Health Clinics - Saving Two Birds with One Stone

Ivy Castro  
*Worcester Polytechnic Institute*

Olivia Doane  
*Worcester Polytechnic Institute*

Claudia Lee  
*Worcester Polytechnic Institute*

Shelbye Schlange  
*Worcester Polytechnic Institute*

Justin Siemian  
*Worcester Polytechnic Institute*

See next page for additional authors

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Health Clinics: Saving Two Birds with One Stone

Ivy Castro (Biology/Biotechnology), Olivia Doane (BME), Claudia Lee (BME), Shelbye Schlange (Biotechnology), Justin Siemian (Biochemistry), Dan Topping (BME)
Advisors: Professor Jill Rulfs (Biology) and Professor Helen Vassallo (Business/Management)

Problem Statement
The amount of cases of malnutrition and HIV/AIDS in Nigeria must be reduced.

Project Goals/Objectives
- Reduce the number of children affected by malnutrition.
- Reduce the number of those infected with HIV/AIDS.
- Attain sustainability in the surrounding area.

Location
Abia State, Nigeria

Reason for Location:
Nigeria has moderate cases of both malnutrition and HIV/AIDS. Specifically, the villages in the South (Abia State) have serious malnutrition and AIDS issues.

Approach
Develop a health clinic that reduces the rates of HIV/AIDS and malnutrition through education, testing, and treatments.

Malnutrition
- Implement aspects of the Community based Therapeutic Care program into the health clinic
- Focus on treating children under 3
- Check for cases of severe acute malnutrition in local villages weekly
- Supply local villages with Plumpy Nut on a weekly basis
- Treat cases of moderate acute malnutrition as outpatients.
- Treat cases of severe acute malnutrition within the clinic with Plumpy Nut
- Keep outpatient and inpatient records

HIV/AIDS
- Provide HIV/AIDS education
- Provide HIV testing
- Treat patients with antiretrovirals
- Provide latex condoms
- Treat patients malnourished from HIV/AIDS with Plumpy Nut
- Encourage HIV testing in infants
- Keep patient records

Funding and Costs
Malnutrition: Valid International, and Concern Worldwide will provide supply of their product and help cover medical costs.
Previous AIDS Funding:
- World Bank – 2002 $90.3 million given to Nigerian government for HIV/AIDS. 2007 additional $50 million was loaned.
- PEPFAR – 2008 $448 million for HIV/AIDS treatment in Nigeria
- Global Fund - $98 million for HIV/AIDS for expansion of treatment

Personnel
- The health clinic will be a nonprofit organization employed by trained local volunteers and a reduced medical staff.
- The cultural barrier will be reduced because the health clinic will employ local volunteers.

Results/Outcomes
- Through the success of the health clinic, new possibilities will be opened.
- The program can expand its coverage of Plumpy Nut to more villages with delocalized feeding centers.
- The coverage of HIV testing can then, in turn, be expanded.
- We predict that decreased mortality in children will lead to more sustainable villages and thus, decreased malnutrition.
- A successful model for a health clinic that can be duplicated in other regions would be the ultimate success story for our project.

Bibliography
Malnutrition:

- Fewer T lymphocytes
- Impaired lymphocytes response and phagocytosis
- Leads to severe chronic diseases, decreases nutrient absorption, and increases metabolic needs
- Lack of vitamins and minerals can lead to hair or nail changes or to more significant problems such as developmental delay or mental retardation
- Malnourished women have high risk of giving birth to underweight infants that may lead to growth failure that increases risk of early death

HIV/AIDS:

- HIV interferes with the body’s ability to fight off viruses, bacteria, and fungi that cause disease makes you more susceptible to certain types of cancers and infections
- Virus multiplies in lymph nodes and slowly begins to destroy helper T cells (white blood cells that coordinate the immune system)
- Causes acute and chronic malnutrition both directly through infection and indirectly through increasing poverty and vulnerability
- Research in 2000 in Malawi showed that 35% of severely malnourished children were HIV positive

Past Methods for Treating Malnutrition:

- Treated with Therapeutic Feeding Centers and Community-based Care
- More practical, cost effective, greater coverage
- Hires more local volunteers than the TFC
- Uses simplified equipment for determining severity of malnutrition in children
- Less severe cases are treated as outpatients

Past Methods for Treating HIV/AIDS:

- Intensive HIV prevention campaigns reduced the number of pregnant women infected by HIV from 30% in the 90s to 10% in 2001
- Increase in supply of condoms: 4.6 supplied per man in 2001 to 10 supplied per man in 2004
  - Voluntary HIV Counseling and Testing:
  - Those who test positive are less likely to transmit
  - Those who test negative, awareness increases
  - Cheaper and more effective since introduction of rapid HIV testing
  - Mother to child transmission:
  - Without intervention – 20-45% chance of MTCT
  - If mother given ARVs, risk significantly reduced
  - Mother must be aware, testing plays vital role
  - Helped to virtually eliminate MTCT in developed countries

Plumpy Nut:

- Promotes faster recovery than other Ready to Use Therapeutic Foods
- Plumpy Nut is made from peanuts, milk powder sugar, oil and a mineral/vitamin mix
- It can be made easily using low tech production methods
- The milk powder and peanuts can be removed with the addition of locally-available grains and legumes
- Plumpy Nut is cheaper than milk formula and is safer to use in areas where uncontaminated water is rare
- It helps children whose mothers cannot produce enough milk for all their children

Antiretrovirals:

- Antiretrovirals are drugs for treatment of retroviruses, especially HIV
- Consists of different types of drugs
- Creates obstacles to HIV mutation by keeping offspring low and preventing mutation
- Offered to asymptomatic patients and patients with history of AIDS-defining illness or severe symptoms of HIV

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