug bills. Since St. Mary's Clinic receives no funding, Mary has to charge her clients. In addition to a 50ksh registration fee, the average visit at her clinic costs about 200Ksh, but costs largely depend on the costs of drugs given. Unfortunately, these fees do not cover the running costs of the clinic. Mary strives to provide care needed in the community, and as a result provides 24hr emergency medical service to the community. In her experience, most people seek medical services in the evening, after work, when many clinics have closed, and almost no clinics provide emergency services that are reliable. The unfortunate result, though, is that many emergency patients, like those suffering from physical trauma, must be treated immediately at great cost, but then later are not able to pay. And, in addition, staffing a clinic for 24 hours a day, 7 days a week is extremely expensive.

Mary's clinic highlights how difficult it is to run a legitimate clinic without supplemental funds. (As we discuss her finances, Mary takes a deep sigh and removes her glasses, "Everyday I think about giving in and closing down this place. Maybe the Kibera School for Girls can fund my clinic, so we can continue, but even then I'm not sure")(Akoth, 2009).

Local chemists shops, while doing much to degrade health standards in Kibera, are a sign that small, local health clinics are sustainable options that will be used by the community. In order to compete, these clinics will need to offer drugs at comparable prices, be easy to access, but offer higher standards of care. While the big, international clinics do a good job of providing the best care possible to the largest group, the capacity to serve everyone is just not possible. Also, many patients fall through the cracks after being treated once, since these clinics cannot manage so many patients over a long period. Smaller clinics, locally run, that are able to provide basic primary health care will greatly reduce their burden and provide a type of care unseen in Kibera currently.

Part 4: Data from The Kibera School for Girls

The Kibera School for Girls has definite potential for creating a sustainable health clinic for the community. The school targets the poorest families in Kibera, who are most in need of quality health care. In lieu of paying tuition, The Kibera School for Girls asks that parents volunteer for 5 weeks to the school to help keep it running. Work includes maintaining the vegetable garden, cleaning the school and cooking lunch for the children. As the school grows, which it plans to do each year, more parent volunteers will be available, and some will be able to assist in the clinic for free. The school's close association with the CBO SHOFKO also gives it the opportunity to tap into a large resource of volunteers that could provide valuable assistance to a clinic that will start with very little money. These volunteers are Kibera residents that know the members of their community, so they will have the unique ability to both serve and teach in a setting they're best prepared for.

Given the current space already at the school, construction will not be necessary for at least 2 years. The space designed to hold the clinic is actually too large for the clinic's initial plans, so an empty office the school is using as storage will serve fine.

For the clinic to be a success at the Kibera School, it must be well organized in its accounting. Since funding will be tight for the first year at least, a minimum of one volunteer needs to be in charge of calculating daily expenses. When building the bio-digestor, it became clear that daily monitoring of funds is essential to ensure money is spent wisely.

GUIDELINES and CONCLUSION

Given the health-seeking behavior of Kibera residents, the Kibera School for Girls needs to create a clinic that competes with the chemist shops and quack clinics that are all-too-often the first stop for residents seeking medical care. To do this, the clinic must be small, locally run, and easily accessible. It needs to offer both primary care and primary health care, and needs to offer prices that compete with the smallest dispensaries.

Deleted: s

The clinic can only be sustainable if it has a clearly defined target population and goals. I suggest the clinic start with three phases:

Phase 1. The clinic will only serve the 45 students that it currently has at school. In this phase, the clinic will hire one nurse who will work part-time to manage this small clientele. It will be more efficient if the school hires a highly qualified person to fulfill this role. The nurse should be able to not only treat children in a school setting, but also contribute in other, non-medical ways to the school. For example, she could be both a teacher and nurse, or be qualified to assist the school administratively. It is important that this person be a highly qualified medical professional, as she will determine the quality of care of the clinic. While she will require a higher salary, the rest of the staff in the clinic will be volunteers that are trained and monitored by this nurse. With the current medical records already taken, the clinic has a baseline of drugs that should be stocked for this phase (see Appendix E).

Phase 2. The second phase of the clinic will expand to cover the families of these children. This will quadruple the amount of patients the clinic sees, so a reassessment of drug stock

Deleted: 1

should be done. An important element, prior to the implementation of this phase is to develop a concrete system for check-ups, appointments, and a system to manage patients on how to adhere to drug regimens. Since in this phase the majority of patients will not be monitored each day while at school, the clinic will need volunteers available to check on families that miss appointments by going to their homes and interviewing family members.

Phase 3. Clinic coverage will expand to the surrounding community. An extremely important first step will be to define set boundaries in Katwekera of the population it will serve. With one nurse, the clinic should see a maximum of 25 patients a day, meaning it will have an initial yearly volume of around 7 - 8,000 patients. However, since the clinic will be managing patients' long-term care, many of these visits will be from the same patients. Therefore, the initial target group should be the 5,000 residents that live closest to the clinic. Residents who want to participate should pay a 20ksh registration fee, though this will be waived for those who prove they cannot afford it. On top of this, they will only pay for drugs and labs taken while at the clinic, and these prices will be highly subsidized.

The drug stock of the clinic will be specific to the disease burden of the population, so determining what services the clinic will perform will take time. Initially, the clinic should focus on delivering effective primary health care. This means keeping up-to-date medical records, seeing patients regularly and managing chronic problems effectively. This also includes creating concise, portable records that patients can take with them if they visit another clinic. This will help to ensure coordination between clinics. The clinic should also apply to the government program for free immunizations to be administered to all children enrolled in the clinic. As of now, the clinic should not apply for ARVs to treat HIV+ patients.

Deleted:

Deleted: 1

This is one service that is widely available in other clinics, which can also provide a more holistic, counseling-based approach to managing the disease. While HIV+ patients are of course welcome in the clinic, and our staff will help manage their cases through other clinics, by not offering ARVs we can stave off stigmatization for clients that come to us.

The most important aspects of this clinic will be its ability to offer competitive prices for drugs quickly, while maintaining high quality of care. By limiting the population it serves, the clinic can ensure small waiting times. This will also mean that the nurse that runs the clinic will have a personal relationship with all of his or her clients. He or she will ideally be a resident of Kibera that people trust, and therefore more likely to come to the clinic when they first encounter problems and more likely to listen to his or her advice. To compete with *duka* drug prices, the Kibera School for Girls should apply to the Mission for Essential Drugs and Supplies. This organization provides drugs and supplies to non-profit health clinics in Kenya at half the price of market drugs. Even if the clinic sells drugs with a 5% profit, their prices should be better than private dispensaries, will be reliable, and will come with it competent professionals who can manage their safe usage.

SUGGESTIONS

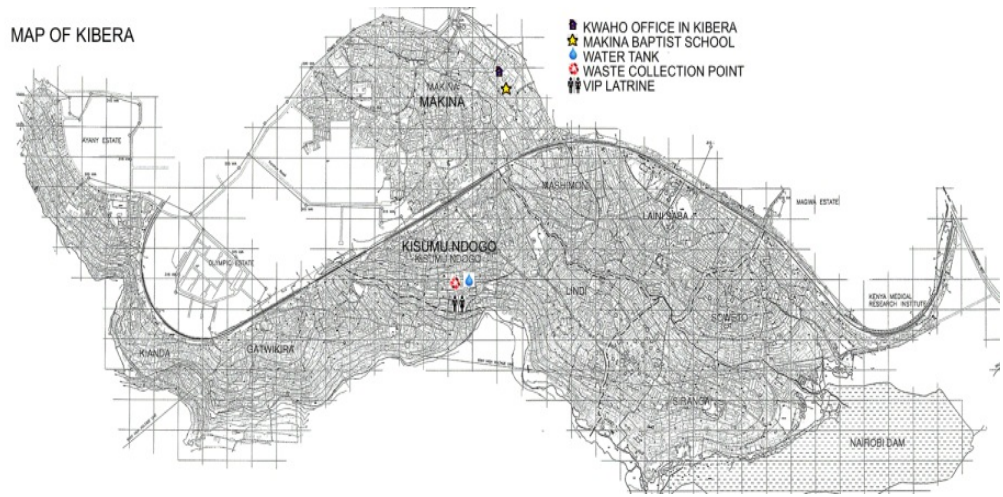
This study has a number of limitations that should be addressed to better understand its results. As enumerated in section 1 of the discussion/analysis, there is sufficient evidence to suggest that individual interviews for children's medical histories are unreliable. The language barrier, along with a desire from residents to extract services from western doctors makes the data somewhat unreliable. Given more time, I would have found a Kenyan doctor with experience in Kibera to do these medical records. When the Kibera School for Girls hires a nurse to begin running the clinic, it is highly suggested that he or she redo these records on his or her own terms.

The language barrier also made health talks difficult to extract data from. While I worked with a number of translators, my ability to speak Kiswahili severely limited my ability to understand respondents, and I collected no quantitative data in this section. Given more time, I would have created a survey that could have been completed by all participants in the focus group.

With more time I also would have conducted more interviews with health clinics. With the given time constraints I could only cover 7 clinics in Kibera, while there are more than 150. With more time I would have created a survey to be filled out by each clinic to also get more quantitative data.

It should also be noted that data and suggestions in this report are only suggestions for the Kibera School health clinic. Development of the physical clinic needs to be overseen by a qualified clinician with experience in Kibera, and these suggestions should not be the sole input the Kibera School receives in its building process.

APPENDIX A



Map of Kibera
Source: <http://www.kwaho.org/images/map-kibera-watercan.jpg>

APPENDIX B – Medical Form

American Friends of Kenya - Medical Form

Record Number: 01940

Name: _____

Date: _____

Age: _____

Sex: Male _____ Female _____

Seen at: _____

Marital Status: Single _____ Married _____ Widowed _____ Divorced _____

Why have you come to the health camp today?

How did you hear about the health camp?

- | | | | |
|--|--------------------------|--------------------------|---|
| | No | Yes | |
| Are you currently having a daily fever? | <input type="checkbox"/> | <input type="checkbox"/> | If yes, for how many days? _____ |
| Are you currently having a daily cough? | <input type="checkbox"/> | <input type="checkbox"/> | If yes, for how many days? _____ |
| Are you currently having diarrhea (watery stools)? | <input type="checkbox"/> | <input type="checkbox"/> | If yes, for how many days? _____ |
| Have you had malaria? | <input type="checkbox"/> | <input type="checkbox"/> | If yes, how many times? _____ |
| Do you sleep with a mosquito net? | <input type="checkbox"/> | <input type="checkbox"/> | If no, would you sleep under one? Yes No |
| Have you been tested for HIV/AIDS? | <input type="checkbox"/> | <input type="checkbox"/> | If no, do you see a need to be tested? Yes No |
| Have you been circumcised? | <input type="checkbox"/> | <input type="checkbox"/> | |
| How many times have you been pregnant? | _____ | | |
| How many children are alive today? | _____ | | |

Vitals: Height _____ Blood Pressure _____ / _____ Pulse _____ Eye Exam _____ / _____
 Weight _____ Resp. Rate _____ Glucose _____

To be seen by: Medicine _____ Ob/Gyn _____ Nursing only, non MD visit _____

Medical Exam:

- NL _____
- General
- HEENT
- Neck
- Heart
- Lungs
- Abdomen
- Extremities
- Neurological
- Genitalia

Exam Notes

Ob/Gyn Exam:

- NL _____
- Breast
- Ext. Genitalia
- Urethra
- Vagina
- Cervix
- Uterus
- Adnexae

Lab Tests Requested:

- | | | | | |
|----------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Check all that apply | <input type="checkbox"/> PAP Smear | Results: | Normal: <input type="checkbox"/> | Abnormal: <input type="checkbox"/> |
| | <input type="checkbox"/> CBC | | Normal: <input type="checkbox"/> | Abnormal: <input type="checkbox"/> |
| | <input type="checkbox"/> Malaria | Negative: <input type="checkbox"/> | Positive: <input type="checkbox"/> | |
| | <input type="checkbox"/> HCG | Negative: <input type="checkbox"/> | Positive: <input type="checkbox"/> | |
| | <input type="checkbox"/> Syphilis | Negative: <input type="checkbox"/> | Positive: <input type="checkbox"/> | |

PAP Detail

CBC Detail

Assessment /Plan/Medication:

External Referrals: Chest X-ray _____ Hospital _____ Lab _____ Other _____

Physician/Nurse Signature: _____

Deleted: ¶

Deleted: ¶

Deleted: ¶

Deleted: ¶

Deleted: 1

Deleted: ¶

KIBERA SCHOOL FOR GIRLS

Kwa mzazi,

Unaombwa rufusa ili tutumie ile historia ya afya ya mtoto uliyokuma umetupa hapo awali.

Jina lako na mambo ya kifamilia haya tutajua

Hi itatuwezesha tu kutambua kliniki abayo inaambatana na mahitaji yako. Ikiwa hii ni sawa hauhitajika kujibu, utanyamaza tu. Na ikiwa hauhitaji kuhusishwa fataadhali njoo shuleni Jumaa mwezi huu wa december, na upinge jamba hili

Mimi Daktari,



Deleted: ¶

Deleted: 1

APPENDIX E – Drug List and Tentative Budget

Initial Drug Stock Cost Estimate Given Market Prices (Monthly)

Drug	Market Price per Unit	Suggested Monthly Stock	Total Price (Ksh)
Erythromycin	30 Ksh / 60ml	100	3000
Amoxycillin	25 Ksh/ 60ml	100	2500
Emoquin	39 Ksh/ 60ml	100	3900
Nycodeal	40 Ksh / 60ml	30	1200
Salbutamol	30 Ksh / 60ml	50	1500
Chloramphenicol	30 Ksh / 100ml	30	900
Seprtine	30 Ksh / 60ml	100	3000
Ambiclo	60 Ksh / 60ml	100	6000
Flagel (Metronidacine)	30 Ksh / 60ml	100	3000
Peritone Syrup	250 Ksh / 5L	4	1000
Pericetamol	250 Ksh / 5L	4	1000
Trystamine	250 Ksh/ 5L	4	1000
Levamisole	400 Ksh/ 5L	2	800
Supplies Estimate	-----	----	20000

Estimated Monthly Salary for one nurse: 12,000 Ksh

Total Estimated Start-up and first month costs: 60, 800 Ksh

REFERENCES:

Achieng, Hilary. Interview. Tabitha Clinic. 23 NOV. 2009.

Andy Haines, David Sanders, Uta Lehmann, Alexander K Rowe, Joy E Lawn, Steve Jan, Damian G Walker, Zulfi qar Bhutta. "Achieving child survival goals: potential contribution of community health workers". The Lancet Vol 369 June 23, 2007: 2121.

Annabel Erulkar and James Matheka. "Adolescence in the Kibera Slums of Nairobi, Kenya." Population Council, 2007.

Akoth, Constance. Interview. St. Mary's Medical Clinic. 25 NOV. 2009.

Courtney Crosson. "Youth Information Networks in Kibera, Nairobi, Kenya." 2004-2005 Hart Fellow, Duke University.

Catherine Kyobutungi, Abdhalah Kasiira Ziraba, Alex Ezeh and Yazoume Ye. "The burden of disease profile of residents of Nairobi's slums: Results from a Demographic Surveillance System." Population Health Metrics, 2008.

Evans, Charles. Interview. Kenyatta National Hospital. 3 SEPT. 2009.

GoK/UNHABITAT. "Kibera Social and Economic Mapping Household Survey data." Research International. Nairobi, 2005.

Jane Chuma, Janet Musimbi, Vincent Okungu, Catherine Goodman, Catherine Molyneux. "Reducing user fees for primary health care in Kenya: policy on paper or policy in practice?" International Journal for Equity in Health 2009: 8:15.

Kagwemi, Peter. Interview. Umande Trust. 15 NOV. 2009.

Kamuwanza, John. Interview. St Mary's Medical Clinic. 1 DEC. 2009.

"Kenya Country Report." Economist Intelligence Unit. July 2009.

Kibera Focus Group on Health. PERSONAL Interview. 16 OCT, 11 NOV, 12 NOV, 18 NOV, 2009.

Kizito Mazvimavi and David Rohrbach. "Quantifying Vulnerability - Accurately Reaching Those Who are Most in Need." Briefing Note for International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) Bulawayo, 2006.

Margaret A. Odindo and Mutuku A. Mwanthi. "Role of Governmental and Non-Governmental Organizations in Mitigation of Stigma and Discrimination Among HIV/AIDS

Deleted: 1

persons in Kibera, Kenya.” East African Journal of Public Health, Vol. 5, no. 1, April, 2008, pp.1-5.

O'Brien, Daniel. Interview. MSF Clinic, 26 NOV. 2009.

Paul Syagga, Winnie Mitullah and Sarah Karirah-Gitau. “United Nations Human Settlements Program (UNHABITAT): A Rapid economic Appraisal of Rents in Slums and Informal Settlements. as a Nairobi Situational Supplementary Study for the Government of Kenya and UNHABITAT.” Collaborative Nairobi Slum Upgrading Initiative, 2002.

Sclar E.D and Northridge, M. E. “Slums, Slum dwellers and Health.” *American Journal of Public Health* 93 (9):1381.

Unger A, A. Johansson, R. Zachariah, D. Some, I. Van-Engel- gem, A. M. and United Nations Children’s Fund (UNICEF). “Integrated management of childhood illnesses: An initiative for effective case management,” 2007.