

IMPROVED HEALTH CARE AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF PENDA HEALTH

By Heather Esper, Ted London, and Yaquta Kanchwala

Providing access to quality primary and preventive health care (immunizations, routine health exams, and health education) can increase quality of life for low-income women and their families. This case examines the impacts a for-profit enterprise in Kenya providing primary health care services to the Base of the Pyramid (BoP)¹, has on children and pregnant women and how these impacts can be enhanced. Penda Health provides primary care, both curative and preventive care, to low- and middle-income families and specializes in women's health care. It provides breast cancer and cervical cancer screenings, the full range of family planning services including counseling, and treatment for women's reproductive system diseases. The outpatient clinic aims to deliver a positive patient experience by offering evidence-based, standardized, high-quality primary health care in a friendly environment.

We studied the impacts on children age eight and under and on pregnant women, resulting from Penda's services. The main impacts we found on Penda's customers' children are improvements in health due to high-quality, affordable diagnoses and treatment by Penda, their parents' improved health due to the same services, and their parents' beneficial actions based on the health care education they receive from Penda. Penda's friendly service makes patients comfortable to ask any health care-related questions. In addition, children who attend schools that partner with Penda have access to high-quality health care education and services. Improved health also reduces school absenteeism and increases the ability to spend more time on homework. Our site

¹ The BoP—estimated at approximately 4 billion people—is the socio-economic segment that primarily lives in and operates micro-enterprises in the informal economy, and generally has an annual per capita income of less than 3,000 USD in purchasing power parity (PPP).



visit informed us of a change in financial resources available for patients' children: if parents replace government clinics with Penda as their primary health care provider, they spend more per visit. However, depending on the situation, parents could be spending less overall, due to Penda's accurate diagnosis resulting in lower costs related to fewer return visits to the clinic (e.g. saved transportation and income from missed work). If Penda's customers previously used more expensive private health care providers, increased savings could benefit their children if spent on their health care, nutritional and schooling needs. Improvements in the health of pregnant women increase their ability to care for themselves, the fetus, and ultimately their newborn child. We also found that Penda's focus on preventive health care and screenings may allow parents to live healthier lives and provide more support to children.

An additional benefit is that patients share the health information they learn from Penda with others in the broader BoP community, including non-customers; parents forward Penda's SMSes and children tell other children. Children of Penda's employees can also benefit from the additional income their parents earn when spent on their needs. The ongoing health training that employees receive, including first-aid, improves their children's health accordingly.

ABOUT THE AUTHORS

HEATHER ESPER is the Program Manager of Impact Assessment at the William Davidson Institute at the University of Michigan and an editor and writer for NextBillion.net. Her research centers on exploring the poverty reduction contributions of businesses and organizations serving low-income markets. Esper works with these ventures to identify, measure, analyze and leverage their impacts in order to develop strategies to better meet the needs of their stakeholders and further contribute to reducing poverty. She holds a Master's degree in Public Health and a Bachelor of Science degree in Global Health from the University of Michigan.

TED LONDON is a Senior Research Fellow and the Director of the Base of the Pyramid Initiative at the William Davidson Institute and is a faculty member of the University of Michigan's Ross School of Business. His research focuses on designing enterprise strategies and poverty alleviation approaches for low-income markets, assessing poverty reduction outcomes of business ventures, and developing capabilities for cross-sector collaborations. He has published numerous articles, reports, and teaching cases, sits on several advisory boards, and shares his research in venues around the globe.

YAQUTA KANCHWALA is a Research Associate at the William Davidson Institute at the University of Michigan. She has worked in multiple sectors: agricultural value chains, agritech, food security, microfinance, and access to energy. Her experiences include developing social enterprise growth strategies and conducting rapid impact assessments. She holds a Bachelor of Science in Engineering from Rutgers University and a Master of International Affairs from Columbia University's School of International and Public Affairs.

ACKNOWLEDGEMENTS

This case was made possible with the support of the Bernard van Leer Foundation. In particular, we would like to thank BvLF's Michael Feigelson for his guidance and continued support. Many thanks to Penda, in particular Stephanie Koczela, Beatrice Ngoche, Nick Sowden, Sheezaad Zainulbhai, and Scollastica Kananu, for their assistance in providing information and access to key stakeholders. We would like to thank WDI's Healthcare Research Specialist, Lisa Smith, for her efforts in helping us shape recommendations and clarifying any questions related to the health care sector in East Africa. We would also like to thank WDI's Research Assistant Navjot Singh for his assistance in re-creating the graphs presented in this case and conducting research on pricing in the Kenyan health care system, WDI's Mary Lowe for her research assistance, and Research Assistants Annalise Latting and Arianne Tjio for their copy-editing efforts.

CITATION

Esper, H., London, T., and Kanchwala, Y. (2013). Improved Health Care and its Impact on Children: An Exploration of Penda Health. Child Impact Case Study No. 6. Ann Arbor: The William Davidson Institute



©Copyright 2013 William Davidson Institute at the University of Michigan.

The William Davidson Institute at the University of Michigan and the Bernard van Leer Foundation encourage fair use with the exception of modifications of this material. Proper citation is requested. This publication may not be resold for profit.

ABOUT THE SERIES

UNICEF states that poverty reduction should start with young children (UNICEF. 2000. Poverty Reduction Begins with Children). The first years of life have a large influence on an individual's long-term well-being. Poverty at an early age can cause lifelong damage to children's future and perpetuate the cycle of poverty across generations. Thus early childhood interventions offer an opportune time to influence the poverty cycle. The effects of poverty can be passed on to children through their parents; improving the well-being of parents therefore can also enhance the well-being of their children.

This series was funded by the Bernard van Leer Foundation, a private philanthropic organization focused on improving the lives of children from birth to age eight. The goal of these cases is to gain a greater understanding of the ways in which businesses in emerging markets impact young children's lives and the potential to optimize impact on children. We also hope that these case studies will influence development and impact investing leaders to include metrics related to young children in their measurement systems.

IN THIS SERIES

IMPROVED HOUSING AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF CEMEX'S PATRIMONIO HOY

Patrimonio Hoy provides construction materials to low-income consumers in Mexico, Nicaragua, Costa Rica, Colombia and the Dominican Republic through a 70-week payment plan that allows its customers to build onto their current homes or build new homes room by room.

IMPROVED SANITATION AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF SANERGY

Sanergy builds 250 USD modular sanitation facilities called Fresh Life Toilets (FLT) in Mukuru, a large slum in Nairobi, Kenya, and sells them to local entrepreneurs for about 588 USD. Franchisees receive business management and operations training and earn revenues by charging customers 0.04-0.06 USD per use.

DIVERSIFIED FARM INCOME, MARKET FACILITATION AND THEIR IMPACT ON CHILDREN: AN EXPLORATION OF HONEY CARE AFRICA

Honey Care Africa (HCA) of Kenya supplies smallholder farmers with beehives and harvest management services. HCA guarantees a market for the beekeeper's honey at fair trade prices, providing a steady source of income.

ACCESS TO CLEAN LIGHTING AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF SOLARAID'S SUNNYMONEY

SunnyMoney sells pico-solar products to BoP communities with limited access to electricity in Tanzania, Malawi, Kenya, and Zambia. It markets the lamps through schools and existing entrepreneur networks.

IMPROVED INCOME STABILITY, TRAINING, MARKET FACILITATION AND THEIR IMPACT ON CHILDREN: AN EXPLORATION OF VILLA ANDINA

Villa Andina of Peru produces high-quality agro-industrial food products through its work with local smallholder farmers. The venture trains farmers in organic cultivation techniques and provides guaranteed payment for the crops produced.

IMPROVED HEALTH CARE AND ITS IMPACT ON CHILDREN: AN EXPLORATION OF PENDA HEALTH

Penda Health provides high-quality, evidence-based, standardized primary care, both curative and preventative, to low- and middle-income families in Kenya while also specializing in women's health care.

BUILDING A SCALABLE BUSINESS WITH SMALL-HOLDER FARMERS IN KENYA: HONEY CARE'S BEEKEEPING MODEL

This teaching case study examines Honey Care Africa's transition from obligating farmers to maintain their own hives to providing hive management services. Readers will explore strategies to reduce side-selling and opportunities to generate greater impacts on farmers' families, in particular young children. The case can be found on GlobalLens.com.

Also included in the series is a summary article, Focusing on the Next Generation: An Exploration of Enterprise Poverty Impacts on Children, that aggregates findings across the above six ventures.

CONTENTS

Executive Summary.....	6
Company Background	9
The Genesis of Penda Health.....	9
Health Care in Middle and Low-Income Markets	11
Penda's Business Model.....	12
Health Care Services	12
Pricing.....	13
Advertising.....	14
Quality Control	16
The Penda Difference.....	16
Organizational Structure	18
Competition.....	21
Focusing on Impacts on Children Age Eight and Under	24
Framework and Methodology	24
Methodological Limitations	5
Impact Findings	26
Impacts on Customers' Children and Child Patients.....	28
Impacts on Children in the Broader Community.....	33
Impacts on BoP Staffs' Children	33
Opportunities for Greater Impact	35
Enhance Positive Impacts	35
Reduce Negative Impacts	37
Increase Penetration into Current Markets.....	38
Expand to New Populations and Markets.....	40
Capturing Impacts.....	41
Moving Toward a Systematic Impact Assessment	41
Conclusion	43
Appendices	44
Appendix A: Additional Impacts on Customers' Children and Child Patients.....	44
Appendix B: Additional Impacts on Staff of Penda Health's Children.....	46
Appendix C: Impacts of Family Planning Services.....	47
Appendix D: Additional Impact Assessment Suggestions.....	52
Endnotes	55

TABLES, FIGURES, AND BOXES

Table 1: Substantial Impact on Children (Penda's Patients or Children of Penda's Patients).....	7
Figure 1: Map of Kitengela.....	9
Box 1: Minute Clinic.....	12
Box 2: Head-to-Toe Services.....	12
Figure 2: Penda's Business Model.....	18
Box 3: A Child's Perspective.....	19
Box 4: A Child's Perspective.....	20
Table 2: Penda as Compared to its Direct Competitors.....	21
Table 3: Other Health Care Competitors in the Kenyan Landscape.....	22
Box 5: Portrait of Penda's BoP Market.....	23
Figure 3: Direct and Indirect Impacts on Children.....	24
Table 4: Description of Primary Interview Respondents.....	25
Box 6: A Child's Perspective.....	26
Table 5: Summary of Impacts on Children Age 8 and Under Across Penda Health's Stakeholders.....	27
Table 6: Summary of Impacts of Family Planning Services on Patients' Children Age 8 and Under.....	32
Box 7: Exploration of Individuals Who Choose Not to Use Penda's Sources	34
Table 7: Opportunities to Enhance Positive Impacts.....	35
Table 8: Opportunities to Decrease Negative Impacts.....	37
Table 9: Opportunities to Increase Market Penetration.....	38
Table 10: Average Cost of Transportation to Penda's Clinic via Different Modes.....	39
Table 11: Opportunities to Expand to New Populations and New Markets.....	40
Table 12: Suggested Impacts to Measure and Potential Questions.....	52

EXECUTIVE SUMMARY

According to the World Health Organization (WHO), approximately 6.9 million children under the age of five died in 2011—nearly 19,000 per day and almost 800 every hour. Of these, nearly 80% of deaths occurred in 25 countries, and about half in only five countries: India, Nigeria, Democratic Republic of the Congo, Pakistan and China.¹ In 2010, 58% of under-five deaths were caused by infectious diseases—pneumonia, diarrhea, and malaria accounted for more than one third of all under-five deaths. “The majority of these deaths can be prevented by simple, low-cost interventions, such as immunization, appropriate use of antibiotics, zinc and oral rehydration therapy, exclusive breastfeeding for infants up to six months of age, insecticide treated bed nets (ITN), and anti-malarials.”²

Providing access to high-quality primary and preventive health care (immunizations, routine health exams) can increase the quality of life for low-income women and their families at the Base of the Pyramid (BoP). The BoP—estimated at approximately four billion people—is the socio-economic segment that primarily lives and operates micro-enterprises in the informal economy, and generally has an annual per capita income of less than 3,000 USD in purchasing power parity (PPP). We explore the impacts of providing access to primary health care on children age eight and younger and on pregnant women living in BoP communities by studying the influence of Penda Health (henceforth shortened to Penda) on its patients. In this specific case, access focuses on availability, affordability, and patient adoption via patient empowerment and health care education. This definition of access is adapted from Frost and Reich’s access to health care framework, which consists of four A’s: architecture (policies) that allows for access, affordability, availability, and adoption (patient health education and acceptability of treatment).

Penda provides primary care, both curative and preventive, to low- and middle-income families and specializes in women’s health care. It provides breast cancer and cervical cancer screenings, the full range of family planning services including counseling, and treatment for women’s reproductive system diseases. The outpatient clinic aims to deliver a positive patient experience by offering evidence-based, standardized, high-quality primary health care in a friendly environment. Penda opened its first clinic in the industrial town of Kitengela, Kenya, in February 2012, an industrial town outside of Nairobi. The average cost per visit at Penda is approximately 5-7.5 USD as compared to the average cost of 40-50 USD at high-quality private clinics and no fees at government clinics. Penda provides the local population with an alternative to free or nearly free government clinics, which often have very long wait times (sometimes even two to three days), to self-provider clinics, many of which do not have qualified practitioners and/or equipment, and to traditional healers who practice non-evidence-based medicine.

We gained an initial understanding of the impacts that access to improved health care have on our target population through a literature review and interviews with thought leaders in the private, primary health-care provider space. We then investigated Penda’s impacts on our target population across three dimensions of well-being—economic, capability, and relationship—through in-depth qualitative interviews with key Penda stakeholders in Kitengela, Kenya. Both direct impacts on children as well as indirect impacts on children through their parents and the environment were assessed across the following stakeholders (**see sidebar**)

We found that Penda has the greatest impacts on its patients’ children and child patients (presented in **Table 1**). Based on conversations with Penda’s patients we learned that priority is given to the most

Stakeholders

Patients

Penda specializes in women’s health; it also provides primary curative and preventive health care services to children and men.

Local Staff

Penda hires individuals from the communities it serves.

Broader Community

Individuals who do not have a relationship with Penda other than living near Penda activities.

vulnerable — children age five and under.³ We expect that school-age children, those three and older, are more likely to become ill due to increased contact with other children. We also learned that spending on health care is not prioritized by gender, but rather by severity of sickness.⁴

Table 1: Substantial Impacts on Children (Penda's Patients or Children of Penda's Patients)

Economic Well-Being	Changes in Wealth: Changes in financial resources available for child's well-being due to changes in household expenditure on health care (increased expenditure if parents previously went to government clinics, decreased expenditures if earlier visits to government clinics resulted in incorrect diagnosis, and decreased expenditure if parents previously visited expensive private clinics). As a result of their improved health from Penda's care, healthier parents miss fewer days of work due to illness and hence earn more income that could be spent on their children's needs.
Capability Well-Being	Improved Physical Health: Children's physical health improves from their parents' access to high-quality, affordable health care, in addition to their parents' beneficial actions based on health education they receive through the venture. At Penda, children benefit from receiving the right diagnosis and medicine often resulting in shorter duration and severity of illness. Penda's low cost services increase the frequency of patients' visits, resulting in earlier detection of illness. Children's health is also impacted through the improved health of their parents, from reduced exposure to infectious diseases and health risk factors. In particular, improvements in the health of pregnant women affect their ability to care for themselves, the fetus, and ultimately their newborn child. Penda's friendly service makes patients more comfortable to ask questions and develop trusting relations with the clinical officers. Parents also learn new health information about how to care for their children via Penda's information distribution channels such as SMS. The instructions that partnering school's employees receive through Penda training also improves children's health. Improved Education: As a result of their improved health (reduced sick-day absenteeism), children spend more time in school and on their homework.
Relationship Well-Being	Increased Support: Children benefit from the increased quality and quantity of time the family spends together when parents and children enjoy improved health outcomes.

In addition to patients' children, Penda positively impacts the children of its staff members and people within the broader community. The children of Penda's staff benefit from the additional income their parents earn, when their parents contribute toward their immediate needs like food, clothing, and educational opportunities. The ongoing health training Penda staff members receive improves their children's health accordingly. Children of the broader community are impacted, indirectly, through contact with patients (or their parents' contact with patients): patients share health information they receive from Penda with others in the community.

We visited Penda in the ninth month of its operations and were unable to fully study Penda's impacts from family planning services. During our literature review, we found multiple impacts on children (both direct and indirect), including negative impacts but we cannot fully state how, when, and what impacts will apply in the Penda context (see summary of impacts in **Table 5** and a detailed discussion, including sources used in **Appendix C.**)

Based on the likely outcomes that Penda has on children and pregnant women, we identify opportunities for the venture to enhance, deepen, and expand its impacts:

- **Penda should explore methods to increase preventive health care visits among children as a major trend in Kenya is to seek medical services only when ill. In addition, Penda should explore methods to attract more children overall to the clinic by focusing efforts on attracting their mothers along with making the clinic more child-friendly**
- **Penda should explore creative methods and marketing to increase visits by pregnant women to ensure healthy development of the fetus**
- **Penda should explore leveraging children in partner schools as informal health ambassadors to spread health care messages to the wider community**
- **Penda should explore what are the negative impacts of family planning services on women who seek them at the venture**
- **Penda can consider introducing necessary medical equipment and services to attend to all health needs of patients and their families**
- **Penda should explore the impact of providing free services at events that are run either by Penda or by partner organizations**
- **Penda should explore ways to connect potential patients from the BoP with health care financing**

Beyond these key recommendations, we also offer guidance on conducting impact assessments in a systematic and manageable manner.

Note: Due to similarity in impacts across the six cases and in an attempt to be concise, we only include secondary research supporting and further exploring impacts in the first case study of this series—Patrimonio Hoy. Also, please note that since these cases were developed over the course of 2012-2013, a number of our recommendations to enhance positive and mitigate negative impacts for the venture, have been implemented since we visited the venture. As such, please visit the enterprise's website for more information on their latest practices.

COMPANY BACKGROUND

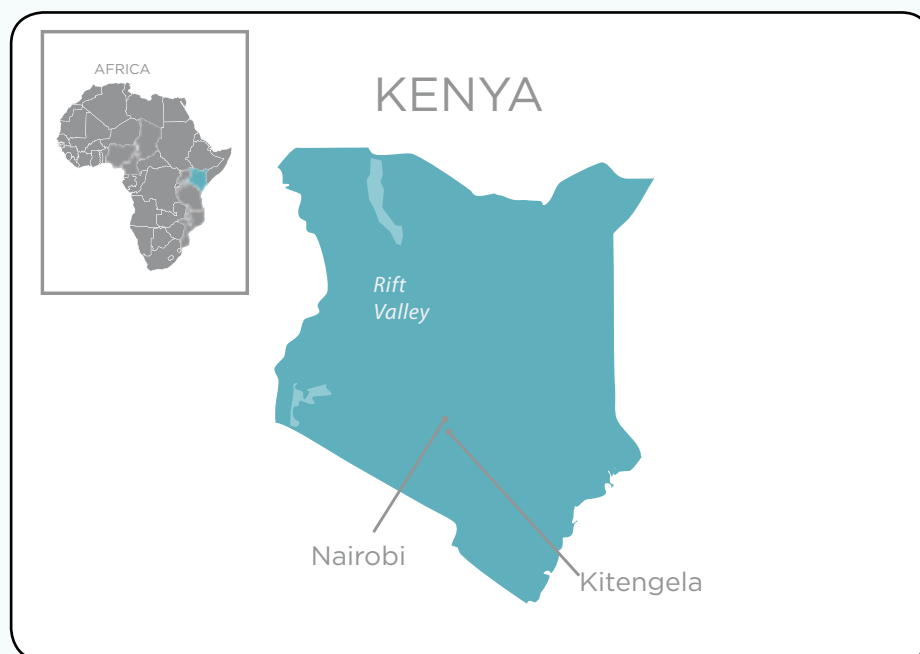
THE GENESIS OF PENDA HEALTH

Penda Health (henceforth called Penda), a primary health care provider to low- and middle-income families, was formed in mid-2011 by Beatrice Ngoche, Stephanie Koczela, and Nicholas Sowden, each of whom have experience working in Kenya with vulnerable populations. Penda opened its first outpatient clinic in February 2012 in Kitengela, Kenya (see **Figure 1**), an industrial town 35 kilometers from Nairobi that has a workforce of 20,000, 85% of which are women.⁵ The five-room, ground-floor clinic on the town's main road, that remains open on weekends, saw 620 paying patients in December 2012, 570 in January 2013, and a record 819 in February 2013. Penda aims to maintain its clinical patient load to a minimum of 720 patients a month (24 per day), in order to break-even. In addition to providing curative and preventive health care solutions, Penda specializes in women's reproductive and sexual health: it provides breast cancer and cervical cancer screenings, the full range of family planning services including counseling, and treatment for women's reproductive system diseases.

Penda won the 2012 Entrepreneur of the Year award from BiD Network and is part of the following international health consortiums:

- International Partnership for Innovative Healthcare Delivery (IPIHD): a program to support innovators and entrepreneurs in scaling innovative health care delivery solutions⁶
- Center for Health Market Innovations (CHMI): promoting policies and practices that improve privately delivered health care for the poor in low- and middle-income countries⁷

Figure 1: Map of Kitengela





Penda's reception and waiting area includes seating and a television to keep patients busy.

Penda was created to fulfill unmet health needs in the local market: during Penda's market research phase, the management team found a severe lack of quality and affordable options for most Kenyans, including cases where people were misdiagnosed, met unqualified doctors who had old equipment and drugs and were sometimes rude to their patients.⁸ As Ngoche explained, "many Kenyans were treated poorly and felt stigmatized by the system," especially regarding women's health issues.⁹

"I had just attended too many funerals, people dying from completely preventable

causes and treatable diseases, standing at the sides of graves and holding the babies of parents who had died from basic infections that are treatable in other parts of the world," said Koczela, describing what prompted her and her colleagues to open Penda's Kitengela clinic.¹⁰ Penda's goal is to "transform health care in East Africa by building a chain of outpatient health clinics that offer evidence-based, standardized, primary health care and unparalleled member experience by clinical officers, at surprisingly affordable rates," said Sowden.¹¹



Informational material placed in Penda's reception and waiting area.

The BoP venture has received nearly 100,000 USD from six US- based and Kenyan based investors ⁱⁱ and is in the process of raising 60,000 USD in grant capital to build and operate its next stage of business. The founders put up ~25,000 USD of their own money to get the company started before any external funding was secured. In addition, Penda's "social share" program helped raised 27,000 USD for its first clinic. In this program, persons close to the founders gave multiples of 100 USD (one social share) with an agreement that Penda would provide a 10% return on investment after two years, if the clinic was successful. Going forward, the funding strategy is to continue to raise grant money to open new clinics and to innovate on their model.¹²

Penda has treated 5500 patients since opening its first clinic. Penda plans to open four new clinics in 2013, in Donholm or Embakasi, Kasarani, and Githurai.¹³ The second and third clinics are to open in the middle of the year in close proximity to the Kintengela clinic.¹⁴ Penda aims to roll out 50 clinics by 2018 across East Africa with the potential to reach two million new patients.¹⁵

HEALTH CARE IN MIDDLE AND LOW-INCOME MARKETS

According to the government, there are more than 5,000 health facilities in Kenya, 41% operated by the government, 15% by NGOs, and 43% by the private sector. By category, the government operates most hospitals, health centers, and dispensaries, while the private sector operates nursing homes and maternity facilities catering to higher income households.¹⁶

In 2004, the WHO recorded the following number of health workers in Kenya:ⁱⁱⁱ 3,380 doctors, 6,496 'environment and public health workers', 1,797 'health management and support workers', 7,000 'laboratory health workers', and 5,610 other health workers' in a country of nearly 41 million people.¹⁷ WHO studies also found that more than 50% of Kenyan physicians practice in Nairobi, which has an estimated 3 million people and represents only 7.3% of the population. Another study found only 1,000 physicians (approximately 30%) work in the public sector, which serves the majority of Kenyans. About 37,000 nurses supplement physician care, along with traditional midwives, pharmacists, and community health workers.¹⁸ A USAID- report released in 2010 on the state of the Kenyan health system found the ratio of health workers at 169/100,000 (the WHO recommended is 230/100,000) – these numbers recorded health care workers who were registered but may not have been employed.¹⁹

In 2009, the total health expenditure was equivalent to about 4.8% of GDP at current market prices, which translated to per capita health spending of approximately 1,987 KES (27 USD as per 2009 conversion rates).²⁰ According to Penda's research, in 2011, middle- and lower-income Kenyans spent 1.2 billion USD on outpatient care (outpatient services and medicines); the market is growing at 7% per year and will reach 2 billion USD by 2018. However, these income groups have poor access and equity to essential health care service. Their research found that high-quality care costs 40-50 USD per visit, which is unaffordable for this segment, and who generally use government clinics and/or single-provider clinics.

According to Penda's research, government clinics are theoretically free or nearly free but patients wait in line for up to two to three days at a time; the clinics are continually out of stock; and many patients complain about the service and care provided. An assessment of the Kenyan health system in 2010 found 87% of healthcare professionals had received no training at all in the last three years.²¹ The majority of Penda's target market uses single-provider clinics, i.e. a doctor or nurse that has set up his/her private practice. However, in such cases the health care provider might not be qualified, might use counterfeit drugs, and might employ practices and equipment that are out of date, hence providing poor quality care and treatment.

The Maasai--who are featured in this case--are an ethnic group of semi-nomadic people located in Kenya and northern Tanzania. They live outside urban and peri-urban centers, near game parks and in villages in rural areas where access to quality health services are poor.

ii Investors include Eleos Foundation and G7, an investment group.

iii For a detailed explanation of each type of health worker, please visit WHO's Global Health Observatory Data Repository.

Box 1: Minute Clinic

Minute Clinic is a division of CVS Caremark Corporation, the largest pharmacy health care provider in the United States. Minute Clinic, launched in 2000, currently has about 600 locations across 25 states. It offers standardized, high-quality, convenient, affordable primary health care through nurse practitioners and physician assistants. Patients do not need to make an appointment and can receive treatment for common illnesses and injuries, vaccinations, counseling on health and nutrition, screenings, physicals, examinations, physical assessments, referrals to specialists, interpretations of lab and diagnostic results, and prescriptions.²²

Box 2: Head-to-Toe Services

- Height, weight, and age check
- Head circumference check (for children under 5)
- Upper arm circumference check (for children under 5)
- Stool microscopy/urinalysis
- Deworming
- Vitamin A (for children under 5)
- Full haemogram (blood count)
- Blood group check
- Physical exam (includes a check for jaundice; ear, nose, and throat exam; exam for skin conditions; kwashiorkor, a form of malnutrition testing; marasmus, testing for protein/energy malnutrition; and hernia test)
- Nutrition counseling for parents
- Gift pack, which includes crayons, drawings, a face painting from the receptionist, a big balloon, and a few small play items

PENDA'S BUSINESS MODEL

Penda offers affordable, high-quality, standardized, evidence-based medical care for the whole family, including hard-to-find women's sexual and reproductive services such as breast and cervical cancer screening, provided by friendly, caring staff via an outpatient clinic model. In addition to curative health care services, Penda offers 'Wellness Checks' for men, women, and children and some counseling,^{iv} which all fall under the umbrella of preventive health care services offered. Penda aims to mimic the US-based Minute Clinic business model as described in **Box 1**.

Health Care Services

A typical Penda patient requires a consultation, applicable diagnostic tests, and medicine. The most common diagnoses are upper respiratory tract infections followed by urinary tract infections (UTI). Other common diagnoses include malaria, tonsillitis, candidiasis, pneumonia, diarrhea, infection, headaches, asthma, and asthma-like symptoms. Penda also provides tetanus shots and is "working with the government to provide all required immunizations for babies."²³ Penda plans to add a "head-to-toe" service plan for children in the coming months: they are in the process of determining what services should be added to the plan (see **Box 2** for a list of possible services).²⁴

The BoP venture offers all family planning options including implants, hormones such as combined oral contraceptives (COC) and progestin-only contraceptives (POP)^v, male and female condoms, the morning-after pill, and copper intrauterine devices (copper IUDs^{vi}). Patients who request or require vasectomies are referred to Marie Stopes International, Penda's referral partner for this specific service. Penda is currently focusing on increasing its number of cervical cancer and breast cancer screenings.²⁵

iv Penda's Clinical Officers ask patients if anything is stressing them out, in order to start a counseling dialogue.

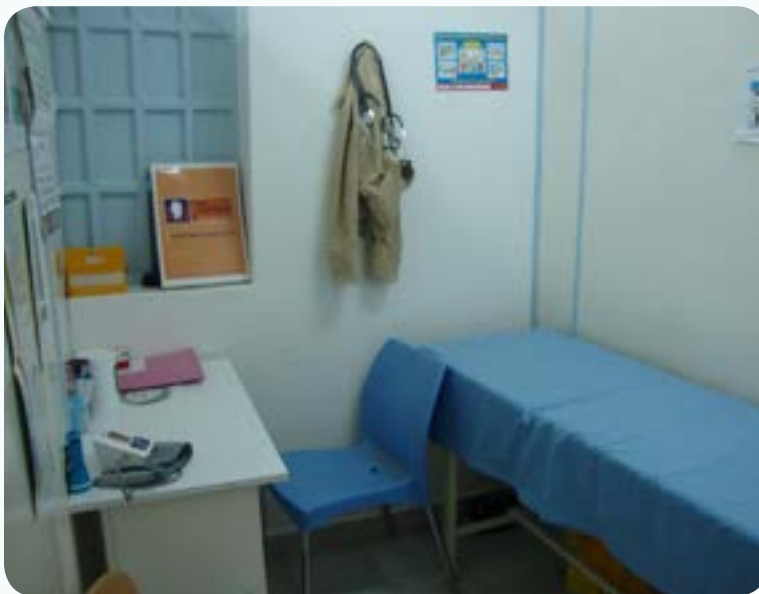
v In Kenya, the only supplier of POP is the Kenyan government (as recorded in an interview with Stephanie Koczala in October 2012).

vi Penda can also order the hormonal IUD, which costs 300 USD as compared to 2 USD for a copper IUD, and receive it within a week, if a patient requests this specific modern family planning method.

Penda's clinic includes an on-premises laboratory for blood work and analysis.^{vii} Penda refers patients to hospitals depending on the patient's health issue or if Penda does not have the necessary equipment or services to conduct diagnoses and provide medical care. About one out of ten Penda's patients is referred to area hospitals. Penda recognizes this rate of referral: "[At present], we have the best [possible] referral system. When we have to refer people to another place, first we call a doctor there and let them know that our member is coming to them. Then we make sure our member reaches. Then we call them after to follow up and see how it [the experience] was. If we do this they'll come back to us again," Ngoche wrote in the November 2012 posting on the Penda Health Blog.²⁶

Pricing

Before Penda opened the first clinic, the founders conducted a thorough review of competitor prices on consultation fees, lab work, and common drugs for common diseases, which provided the enterprise with its initial pricing structure.²⁷ When new products and services are added, the same process is carried out to determine pricing.



The exam room at the clinic is clean and provides privacy to the patient.



Penda's on-site lab provides blood-work analysis services.

The patient pays for consultation, diagnostic tests, and medicines at the end of the visit. The average cost per visit at Penda is between 5²⁸-7.5²⁹ USD per patient. Penda charges 150 KES (1.7 USD) for consultation, 200 KES (2.3 USD) for lab work, and the average spending on drugs is also around 200 KES (2.3 USD).

vii Penda does not own the laboratory; it reimburses the owner, who does fall under Penda employment.



All Penda services and related pricing are placed at the reception.

The total cost to the patient can increase if other services are required.³⁰ Penda subsidizes inexpensive general services with higher-margin preventive health care services, costing between 100-3,000 KES (about 1.2-34.5 USD³¹).

Penda conducts pricing exercises to assess whether its services are affordable through market surveys (“what is your band of affordability?”) and feedback requests from patients (“was the service affordable?”). Survey results suggest that women peg health costs to consultation fees and costs associated with malaria and pregnancy tests. Penda confirms that these are not ideal methods to gauge willingness to pay and affordability, but have worked so far.

Advertising

Under Penda’s “member’s referral scheme,” both parties receive a discount when one refers the other to Penda. To advertise its location, Penda has placed large sign-boards at the front and the back of the clinic and one at a nearby bus-stop. According to Koczela, this is one of the most effective methods of advertising, along with word of mouth recognition. Penda also conducts marketing events that includes delivering health education messages at local churches and mosques.



Sign at back entrance to clinic.



Sign at main entrance to clinic.



Roadside sign in front of clinic.



Advertisement on walkway.

Quality Control

Penda uses multiple quality control processes and is a leading health care organization in Kenya in this respect. It makes earnest efforts to co-validate the quality of care provided and triangulate data collected from both internal and external independent sources.

- To ensure standardization of medical processes, Penda tracks each patient's diagnoses in an Excel sheet to continue to develop medical protocols and guidelines. Currently, Penda has five such protocols in place, and 50% of patient cases fall under a Penda Medical Protocol. In addition, Penda stocks a standard set of drugs for Clinical Officers (COs) to prescribe from. This limits the COs' ability to treat beyond their capacity and ensures patients receive the best-quality drug.
- Penda conducts chart reviews on 10% of patient charts each week. The physicians conducting the review deliver feedback directly to the COs. Each chart comment is given a score and total scores are recorded in an Excel sheet that filters scores by CO, location, and patient case. Each week, the physicians also prepare mini-trainings that address issues found repeatedly in charts.
- Penda conducts "secret shopped style," also known as "mystery patient," quality checks, where the "mystery patient" looks for any risks that could harm a patient in the clinic and scores one point for each such risk found. Penda conducts four "mystery patient" checks a month and aims to get fewer than ten points per month.
- Penda collects feedback from patients at the end of their visit (patients fill out short survey forms). Questions include "would you refer us to your friends?" and "was the service friendly?" Penda also has a complaint box in the waiting area where patients can choose to leave anonymous feedback. The team regularly reviews complaints and uses them to improve service delivery.
- Penda received a third-party, independent medical quality evaluation by SafeCare Kenya on 25th February 2013.

The Penda Difference

Penda's business model is based on high-quality care and excellent customer service. To maintain this standard, Penda invests a great deal in its employees. Penda employees receive regular trainings, including trainings on developing a service-oriented culture, and bi-weekly performance reviews. Training methods include videos, role-play, discussions, and on-site trainings.

Penda's staff members work hard to ensure their patients are well informed on their health issues and have as pleasant an experience as possible at the clinic. When a patient comes to the clinic, a Penda's staff member begins with providing basic-level information about the health issue. Penda employees take time to explain treatment plans, how to take medications, and when they can expect to see changes. To make the experience more pleasant for children, children receive a balloon and drawing materials, and at the end of their visit their drawing is taped on the wall.

Sowden said: "One thing I'd like to emphasize about Penda's differentiating factor is the effort put into educating our patients. We hope that each patient leaves our clinic understanding what their diagnosis is, what the treatment plan is, when to expect improvement, or what to do if their health doesn't improve, and finally, how to help prevent this health issue in the future. This is very uncommon, but very powerful for long-term health."

Penda always performs necessary tests prior to providing medications or other forms of treatment. Our site visit informed us that often, when other clinics prescribe medicine and ask patients to find it themselves, patients do not make the necessary purchase, or buy the wrong medicine instead.³² Penda stocks commonly used medicines at its clinic in order to ensure patients successfully obtain the correct medicine. If the medicine is not in stock, a Penda staff member runs out and gets it, because there is a



A child's drawing posted on Penda's waiting-room wall.

possibility that the patient will buy the wrong dosage or report the wrong name to a chemist.³³ When asked how Penda deals with the prevalent issue of counterfeit or sub-standard drugs in Kenya, Ngoche said: “Penda uses a supplier application form to vet suppliers before we start working with them. This includes talking to other hospitals that they supply and checking with the Public Health Department to make sure they are a recommended supplier. Right now, we only use Transchem,” one of the largest suppliers of drugs in Kenya.³⁴

LEVERAGING THE MOBILE PHONE

Penda sends SMS messages once a week on Mondays to provide patients with clinic updates and preventive health care information such as taking vitamins at mealtime to reduce flu incidence and the benefits of getting a good night's sleep. During breast cancer awareness campaigns, the clinic sends patients information about breast cancer and invites them for screenings. Penda also uses SMS for patient appointment reminders and to thank patients, and establish a warm, caring relationship. To ensure the prescribed treatment is working effectively, Penda follows up with patients via phone conversations, to check on their health status.³⁵

Besides communicating with patients, Penda leverages the phone to make payments more convenient for patients. Penda is mainly a cash-based business, but it has begun offering patients the ability to pay via M-PESA.^{viii} Penda collaborates with Kopo Kopo, a social enterprise in East Africa, to collect M-PESA payments and more patients use the service as they become aware of its availability. Nevertheless, patients often go home to retrieve or borrow money when they realize they do not have enough cash to cover their bills, and return the same day or the next to pay for services.

The clinic also uses mobile technology to manage inventory. The BoP venture minimizes waste and leverages economies of scale by using services like Luomis Tech, an online software system. The system,

viii Mobile phone-based money transfer and microfinance service by Safaricom and Vodacom, the largest mobile network operators in Kenya and Tanzania, respectively. M-PESA allows users with a national identification card or passport to deposit, withdraw, and transfer money easily with a mobile device.

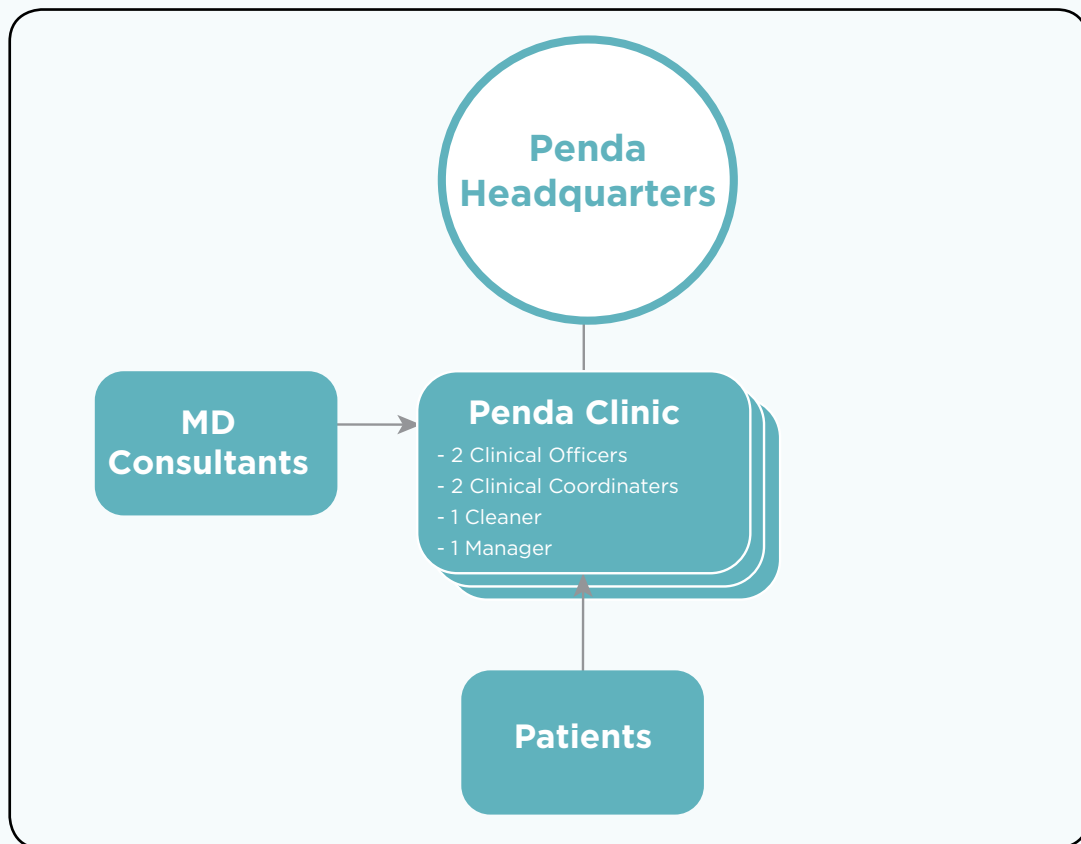
designed for free by a friend, allows staffers to manage inventory of medicines. Each time clinicians dispense a drug they log in to the secure system and enter the information. Orders and receipt of orders are tracked in the same way. The system also tracks expiration dates of medicines and usage patterns, and organizes pharmaceuticals by patient number. At the end of each month, Luomis Tech projects the medicine need for the next month, finalizing 75% of orders. Staffers determine the remaining 25% of need during the monthly audit. The organization aims to store its medical records electronically and is in the process of identifying its needs to design an appropriate system.

"I think that most of the health care providers that we're competing with don't use technology at all to supplement their systems," Koczela said. "They're all paper records; their drugs are often out of stock. We have a system that gives us a warning if any of our drugs are expired, and it forces our providers to dispose of those drugs immediately. This system ensures that we will always have what's necessary for our patients."³⁶

Organizational Structure

Penda's efficient organization structure (see **Figure 2**) helps ensure low-cost care and service. As on January 31, 2013, Penda's Kitengela clinic was staffed with one manager, two Clinical Officers, two Clinical Coordinators and one cleaning staff member.³⁷

Figure 2: Penda's Business Model



CLINIC STAFF

- Manager:** The clinic manager is responsible for day-to-day operations at the clinic, including hiring and staff management, keeping inventory, processing drug orders, partnership management, performance reviews with staff, insurance claims, and assisting with marketing campaigns.
- Clinical Officer (CO):** COs provide diagnostic services, treatment plans, prescriptions, and delivery of preventive health education. They are also responsible for sterilizing and maintaining equipment. During the recruiting process, each applicant must take the seven-page Clinical Skills and Knowledge Exam, developed by Penda's Medical Advisory Board (the average passing rate is 34%). COs are registered with the Clinical Officers Council or with the Nursing Council and have a valid practicing license. They are not however medical doctors but have the necessary training in clinical medicine to perform such duties.
- Clinical Coordinator:** Clinical coordinators also referred to as receptionists, greet patients as they enter the clinic and make them feel welcome. They provide first-time patients with the appropriate forms, accept patient payments, and collect feedback forms. The coordinators go to marketplaces, shops, churches and mosques to share information about Penda and basic health information approximately twice a week. This not only drives up patient volumes, it also builds trust-based relationships within the communities. The receptionist is also responsible for opening and closing the clinic.
- Cleaning Staff and Other Persons from the BoP:** The clinic's cleaning staff member cleans the premises three times a day and also helps with word of mouth marketing. Penda employs one person in this role and also provides projects to the local plumber, electrician, painter, and carpenter as and when necessary, all of whom belong to the BoP community.



A clinical coordinator filling out a form with a patient.

Box 3: A Child's Perspective*

Jomo is six years old and hated going to the doctor with his mother Malaika. His mother is a low-income resident of Kitengela who accessed medical services from a local government clinic under the national health insurance plan. In their previous visit, where cost of care was covered, Jomo, who had a high temperature and no energy, had to wait in line for a very long time. When the nurse saw him, she checked his temperature and wrote down malaria medicine, without even asking him how he was feeling or requesting blood work. This prompted his mother to visit Penda Health. At Penda, he did not have to wait in a very long line, could sit while waiting and the nurse was very sweet to him. He was diagnosed with a viral fever and was given the correct medication. Malaika is happy to see her son well again – he is back to making mischief, but she does not mind as long as he is a happy, energetic, and healthy child.

* This fictional account is provided to represent a common Penda Health stakeholder situation. The narrative sketch is based on information collected during interviews and focus groups.

HEADQUARTERS

Penda's headquarters is also located in Kitengela. The founders, an accountant, and the following persons are based at this location:

- **Business Development Officer:** The officer divides his time between the office and clinic. He reviews customer responses to the clinic's feedback form and shares negative responses with the manager. He also makes certain that employees are paid on time and the facility is maintained properly.
- **Human Resources:** Penda's model depends on its staff's ability to deliver friendly, high-quality health care. The human resources department plays a critical role in selecting individuals who are friendly, patient, and have an empathetic, caring nature. The hiring process includes application, pre-screening, clinical evaluations of medical providers, group interviews, and one-on-one interviews with related staff. Each new staff member trains on-site for one month, and receives a certificate upon completion. All of this is coordinated by human resources.

MEDICAL OVERSIGHT

Penda works with a small network of both paid and volunteer doctors who come in for a few hours each week to assist the clinic with chart review, diagnosis, and treatment plans. The doctors also conduct refresher trainings for Penda's Clinical Officers on different medical topics.

PARTNERS

Penda's profitability model depends on high volumes of patients, treated by staff in efficiently managed clinics at affordable prices and low margins, and yet ensures the venture sustainability. Penda partners with schools, factories, and other community units to drive high volumes to the clinic. The clinic offers free screening events such as blood pressure and blood sugar screenings for the members of these institutions. While members wait in line for services, the Penda team shares information about the set of services they provide. Approximately 500 people typically attend each event, and the clinic typically sees about 20 new patients after each event. For example, in October 2012, Penda partnered with Musoni (a microfinance institution) to provide free health screenings to 300 women members, to advertise its services.

Penda is part of the national vaccination program and receives all vaccines for free from the Ministry of Health. Penda conducts monthly reporting on number of vaccines dispensed to aid the government in its efforts.

Through its partnerships with schools, Penda delivers health information to children and school staff. Penda's staff informs students about the importance of hand washing, proper nutrition, and exercise and offers its services at a reduced price to school staff, students and their families and neighbors. Penda provides school children with brochures and coupons to give their parents, for example, coupons for cervical cancer screening worth 800 KES (9 USD) are provided at 650 KES (7 USD). Additionally, teachers from the partner schools are able to take sick children to Penda during the day. The school pays for the visits and is reimbursed by the parents.

Box 4: A Child's Perspective*

Four-year-old Alda likes going to Penda with her mother Hafsa, because when she arrives, the receptionist provides her with crayons and paper and encourages her to draw a picture that she will tape up on the wall. The receptionist also gives her a balloon and plays with her while her mom sees the nurse. Her mom used to go to the government hospital where the visits were free or nearly free. Alda knows there is a difference in cost because she and her brother no longer get apples and bananas to eat at home. But her mother looks less tired; she is playing with her again and is even helping her father at the shop. Alda hopes she can eat apples and bananas because those are her favorite fruits. Her mother has promised Alda that this will happen soon.

** This fictional account is provided to represent a common Penda Health stakeholder situation. The narrative sketch is based on information collected during interviews and focus groups.*

COMPETITION

Depending on a BoP patient's location and access to transportation, the patient's first point of contact for a health issue can be any of the four options presented in **Table 2**. The country's government-operated health system is organized in a decentralized hierarchical pyramid with village dispensaries at the base. This level, largest in number, is superseded by health centers, followed by district hospitals and then provincial hospitals, which are fewer in number. National referral hospitals sit at the apex.³⁸ The Kenya Medical Supplies Agency (KEMSA) "works to support the National Health Strategic Plan and the Kenya Health Package for Health in providing public health facilities with the right quantity and quality of drugs and medical supplies at the best market value".³⁹ Other health care provider options, both private and government, are presented in **Table 3**.

Table 2: Penda as Compared to its Direct Competitors

Type	Competitor	Description	Cost to patient per visit (USD)
Private-sector	Penda	Provides high-quality, standardized, evidence-based primary care, both curative and preventive, to low- and middle-income families and specializes in women's health care. It provides breast cancer and cervical cancer screenings, the full range of family planning services including counseling, and treatment for women's reproductive system diseases	5-7.5*
	Single-provider clinics	A doctor or nurse that has set up his/her private practice. However, in such cases the health care provider might not be qualified, might use counterfeit drugs, and might employ practices and equipment that are out of date, hence providing poor quality care and treatment	7-9*
Public-sector	District hospitals	Concentrates on the delivery of health care services and generate their own budgets based on guidelines established at the provincial level. While the Ministry of Health sets policies, develops standards, and allocates resources for health care services, most management takes place at the district level ⁴⁰	No formal study
	Health centers	Provide ambulatory, preventive including vaccinations, and curative services, and adapted to local needs.	Free or nearly free (about 0.24 USD as noted in 2004 ⁴¹)
	Dispensaries	Provide wider coverage for preventive health, a primary goal of Kenya's health policy	Free or nearly free (about 0.12 USD as noted in 2004 ⁴²)

*Cost to patient per visit determined through Penda research

Table 3: Other Health Care Competitors Found in the Kenyan Landscape

Type	Competitor	Description	Cost to patient per visit (USD)*
Public-sector	National hospitals	Provide sophisticated diagnostic, therapeutic, and rehabilitative services. The two national referral hospitals are Kenyatta National Hospital in Nairobi and Moi Referral and Teaching Hospital in Eldoret	No formal study
	Provincial hospitals	Provide specialized care and act as referral hospitals to their district hospitals. This level in the government health care system acts as an intermediary between the national level and the districts. They oversee the implementation of health policy at the district level, maintain quality standards, and coordinate and control all district health activities	No formal study
Private-sector	Private clinics and hospitals	High-quality, evidence based medicine. Often too expensive and inaccessible for BoP patients. Those BoP patients who do access these services, out of desperation at not finding health improvement from visiting cheaper options, are often forced to cut back on school fees or reduce the quantity or quality of the nutrition they provide for their families. The system is wrought with insurance deficiencies, inpatient services are out of the price range for even upper-income patients who are uninsured	40-50
	Illegal clinics and providers	A number of providers practice medicine without a license in Kenya. The government occasionally cracks down on the illegal providers, but the system continues to be rife with persons with little or no medical training	No formal study
	Traditional healers (many of them in Kenya come from Luo communities around Lake Victoria)	Practice non-evidence-based health care. Some are spirit-based healers that Western science does not recognize. According to the WHO, traditional healers exist across the developing world – in fact up to 80% of rural communities in the developing world regularly use traditional healers for primary health care. They draw on centuries of knowledge and practices, and are trusted to deliver what they promise. In Kenya, traditional medicine regulation is still in its infancy ⁴³	2.50 (2005 data from an external source)

*Unless noted, cost to patient per visit determined through Penda research

Box 5: Portrait of Penda's BoP Market

Population Growth: Kenya has one of the world's fastest-growing populations, which has more than tripled in the past 30 years placing increasing pressure on the country's resources. A high fertility rate (births per woman) between 4.6-4.92⁴⁴ as in 2008-2009, rapid population growth and a widening income gap have led to erosion in food security, employment, and income gains. Nearly 80% of Kenya's population lives in rural communities and relies on agriculture for income. Penda's first clinic has been set up in a peri-urban area, the second clinic is planned for urban Nairobi and the third in a rural area. The country's poverty rate has remained steady at about 48% since the 1980s, with approximately half of the country's 41.61 million population (as of 2011)⁴⁵ unable to meet their daily nutritional requirements.^{ix} Kenya achieved a rapid decrease in its birth rate after increasing public advocacy of family planning services in the 1990s, but the birth rate still remains very high. Women from the lowest socio-economic status groups are the least likely to use modern contraceptive methods. Furthermore, "88% of Kenyan households are devout Christian and 11% are Muslim, with a strong entrenched patriarchal tradition."⁴⁶ Satisfying unmet family planning needs in Kenya could avert 14,040 maternal deaths and 434,306 child deaths by 2015. The social sector savings from family planning efforts in Kenya for 2005-2015 are estimated at 271 million USD while costs to implement efforts are estimated at 71 million USD, implying total savings of 200 million USD.⁴⁷

Insurance Coverage: Formally employed Kenyans with a certain income can participate in the National Health Insurance Fund* (NHIF). Only 25% of Kenyans have some kind of health insurance coverage (latest available data from 2006-7).⁴⁸ Recent efforts to reform the NHIF and to extend its services to a greater portion of the population through the creation of a National Social Health Insurance Fund failed due to political opposition. Penda's target market consists of low- and middle-income households that are uninsured. For example, in a sample study, Penda found 86% of people were uninsured in the area where Penda planned its second clinic.

Major Diseases: In 2010, malaria accounted for 27% of all deaths registered, followed by pneumonia at 18% and AIDS at 11%. Cancer and tuberculosis accounted for 10% each.⁴⁹ In 2006, only 42% of Kenyans⁵⁰ had access to improved sanitation facilities, a major cause of the rampant occurrence of diarrheal diseases. In 2010, diarrhea was found to be the third-leading cause of death of children under five years old in Kenya.⁵¹

ix Other health statistics include: Kenya's life expectancy at birth is 54 years (regional average: 55), the infant mortality rate is 52 per 1,000 live births (regional average: 76), the under-five mortality rate is 74 per 1,000 live births and the maternal mortality ratio is 488 per 100,000 births (regional average: 832.16). As noted in a USAID 2010 report on the state of the Kenyan health sector.

x Penda is working toward becoming eligible to take the NHIF

FOCUSING ON IMPACTS ON CHILDREN AGE EIGHT AND UNDER

FRAMEWORK AND METHODOLOGY

The BoP impact assessment framework (BoP IAF) provides a structured approach for gaining a holistic understanding of an enterprise's impacts on key BoP stakeholders. It assesses how BoP stakeholders are impacted across three areas of well-being: economic, capability, and relationship. We customized the BoP IAF to analyze Penda's potential impacts on children across stakeholders engaged with Penda, including children of staff, and children in the broader community.

We also adapted the framework to explore both direct and indirect impacts on these children (see **Figure 3**). Direct impacts are those impacts that directly result from Penda on children, and indirect impacts are those impacts that occur on children as a result of a direct impact from Penda on their caregivers, another adult or the environment.



Figure 3: Direct and Indirect Impacts on Children

The customized set of potential impacts we explored across the BoP IAF's three areas of well-being are:

- **Economic Well-being:** These are mainly impacts that result from changes in a caregiver's wealth (income and savings) and economic stability (expenditures and employment) that create changes in assets and resources provided to children.
- **Capability Well-being:** These impacts affect children directly as well as indirectly through direct impacts on their caregivers. Impacts within this area include changes in the child's physical health, psychological health, leisure time, aspirations, skills, and education and knowledge.
- **Relationship Well-being:** These impacts affect children both directly and indirectly through direct impacts on their caregivers. The impacts include changes in the types of interactions and support children receive from adults and other children in the community as well as changes to their social networks. They also include changes in the home and local environments.

To gain an initial understanding of Penda's influence on young children and pregnant women, we conducted a literature review and spoke with thought leaders about types of impacts that occur on children as a result of gaining improved health services. To gain a holistic sense of Penda's impacts on children age eight and under, and to verify, enrich, and identify additional impacts, we conducted in-depth qualitative interviews and focus groups with key Penda stakeholders in Kitengela, Kenya.

Interviews were conducted with people directly impacted by the venture —such as Penda's customers and staff —as well as representatives from their partner organizations and competitors. We also interviewed people aware of the venture who chose not to use Penda's services and external organizations that had experience working with health services and/or children in the 0-8 age group. The interviews were semi-structured conversations comprised of a standardized set of open-ended questions that allowed us to ask follow-up questions to elicit more detail.

We concluded the interview with: “is there anything else related to this topic that you have not shared with us yet?” This encouraged interviewees (see **Table 4** for list of respondents) to share additional information. We also incorporated insights from earlier interviews in later interviews in order to develop a more refined understanding of impacts. Each interviewee received a small thank-you gift.^{xi}

Table 4: Description of Primary Interview Respondents

Type of Respondent	Number of Individuals
Penda Patients	25 ^a
Penda Staff	7
Non-patients	12 ^b
External organizations	8 ^c

^a Includes three focus groups and 13 individual interviews; ^b includes two focus groups and three individual interviews; ^c includes interviews with schools, competitors, community leaders, a church, and partners.



Focus group with Maasai women.

Methodological Limitations

It is important to note that our evaluation of Penda’s impacts on children age eight and under and on pregnant women is qualitative rather than quantitative; our findings are interpreted from the qualitative evidence we collected. Therefore our findings consist of likely outcomes of Penda on its patients, staff and children in the broader community. The methodology used in this study does not allow us to substantiate

^{xi} Before the visit we asked Penda staff about culturally acceptable gifts. They agreed it would be best to give external stakeholders a metal pen with a WDI logo and all other stakeholders either a plastic pen with a WDI logo or canvas bag with the WDI logo.

the impacts beyond attributing them to the respondents. Some of our findings may also suffer from recall inaccuracy, since we did not measure all impacts at the exact time of occurrence. We informed Penda of the different types of stakeholders we would like to interview and relied on Penda to select stakeholders to be interviewed; as a result our sampling may be biased to those who had time or felt strongly about sharing information about Penda.

This study methodology was adapted from a well-developed approach that has been implemented in Africa, Asia, and Latin America. The adapted methodology was designed to present findings with the objective of demonstrating the value of collecting such impact data in more rigorous ways over time. The Capturing Impacts section demonstrates how to measure the most substantial impacts in a rigorous way in order to quantify them.

IMPACT FINDINGS

We explore the impacts of providing access to primary health care on children age eight and younger and on pregnant women living in BoP communities by studying the influence of Penda on its patients. In this specific case, access focuses on availability, affordability, and patient adoption via patient empowerment

and health care education. This definition of access is adapted from Frost and Reich's access to health care framework, which consists of four A's: architecture (policies) that allows for access, affordability, availability, and adoption (patient health education and acceptability of treatment). The degree to which Penda impacts children differs based on their parents' relationship with the venture. Overall, we found the greatest impacts occur on Penda's patients' children. Impacts on employee's children and those in the community are also discussed in this section.

Box 6: A Child's Perspective*

Eight-year-old Shawana is not going to school today. Her father Wambui has been very sick and is showing no signs of improvement even after visiting the government clinic multiple times. While her mother Tabia works at a local kiosk selling vegetables, the money she brings home is not enough to pay the medical bills for Wambui's medical care and school fees for Shawana. She misses sitting with her father at night doing homework or reading the stories she brought home from school. Her mother recently went to Penda to find out the price of consultation for her husband, but realized she would not be able to afford this either. Shawana is very worried about her father and also about her friends moving on to the next grade without her.

** This fictional account is provided to represent a common Penda Health stakeholder situation. The narrative sketch is based on information collected during interviews and focus groups.*

Table 5 summarizes the direct and indirect impacts on children of all Penda stakeholders that we observed on our field visit. Impacts in bold font are explored in detail in the next section, while details of non-bolded impacts can be found in **Appendices A and B**.

Table 5: Summary of Impacts on Children Age Eight and Under Across Penda's Stakeholders

		Economic Well-Being	Capability Well-Being	Relationship Well-Being
Customers' Children and Child Patients	Wealth	• Changes in financial resources available for child's well-being due to changes in household expenditure on health care (Indirect) • Increased financial resources available for child's well-being due to increases in parental income from reduced sick leave at work as a result of better health outcomes from high-quality health care (Indirect)	Physical Health • Improved child health from access to high-quality, affordable health care (Direct) • Improved child health due to health-related trainings partner schools receive from Penda (Indirect) • Improved child health due to parents' increased knowledge of health issues from forming trusting relationships with Penda's Clinical Officers (Indirect) Education/Knowledge • Reduced school absenteeism and ability to spend more time on school work as a result of improved physical health (Direct) Psychological Health • Improved psychological health as children are happier due to improved health (Direct)	Interactions • Children experience better interactions with their parents when their parents experience less tension and stress (Indirect) Support • Increased amount of quality time spent with parents due to improved child and parent health (Indirect) • Parents live healthier lives due to changes in their health knowledge and are able to provide more support to children throughout the child's life (Indirect)
	See Table 6 for a summary of likely impacts of family planning services on children of Penda's patients			
Children from the Community			Education/Knowledge • Increased awareness of health care from the health-related messages such children receive from their friends and friends' parents who are Penda patients (Indirect)	
BOP Staffs' Children	Wealth	• Changes in financial resources available for child's well-being due to changes in parental income (Indirect)	Physical Health • Improved child health due to parents' Penda training (Indirect) • Improved child health through parents' health insurance (Direct)	Support • Increased social capital from parents' increased social network results in increased resources for children (Indirect)

Note: Impacts that are likely to have the largest impact on children are bolded. Bolded impacts are explained in more detail in the following sections whereas explanations of non-bolded impacts can be found in Appendices A and B.

Impacts on Customers' Children and Child Patients

ECONOMIC WELL-BEING

Indirect Impacts

Wealth: Changes in financial resources available for child's well-being due to changes in household expenditure on health care

From costs described during our site visit, Penda's services are less expensive than those of private clinics offering similar quality care, which results in reduced health care expenditures for BoP families. One of the patients we spoke with brought her son to Penda to have him tested and treated for malaria. She said that the prices at Penda are fair, and that she has not returned to the private clinic she used to visit. At the private clinic, the consultation fee ranged between 1,000- 2,000 KES (11-23 USD), while the price at Penda is 150 KES (about 2 USD). She indicated that her health bills are much lower now, and she redirects the savings to food and clothing for her family.⁵²

Besides having more affordable care, Penda patients also save money from accurate diagnoses, which reduces the need for return visits. A woman who brought her child in for malaria treatment said that she also used to take her child to a more expensive clinic. At the other clinic, she had to take her son in multiple times to be treated for the same ailment at a cost of 100 KES (about 1 USD) for transportation each way, 150 KES (2 USD) for malaria testing, and approximately 500 KES (6 USD) for malaria medicine. Now with her savings, she can keep her children in school, buy uniforms and shoes, and provide better nutrition for her children.⁵³ Another mother reported that she used to pay approximately 5,000 KES (58 USD) for flu treatments (including transport, clinic fees, and medicine costs) and now pays about 1,000 KES (11 USD) at Penda (breakdown: 150 KES for consultation and 300 KES for treatment; we assume the mother spends the rest of the money on medicines). She said that she uses the savings to pay for school fees and food.⁵⁴

Although Penda is more affordable than private clinics, if parents replace visits to free or nearly free government clinics with Penda, they spend more on health care per visit, but depending on the situation, could also be spending less overall, due to Penda's accurate diagnosis, resulting in less incurred costs related to return visits e.g. transportation and missed work. A Penda employee told us that some patients continue to choose Penda over free or nearly free government hospitals because the quality of care is better.⁵⁵

Wealth: Increased financial resources available for child's well-being due to increases in parental income from reduced sick leave at work as a result of better health outcomes from high-quality health care

Receiving higher quality care at Penda results in better health and requires taking fewer sick days at the workplace. This results in reduced loss of parental income and in more resources for children's needs. One patient, for example, said that she decided to go to Penda because she had been bleeding due to the family planning method she was using. At Penda, she said the Clinical Officer stopped the bleeding by replacing her contraceptive method with a coil IUD. Where before she had grown weak and was unable to work, she is now strong enough to operate her business, and with her earnings she and her husband can cover basic necessities for the family. Although she had support from her husband's income when she was sick, the couple had to sometimes borrow money to cover their costs.⁵⁶ Another Penda patient said that before coming to Penda, her husband had tonsillitis for an extended period of time, causing him to miss work, resulting in lost income.⁵⁷

CAPABILITY WELL-BEING

Direct Impacts

Physical Health: Improved child health from access to high-quality, affordable health care

Penda accurately diagnoses patients, resulting in shorter duration and severity of illness. When parents take their children to Penda for preventive and curative treatment, their children enjoy better health services.

Penda's friendly service attracts new patients. A patient told us that she would receive unpleasant service at the government health center, as health workers were overworked and rude.⁵⁸ Penda's child-friendly staff is attractive to new patients—as one mother explained, how a person handles a child makes a difference.⁵⁹ Children like going to Penda because the staff is friendly and they receive a balloon. The staff also tapes their drawings up on the wall, and takes the time to watch over children and play with them while their parents are with the Clinical Officer.⁶⁰ Previously, when the children saw a person in a white coat at a clinic they would be frightened and would cry in anticipation of an injection. At Penda, one woman said that before her child can react to his surroundings and the environment, he is given a balloon, and before he knows it, they are already leaving the clinic.⁶¹

Penda accurately diagnoses patients, resulting in shorter duration and severity of illness. One Penda patient, for example, took her daughter to the clinic with an unknown ailment. Her daughter had suffered for a long time and she visited a number of clinics before going to Penda, where she was properly diagnosed and treated for tonsillitis.⁶² Another issue we found during our research was that patients often self-diagnose, and assume that any ailment with symptoms similar to malaria is malaria. They then proceed to get wrong medicines from health care practitioners who provide anti-malarial drugs based on observation, without performing the necessary tests.⁶³

The new information Penda patients learn regarding how to care for themselves during and after their pregnancy affects their child's health. Studies prove that improvements in maternal health, including a mother's nutrition, prenatal care, labor and delivery care, the management of obstetric complications, and postpartum care for mother and newborn, as well as regular checkups and preventive care, have lasting impacts on the health and development of children. The physical health of pregnant women affects their ability to care for themselves, the fetus, and ultimately their newborn child.

Patients are also seeing improved health through earlier detection of illness as a result of Penda's preventive health care services. We found that the clinic's pricing structure encourages people, who would otherwise put off seeking health care, to come in.⁶⁴



Outside a partner school that receives training from Penda.

Education/Knowledge: Reduced school absenteeism and ability to spend more time on school work as a result of improved physical health

Due to high-quality health care and accurate diagnoses, children who visit Penda experience fewer recurrences of the same illness. These children feel healthier, have more energy and can spend more time in school and on homework. One of the mothers we spoke with said her son's school performance has improved since receiving treatment at Penda. With correct diagnosis and treatment, he attends school much more regularly.⁶⁵

Indirect Impacts

Physical Health: Improved child health due to health-related trainings partner schools receive from Penda

As part of its partnership with Penda, a local Kitengela school has received high-quality health care training and has improved the health of its students. The school's cook underwent one month's training at Penda's suggestion. Since then, the school has reduced the amount of starch it feeds children, and provides balanced meals with milk and greens such as kale, cabbage, and spinach. The school also began cleaning its classrooms more regularly to reduce the spread of germs, and uses detergent to clean its toilets instead of regular soap.⁶⁶ Children are taught to wash their hands each time they go to the toilet.⁶⁷ Both the change in nutrition and the hygiene lessons are having a beneficial impact on children's health.

Physical Health: Improved child health due to parents' increased knowledge of health issues from forming trusting relationships with Penda's Clinical Officers

Penda's model is based on providing friendly service. Penda's employees develop close relationships with patients.⁶⁸ Many patients told us going to Penda is like going to see a friend, and that just walking past the clinic is likely to draw a "hello" from a clinic employee; some of them even visit inside to ask a question.⁶⁹



Signs posted in Penda's clinic to encourage patients to ask Clinical Officers any medical-related questions they would like to.

Some patients told us that the situation is much different at government clinics, where, they said, medical personnel do not have the time to provide a proper consultation, treatment plan, or follow-up due to the large number of patients waiting. At Penda, patients see a health worker who takes the time to listen to them and seems genuinely concerned. Patients told us that Penda's Clinical Officers listen and are easier to talk to than any other health care providers.⁷⁰ They also said that since the staff is so friendly, they feel comfortable asking more questions.⁷¹ This type of behavior encourages patients to ask more questions, resulting in increased education to prevent diseases and higher levels of adoption of a treatment plan. One of Penda's Clinical Coordinators said the biggest difference she sees in people using Penda's services versus those who do not, is that Penda customers begin to take ownership of their health as opposed to other places where patients are more passive about their health care.⁷²

Parents learn a plethora of preventive and nutritional information from Penda, which influences how they care for their children.⁷³ Penda monitors child height and weight, for example, to ensure that children grow at the proper pace, and educates parents on appropriate care for their child, based on the child's age.⁷⁴ Parents also learn

new information through Penda's information distribution channels: brochures and SMS. A Penda client, for example, said that the brochures she received help her provide a better diet for her children and care for common illnesses--she now avoids giving her children too many sweets. She has also learned better methods to treat common colds.⁷⁵ Another patient said that he has learned about the importance of maintaining a balanced diet and washing hands before meals, from Penda's weekly SMSes.⁷⁶ One patient learned to wash her hands after using the toilet or changing her son's diaper and before she greets people. She also has learned to wash her children's hands when they return from school, as a result of which, now her children wash their hands more frequently on their own.⁷⁷ Other patients learned to use soap when washing their hands for better hygiene and to prevent illness and disease;⁷⁸ some mothers learned to clean their children's toys to avoid transfer of infection.⁷⁹ Such simple measures go a long way toward preventing illness and disease.

RELATIONSHIP WELL-BEING

Indirect Impacts

Support: Increased amount of quality time spent with parents due to improved child and parent health

As a result of their improved health from Penda's care, parents spend more time with their children, improving the quality of their relationship.⁸⁰ One patient said that feeling healthier allows her to spend more time playing with her children, and she is more peaceful and relaxed.⁸¹ Another mother told us that when she is healthy she is able to wake up early and finish her chores and hence, dedicate time for her children later in the day.⁸² Another mother said that "when the family is healthy, they are happier."⁸³

POTENTIAL IMPACTS OF FAMILY PLANNING

Penda's services are expanding the range of family planning choices offered to the BoP and making family planning an essential component of health care delivery. One interviewee told us, "family planning services that were once only affordable to the wealthy are now offered to BoP patients at affordable rates."⁸⁴ Because Penda delivers all types of family planning methods, including counseling, we expect to see some or all of the impacts listed in **Table 6** on children indirectly and directly. Please note: because we visited Penda in the ninth month of operations, we were unable to fully study the impacts of family planning. While we found negative impacts during our literature review phase, it is unclear what we can apply to the Penda context. For a detailed discussion on the literature review, including sources used, please see **Appendix C**.



A child's drawing posted on Penda's waiting-room wall.

Table 6: Summary of Impacts of Family Planning (FP) Services on Patients' Children Age Eight and Under

	Positive Impacts on Children	Negative Impacts on Children
Economic Well-being	• A BoP household that has fewer children due to FP, can reduce expenditures per child, hence allowing parents to redirect more financial resources towards their children's needs • FP services can reduce infertility, injury, illness, and death associated with unsafely performed abortions and sexually transmitted infections including HIV/AIDS, thus reducing complex medical-related expenditures	• Expenditure on FP services may lead to reduced financial resources available for the child's needs in the short or medium-term • Medical-related expenditures on the physical and psychological side effects caused by FP may reduce financial resources available for the child's needs. Inability or reduced ability to earn income due to physical or psychological side effects caused by FP methods may reduce financial resources available for the child's needs
Capability Well-being	• Spacing between births due to FP ensures that a mother has recovered her mental and physical strength/health and reduces both the mother's and baby's chances of death • When women are given the tools and knowledge to manage their own fertility, it improves their self-esteem and confidence, and they feel empowered in other areas of their lives; this may positively affect their children's psychological state • Delaying the first birth for a BoP woman by FP methods provides additional time for educational attainment, professional skills development, and personal maturity, which indirectly improves her ability to teach knowledge and skills to her child	
Relationship Well-being	• Delaying the first birth for a BoP woman can lead to better relations with her partner as they have more time to spend with each other; a stronger, understanding relationship between parents can increase care and support provided to a child • FP services can prevent pregnancies among teenage girls at high risk, sex workers, and women with HIV/AIDS and/or other health conditions such as malaria and TB who are unable to physically and emotionally care for their child • We hypothesize that a reduced number of children may lead to more quality and quantity time spent with each living child, and hence increase the level of support each child receives • Contraceptive services can reduce population growth rates and hence reduce demographic pressure on the environment and natural resources	• Women using modern FP methods may experience distress due to cultural perceptions such as "more children signifies a source of wealth", which may affect interactions with their child and level of support provided • Modern contraceptive use may interfere with a woman's religious beliefs and cause emotional stress with her household partner/spouse, parents-in-law, practicing children, religious leaders, and the community • Women who use FP methods without consulting their partners may face some form of stress from not seeking her partner's approval, especially in a male-authoritarian household or because there is a subtle power shift when she makes a decision on her own. This stress may affect the woman's ability to care for her child; cause tension between the partners which may affect interactions with their child and level of support provided • Women using modern contraceptive methods may suffer from physical and psychological side effects such as depression, vaginal infections, nausea/vomiting, blood clots, and increased risk of cervical cancer, heart attacks and strokes, and may reduce their ability to spend time with their children or care for their children • Women using modern contraceptive methods must spend time to get the methods and may suffer from shame, guilt, accusations of promiscuity, and dishonor; their psychological health can affect interactions with their child and level of support provided

Impacts on Children From the Broader Community

CAPABILITY IMPACTS

Indirect Impacts

Education/Knowledge: *Increased awareness of health care from the health-related messages children receive from their friends and friends' parents who are Penda patients*

The health messages that Penda delivers to local schools, churches, and mosques, and through SMS to its patients, also reach non-Penda patients. Often patients forward a Penda SMS to their friends, who then change their behaviors, based on this new information.⁸⁵ Children who go to Penda also share information they learn with their friends at school, who sometimes pass it on to their own parents.⁸⁶ Children at partner schools spread the information they learn from Penda to the broader community. As one headmaster explained, “any information that comes to the school goes to the community because children talk, they go and preach any information they learn.”⁸⁷

Impacts on BoP Staffs' Children

ECONOMIC WELL-BEING

Indirect Impacts

Wealth: *Changes in financial resources available for child's well-being due to changes in parental income*

Penda employees said that the wages paid are fair. For some employees, the wage is comparable or slightly lower than at a government health clinic or hospital, while for others, the wage is somewhat higher.⁸⁸ A Clinical Coordinator said that the income she earns from Penda is higher than what she earned in her previous position as a secretary for an export company located just down the road from Penda. With her increased income, she is able to pay someone to watch her son during the day. She is also able to provide additional basic necessities for her child, and even purchase toys on occasion.⁸⁹ The human resource manager said that her income is higher than the amount she earned from her previous position at a local solar company. With the additional income, she has enrolled in classes to become a counselor, and is able to send money for food to her younger brother and sister, who are attending classes at the local university.⁹⁰

CAPABILITY WELL-BEING

Indirect Impacts

Physical Health: *Improved child health due to parents' Penda training*

Penda employees receive training in basic health care as part of their job profile, and as a result, their children's health appears to be improving. The business development officer indicated that with the training he receives, he is able to better care for his five-year-old son's basic health needs.⁹¹ Another staff member at Penda said she has learned first aid and what to do when a child is choking; as a result, she feels better prepared to care for her 1.5 year old son.⁹²

Box 7: An Exploration of Individuals Who Choose Not to Use Penda's Services

While conducting our interviews and focus groups, we found that people who do not use Penda's services mostly access government services and do so for the following reasons:

Government health care services can be obtained for free or nearly free.⁹³ While Penda keeps a tight cost structure to provide affordable services to low- and middle- income consumers, the clinic targets people who can pay at least some amount of money for health care.

Many people are nervous about going to a different doctor or accessing services from a private care provider.⁹⁴

Some people are unsure what to think of Penda due to its size. Since it is a small clinic, people assume it does not have a comprehensive set of services; some persons choose to go to a place that meets all their health care needs--as one non-customer told us, "I like to go to places that are a one-stop shop."⁹⁵

For others, especially in the Maasai community, Penda's location in Kitengela is too far to travel. The people who live in Maasai have to pay 150-250 KES (2-3 USD) each way for transportation to Kitengela.⁹⁶

Penda's staff tracks⁹⁷ the main objections from people who do not use Penda's services and these reasons include: lack of an x-ray and ultrasound services, Penda is not registered with the National Health Insurance Fund (NHIF)^{xii}, no maternity delivery services, and/or dental services.^{xiii}

xii The National Hospital Insurance Fund (NHIF) is the primary provider of health insurance in Kenya with a mandate to enable all Kenyans to access quality and affordable health services.

xiii Penda is working toward building a partnership with a dental office to meet this need.

OPPORTUNITIES FOR GREATER IMPACT

Through the course of our interviews we found that Penda has a broad range of impacts on our target population. Gaining improved quality health care substantially improves the lives of children in the 0-8 age category and also has beneficial impacts on pregnant women. But, we believe Penda has opportunities to further amplify its positive impacts and mitigate negative impacts as well as increase penetration into its existing markets and expand into other BoP regions. Each of our suggestions can generate more business for Penda, but depend on the resources the BoP venture has at its disposal. **Tables 7-9** and **Table 11** present potential ways Penda can enhance, deepen and expand its impacts; prioritized recommendations are bolded.

ENHANCE POSITIVE IMPACTS

Table 7: Opportunities to Enhance Positive Impacts

Opportunity	Potential Response
Preventive health	Explore methods to increase preventive health care visits
Pre-natal health	Explore methods to increase prenatal health care visits during pregnancy
Community awareness	Consider leveraging children in partner schools as informal health ambassadors to spread health care messages to the wider community
Comprehensive research	Continue to capture patient data and track the occurrence of common ailments in the area
Informational brochures	Explore methods to ensure Penda brochures and other printed materials are more accessible to the general population
Friendly customer service across businesses in the community	Explore ways to track the frequency of and improvements in friendly customer service at other local businesses specifically due to Penda's emphasis on a friendly culture at the clinic

Prioritized recommendations are bolded.

- **Explore methods to increase preventive health care visits**

One of the major trends in health care delivery in Kenya is to seek medical services only when ill. Increasing preventive health care visits for children age eight and under will require a shift in thinking, i.e. a structural change in thought that can be very challenging, resource-intensive and time-consuming. Through its existing marketing efforts and community outreach, Penda should strengthen messaging to teach communities that children 'still' need to visit the doctor, even though they are not showing any symptoms for routine health exams to reduce risk of illness.⁹⁸ Some additional suggestions include: educate schoolteachers on the benefits of preventive care such that they spread the message to parents during parent-teacher meetings; remain engaged with large health data sets such as DHS reports that provide data from Nairobi to identify common diseases/highest burden affecting children (especially those under age five) and develop Penda's preventive health care services marketing campaign on this information. Another suggestion is a peer-to-peer education campaign where 'health ambassadors', who are older children e.g. in their teens, spread the message on benefits of preventive health care to younger children in the community. These children then transfer the knowledge to their parents and request preventive health checkups.

Penda can also continue to inform patients and community members of common ailments, what symptoms to look for, how to recognize and communicate symptoms to health care providers and what steps to take to recover.

- **Explore methods to increase prenatal health care visits during pregnancy**

Many women we spoke with expressed a desire for holistic care through the different stages of their life --targeted health care as a young woman, during pregnancy, and then as a mother. In addition to preventive health care visits for children 0-8, Penda can focus on increasing preventive health care visits for pregnant women via customer awareness and social marketing. For instance, Penda could set up a prenatal ambassador program where a Penda employee advertises “Ask Me, If You Are Pregnant” both at the clinic and while visiting community events and common spaces.

During our Maasai focus group, we found that a number of pregnant women do not go to health clinics during their first trimester. They wait until they are further along in their pregnancy so that they can save money.⁹⁹ In such cases, Penda could increase marketing efforts via ambassador programs (described above) and campaigns with catchy titles such as “Check Early, Check Often!” Penda can also leverage partnerships with organizations that work specifically for the betterment of vulnerable and indigenous populations to provide affordable prenatal health care.

- **Consider leveraging children in partner schools as informal health ambassadors to spread health care messages to the wider community**

Children are good informal ambassadors of information because they are generally excited to share the messages they receive with their parents and their friends.¹⁰⁰ The information that primary school children receive from Penda includes messages such as the importance of washing hands before eating, eating a balanced diet, and the importance of getting exercise. Penda can use its existing relationships with local schools to increase the number and quality of messages it delivers to children. It can also work to increase the number of schools it partners with, so more children have access to information on good health care practices. Penda should also work to develop messaging or reward programs for the children that stress the importance of carrying out the actions associated with the information, because information alone does not equate to good health—the associated action must be carried out to ensure beneficial outcomes.

- **Continue to capture patient data and track the occurrence of common ailments in the area**

Penda should continue to track its patients' case histories, including type of care provided (via the designated Excel sheet), and effectively disseminate this information among relevant staff members. Penda's medical experts should instruct staff on how to use this data e.g. track performance targets, identify outbreaks of diseases.

We also suggest Penda use this information to spread knowledge among patients and community members by sending an SMS alert when Penda sees an outbreak of illness such as the flu or common cold and instructions on reducing the likelihood of falling ill. We also suggest that Penda, at its discretion, share information with the public sector health care providers to develop strong working relationships. Penda may also want to explore ways to supplement its existing technology framework to capture, analyze, and automatically report data and inform all relevant stakeholders—staff members, medicine suppliers, government officials—of new emergent outbreaks of diseases.

- **Explore methods to ensure Penda brochures and other printed materials are more accessible to the general population**

Most of Penda's health education and marketing information is currently printed in English. We recommend that the organization make the information more accessible to everyone within the local population by also printing the materials in Swahili. Penda could also explore making the information more accessible to illiterate populations by including more graphics and less text.

- **Explore ways to track the frequency of and improvements in friendly customer service at other local businesses specifically due to Penda's emphasis on a friendly culture at the clinic**

Penda's patients who work in local businesses see Penda's commitment to friendly customer service and experience the benefits it entails. A National Bank manager, for example, visited Penda and was so impressed by the friendly service that he called a staff meeting at his branch to discuss the bank's service quality and to brainstorm how to be friendlier to patrons. Penda's partners also appear to be taking similar cues, as do local businesses (barber and beauty shops).¹⁰¹ A suggestion to track

this change is asking patients who work at other businesses, in both senior and junior roles, if they have discussed “the Penda way to do business” at their job and seen any change because of it. We believe this data should be captured to make a case for friendly customer service at all businesses in the community--friendly culture benefits children by improving the quality of their interactions with community members and teaching them how to be polite by example.

REDUCE NEGATIVE IMPACTS

Table 8: Opportunities to Decrease Negative Impacts

Opportunity	Potential Response
Family planning	Explore what the negative impacts of family planning services are on women who seek them at Penda
Equipment available and services offered	Consider introducing necessary medical equipment and services to attend to all needs of existing patients and their families

Prioritized recommendations are bolded.

- **Explore what the negative impacts of family planning services are on women who seek them at Penda**

We strongly suggest that Penda explore the range of potential negative impacts of family planning on women who seek them. While we found negative impacts during our literature review phase, it is unclear which can apply in the Penda context. We conducted our site visit in the ninth month of Penda's operations and were unable to fully study the impacts of family planning on patients. Penda should dedicate resources to conduct this research, so it can develop informed solutions to reduce the specific negative impacts it encounters. To learn more on this, Penda should research programs of international development organizations that specifically implement family planning services, such as Marie Stopes International, Family Health International, and Population Services International. We encourage Penda to contact experts in this sector to develop a robust monitoring and evaluation plan and think creatively regarding engaging family members in the decision-making process in response to any negative impacts found (e.g. get a male community member to encourage other men to use family planning).

- **Consider introducing necessary medical equipment and services to attend to all needs of existing patients and their families**

Penda lacks an X-ray machine, ultrasound equipment, and an infant clinic. Penda is currently partnering with the International Partnership for Innovative Healthcare Delivery (IPIHD) to obtain some of these resources. We recommend Penda continue to explore additional partners and investors to assist with obtaining equipment and resources to provide missing services.

INCREASE PENETRATION INTO CURRENT MARKETS

Table 9: Opportunities to Increase Market Penetration

Opportunity	Potential Response
Child turnout	Explore methods to increase the number of child patients at Penda
Impacts of free services	Explore the impact of providing free services at events that are run either by Penda or by partner organizations
Access to services	Consider increasing the number of hours the clinic is open
Awareness of services offered	Explore methods to share information about all services available at Penda
Awareness of location	Provide Penda staff with business cards to be distributed to potential patients
Communities outside Kitengela	Hold community events and visit business kiosks outside Kitengela to expand marketing on Penda's services, and information on general preventive health care
Communities outside Kitengela	Continue to host mobile clinics outside Kitengela, including in areas with predominantly Maasai populations

Prioritized recommendations are bolded.

- **Explore methods to increase the number of child patients at Penda**

To attract more children to the clinic, Penda must focus on attracting their mothers, in addition to making the clinic more child-friendly. A marketing campaign targeting mothers can be developed with guidance from sales and marketing experts in the health care sector. This can include pamphlets with instructions on infant health needs during each weekly and monthly stage of the child's development.¹⁰² This information could include immunization dates, breast feeding tips, weight and height tracking, and nutrition information.

To remind parents of the importance of child health when they are outside the clinic, as well as to attract new patients, Penda could create wall charts for families to hang in their homes to track their child's progress. The charts serve as an important reminder of what steps to take to enhance a child's health at different periods of childhood development. At the same time, the chart could serve as an advertisement for Penda that visitors see.¹⁰³ Such a chart would also likely help Penda to increase interest in preventive care and demand for associated services.

To make the clinic space more child-friendly, Penda can show cartoons on the television in the waiting room or make a floor area for children to sit and play.¹⁰⁴ The BoP venture could also consider providing employees with colorful lab coats.¹⁰⁵

- **Explore the impact of providing free services at events that are run either by Penda or by partner organizations**

Penda provides free screenings and other health care services at events funded by partners in order to advertise its name and services. Penda should explore the impact from providing free screenings --what percentage of individuals who attend these events become regular patients at Penda, or only wait for such free events. Do they continue to use another health care provider even after they have attended a Penda free screening event? Penda should ensure that such events are effective advertising campaigns, and do not distort the market.

- **Consider increasing the number of hours the clinic is open**

Penda can meet more families' needs by keeping the clinic open 24 hours a day. Being open around the clock will appeal to new patients, especially ones with small children, as it is comforting to know you have a medical provider who is available at odd hours. We learned during our site visit that some private clinics in Kitengela remain open 24 hours a day, seven days a week. For Penda to do the same, it will need to explore how to ensure safety and security of its staff during the night. Also, Penda should

conduct a cost-benefit analysis to confirm that remaining open around the clock is a net-positive revenue-generating activity.

- **Explore methods to share information about all services available at Penda**

During our interviews and focus groups, we found that a number of patients are unaware of the full range of services that the clinic offers. We recommend that the clinic provide new and existing patients with information on the full range of health care services, including availability of family planning counseling (dedicate five minutes in the visit to this item and share promotional materials such as booklets/pamphlets), as well as promote this information at community events.

- **Provide Penda staff with business cards to be distributed to potential patients**

Penda staff members can increase the venture's reach into communities by providing potential patients with the name, location, and a map of the clinic's location via business card and, if cost-effective, by sending an SMS with the address in text format. Many non-Penda patients we spoke with had heard of Penda but did not know where it was located. All employees should be provided with business cards that contain this information so they can distribute them to potential patients. They should also be trained to send an SMS from their phones to potential patients (and be reimbursed by proving SMS delivery via their phone's outbox messages).¹⁰⁶

- **Hold community events and visit business kiosks outside Kitengela to expand marketing on Penda's services, and information on general preventive health care**

Penda markets outside the clinic twice a week, talking to potential patients about the services the clinic offers, and educating the general public on the importance of preventive health care. We recommend that Penda explore ways to increase its reach by going to communities outside Kitengela and leaving informational leaflets about Penda at business kiosks in those areas.¹⁰⁷

- **Continue to host mobile clinics outside Kitengela, including in areas with predominantly Maasai populations**

We encourage Penda to continue to host mobile clinics beyond Kitengela. The makeshift clinic that Penda hosted in Olturoto, a predominantly Maasai village about 30 kilometers south of Kitengela, was visited by 39 patients. Besides reaching communities that are underserved, mobile clinics can address the needs of patients who live too far from the Kitengela main-road clinic and cannot bear the cost of transportation. **Table 10** lists the average cost of transportation to Penda's clinic from different distances via different modes of transportation.¹⁰⁸

Table 10: Average Cost of Transportation to Penda's Clinic via Different Modes of Transportation

From a distance of:	Mode of transportation	Price (in KES and USD) per person ¹⁰⁹
Up to 10 KM	Motorbike (unsafe method)	100 KES (1.14 USD)
Up to 10 KM	Tuk-tuk	100 KES (1.14 USD)
Up to 10 KM	Public bus	20 KES (0.23 USD)
20 KM	Motorbike (unsafe method)	200 KES (2.28 USD)
20 KM	Public bus	20 KES (0.23 USD)
20 KM	A tuk-tuk does not go this far out from the main road	N/A

To overcome logistic challenges of such events, Penda can seek guidance from organizations whose business model is based exclusively on mobile clinics, such as Mister Sister in Namibia (<http://www.mistersisterclinics.org/>).

EXPAND TO NEW POPULATIONS AND MARKETS

Table 11: Opportunities to Expand to New Populations and New Markets

Opportunity	Potential Response
Ability for less wealthy to afford health care	Explore ways to connect potential patients with financing for health care

Prioritized recommendations are bolded.

- **Explore ways to connect potential patients with financing for health care**

Penda could explore the Aravind Eye Care model of subsidizing costs to increase its reach through partnerships that can provide financial support to those who cannot afford health care services. Such partnerships would allow the BoP venture to increase the number of women and children using preventive health services. Penda can also explore partnerships with savings groups (for example, in rural areas- VSLA or VSLA-plus groups) that advocate and promote household savings. Penda can also explore partnerships with banks or employers who encourage their clients and employees to set aside savings for health.

CAPTURING IMPACTS

In this section, we outline at a high level how Penda can quantify the set of impacts identified in the Impact Findings section and move toward regularly measuring its outcomes on its stakeholders and their children ages eight and under. We suggest that Penda consider conducting its own study or commission a study from an outside source (preferred method) to learn more about its impacts. By conducting a thorough assessment of its impact, Penda can:

- **Assess opportunities to enhance its value to its stakeholders.**
- **Create additional revenue generating models to better meet the needs of stakeholders and seek partnerships to facilitate them.**
- **Demonstrate the success of its business model to external stakeholders.**

MOVING TOWARD A SYSTEMATIC IMPACT ASSESSMENT

We recommend that Penda systematically measure its impacts on its stakeholders' children in the 0-8 age category, as well as pregnant women. Although Penda currently tracks key indicators - which are largely output-based, such as number of patients per month, number of screenings, number of preventive cases caught that need treatment, number of women using family planning services, number of people supported by employees, among others, taking a deeper assessment of its impact will allow Penda to gain a more nuanced understanding of the needs of young children as well as how these needs change over time.

For instance, Penda should consider identifying if it is increasing the number of women using family planning or instead, helping women switch to methods that work better for them or rather, just supplying women with family planning who would have obtained it elsewhere. An impact assessment would also allow Penda to gain a richer understanding of how this change in family planning affects other aspects of women's and their families' lives. Rather than focus on measuring the impact it has on all its stakeholders' children, we recommend that Penda start by first measuring its impacts on its patients' children and on pregnant women. Once Penda develops a regular system to capture this, the BoP venture can, in a targeted manner, measure its impacts on BoP employees' children and those in the broader community.

In order to capture Penda's impacts on children in a manageable way, we suggest that the company develop a short, mostly quantitative survey of core impact areas (impacts bolded in **Table 5**) affecting children age eight and under. The survey should be distributed to new patients at three key intervals: 1) the initial visit at Penda Health, 2) a month after the first visit, at the respondent's home, and 3) six months after the first visit, also at the respondent's home. This schedule of surveys will help Penda capture both short- and long-term impacts and demonstrate changes in impacts over time. Recording GPS coordinates will help interviewers find respondents' homes at later data collection times. Penda should try to continue to collect impact data from patients who stopped coming to Penda.

We recommend that the survey be administered by interviewers rather than filled out by the patients.^{xiv} This will help to ensure respondents fully understand the questions and do not leave questions blank. We also recommend that Penda hire a third party to conduct the interviews, to reduce response bias. A less expensive alternative would be to have Penda conduct the surveys. If Penda chooses the latter option, we recommend that it still commission an independent assessment of its social impacts every few years to ensure objectivity of the findings. Regardless of who conducts the surveys, Penda should hold a brief workshop to ensure that the interviewers understand the purpose of each question.

Based on the likely direct and indirect impacts we found in the field on customers' children, we identified core impact areas for Penda to consider measuring using subjective questions, many of which can be

^{xiv} Children can be patients as well at Penda. In this case the interviewer should ask survey questions to the child's parents to ensure objectivity of findings.

quantified using Likert scales of 1-5 (see **Appendix D**). Since the impacts are likely to vary by child's age, we specify which questions should be asked according to age group. The survey should begin with a question about the number of children in the home and their ages so the interviewer knows which questions are appropriate. During the survey, the interviewer should observe each child's appearance and behavior, if present. At the end of the survey, the interviewer should ask an open-ended question to capture any other differences parents have noticed in their children or in the mother, if she is pregnant. The questions in **Appendix D** are suggestions, and should be pretested with customers for adaptation to the local context.

We suggest that Penda continue to use the BoP IAF to systematically capture its impacts on patients. The tool will provide a structure through which Penda can categorize and track new findings on impacts derived from its surveys. Penda may also find the tool helpful if the organization decides to capture impact data on its staff's children and children in the broader community in the 0-8 age group. A benefit of using the BoP IAF is its flexibility—Penda can customize the tool to its needs, which will allow the organization to measure its impacts in a manageable way.

CONCLUSION

Providing access to quality primary and preventive health care (immunizations, health checks, and health information) can increase quality of life for low-income women and their families. The main impacts we found on Penda's customers' children are improvements in health due to vaccinations, diagnoses and treatment by Penda, their parents' improved health due to Penda's services, and the parents' actions based on health care information they receive from Penda. In addition, children who attend schools that partner with Penda have access to high-quality health care and information regarding the same. Improved health also leads to reduced school absenteeism and the ability to spend more time on school work. Our site visit also informed us of a change in financial resources available for a patient's children: if parents replace visits to free or nearly free government clinics with Penda, they spend more on health care per visit, but depending on the situation, can also spend less overall, due to Penda's accurate diagnosis, resulting in fewer return visits and thus lower costs (including for transportation and lost income from missed work). If Penda's customers were previously visiting more expensive private health care providers, increased savings can benefit children if redirected to their needs. Improvements in the health of pregnant women increase their ability to care for themselves, the fetus, and ultimately their newborn child. Penda's focus on preventive health and screening allows parents to live healthier lives and provide more support to children. During our interviews and focus groups, we also learned that health care spending does not seem to be prioritized by gender, but rather by the severity of sickness, with priority given to the most vulnerable — children age five and under.^{110, 111}

In addition to patients' children, Penda positively impacts the children of its staff members and those within the broader community. Employees' children benefit from the additional income their parents earn, when their parents contribute toward their immediate needs like food, clothing, and educational opportunities. The ongoing health training Penda staff members receive improves their children's health accordingly. Children of the broader community are impacted, indirectly, through contact with patients (or their parents' contact with patients): patients share health information they receive from Penda with others in the community. Because we visited Penda in the ninth month of its operations, we were unable to fully study Penda's impacts on women who utilize their family planning services.

Based on our findings, we provide methods and questions Penda can use to measure its impact on children and pregnant women regularly. We also provide recommendations to Penda to enhance and deepen its impact on its current stakeholders' young children and to expand to new markets to improve more children's lives. Our key recommendations include:

- **Penda should explore methods to increase preventive health care visits among children as a major trend in Kenya is to seek medical services only when ill. In addition, Penda should explore methods to attract more children overall to the clinic by focusing efforts on attracting their mothers along with making the clinic more child-friendly**
- **Penda should explore creative methods and marketing to increase visits by pregnant women to ensure healthy development of the fetus**
- **Penda should explore leveraging children in partner schools as informal health ambassadors to spread health care messages to the wider community**
- **Penda should explore what are the negative impacts of family planning services on women who seek them at the venture**
- **Penda can consider introducing necessary medical equipment and services to attend to all health needs of patients and their families**
- **Penda should explore the impact of providing free services at events that are run either by Penda or by partner organizations**
- **Penda should explore ways to connect potential patients from the BoP with health care financing**

Together these suggestions can help Penda improve its operations to better meet the needs of children.

APPENDICES:

APPENDIX A: ADDITIONAL IMPACTS ON CUSTOMERS' CHILDREN AND CHILD PATIENTS

Impacts that occur on customers' children and child patients that are not bolded in **Table 5** are explored here:

CAPABILITY WELL-BEING

Direct Impacts

Psychological Health: Improved psychological health, as children are happier due to improved health

Just like adults, when children are healthier their mood and their outlook on life improve. One of the parents we spoke with said that when her child receives the appropriate health care through Penda and is feeling healthy, she is more vibrant and active.¹¹² Children are able to eat properly and play when they feel healthy. Parents notice this especially when their child's fever reduces.¹¹³ Parents also notice that their child's mood improves when visiting Penda because employees are friendly and give balloons.¹¹⁴

RELATIONSHIP WELL-BEING

Indirect Impacts

Interactions: Children experience better interactions with parents when their parents experience less tension and stress

Parents said that they feel more at ease when their children are healthy, when they are experiencing fewer illnesses, and when they spend less on health care.¹¹⁵ On the other hand, emergency contraception is a very sensitive issue and talking about it can cause stress. One patient said that it is unusual to find staff you can talk to about such issues. At Penda, because she can speak freely, she feels more calm discussing such private issues.¹¹⁶ Stress and tension due to health or financial problems can cause or exacerbate parental depression and other types of mental illness and can inhibit a parent's ability to care for children. Depressed parents, for example, may be less emotionally invested in their children's lives. Children with parents who suffer from depression are at increased risk of developing social, emotional, and/or behavioral problems.¹¹⁷

Support: Parents live healthier lives due to changes in their health knowledge and are able to provide more support to children throughout the child's life

Mothers in the communities Penda serves, are beginning to live healthier lives from learning to detect diseases earlier to reduce any potential negative effects on themselves and their families. Penda goes into the community weekly, providing BoP residents with brochures and talking about measures they can take to prevent illness and disease. As a result of Penda's work, more women are getting screened for breast and cervical cancer, and their knowledge about nutrition is improving. Many of the women we spoke with said that they are benefitting from the education they receive from Penda on breast cancer.¹¹⁸ One woman said that before going to Penda she did not know anything about the disease. At Penda, she received informational pamphlets and now does a self-exam once a month.¹¹⁹ In addition to Penda's pamphlets, its educational outreach is creating a shift in the mindset of patients and people within the broader community. In some of the Maasai areas we visited, much of the population does not believe that cancer exists. Instead, they view the disease as a curse. After interacting with Penda, patients learn that cancer is indeed a disease that should be treated,¹²⁰ as well as, ways to reduce their risk of incidence.

In many Kenyan BoP communities, there is a stigma surrounding family planning and contraception. Penda's Clinical Officers often have to tread delicately to introduce these subjects, but their talks in the community and one-on-one with patients are changing perceptions, and are prompting women to lead

healthier lives. Many Maasai women are beginning to realize topics surrounding their sexuality are not taboo when they see an institution that is open enough to address these issues. A woman's ability to choose if and when she would like to become pregnant has a direct impact on her health and well-being. A healthy mother who has control over her reproductive health can ensure her children are provided for, and grow into healthy, productive adults. According to WHO, an estimated 222 million women and girls in developing countries lack access to contraceptives, information, and services. WHO estimates that maternal deaths could be cut by a third if all women who wanted contraception had access to it.¹²¹

APPENDIX B: ADDITIONAL IMPACTS ON BoP STAFFS' CHILDREN

Impacts that occur on employees' children that are not bolded in **Table 5** are explored here:

CAPABILITY WELL-BEING

Direct Impacts

Physical Health: Improved child health through parents' health insurance

Penda employees receive health care for their families as an employee benefit. Staff members receive insurance for their families for inpatient services via the National Health Insurance Fund.¹²² They also receive free medical care for outpatient services at Penda.

RELATIONSHIP WELL-BEING

Indirect Impacts

Support: Increased social capital from parents' increased social network results in increased resources for children

During our interviews with Penda staff we found that they enjoy working for the clinic not because it necessarily offers higher wages than government or other for-profit clinics, but because of the friendly, family-like culture the clinic offers. Penda places customer service above all else, and employees told us that they appreciate being able to develop close, caring relationships with patients.¹²³ These new relationships expand the size of Penda staff members' social networks. Over time these networks may benefit their children via access to new resources or opportunities.

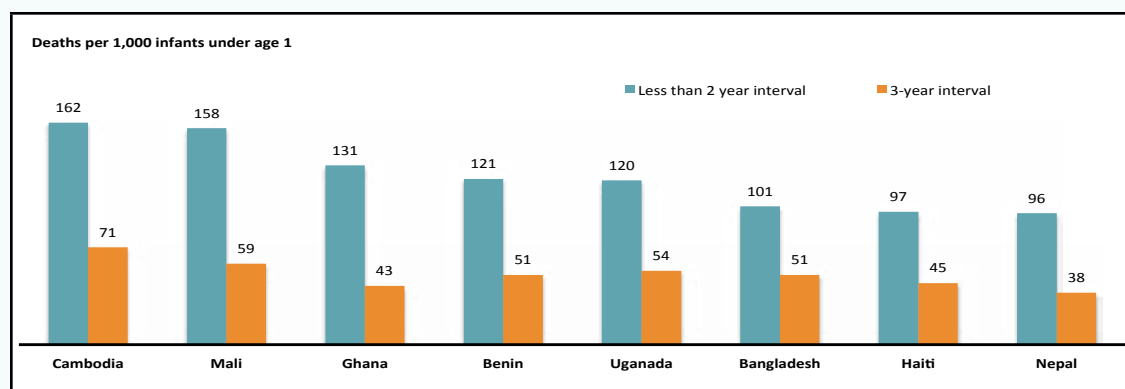
APPENDIX C: IMPACTS OF USING MODERN FAMILY PLANNING (FP) SERVICES ON WOMEN AND THEIR FAMILIES

Family planning (FP) guidance/practice/policies can have positive and negative consequences on low-income households and hence must be studied carefully. On conducting a literature review of FP impacts, we found the following potential positive and negative impacts:

POTENTIAL POSITIVE IMPACTS OF USING MODERN FP METHODS

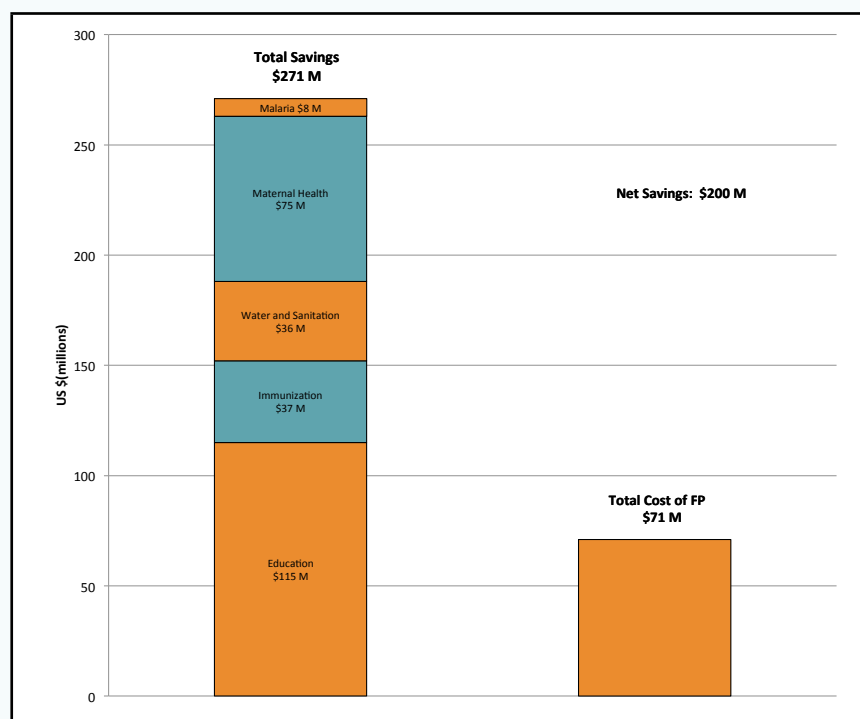
- 1. Positive direct economic impact on a household on limiting births:** If FP services are accepted, a low-income household having fewer children can reduce its economic burden, hence allowing the household to invest more in housing, health care, child care, nutrition, and schooling.¹²⁴ Large family sizes can also create competition on spending on children (e.g. sons are sent to school versus daughters or first born versus youngest) hence, lesser number of children can also lead to gender equality/universal schooling.¹²⁵
- 2. Positive economic impact of reducing unwanted pregnancies:** FP services can reduce infertility, injury, illness, and death associated with unsafely performed abortions and STIs (sexually transmitted infections including HIV/AIDS), and hence reduce expenses associated with these health issues (i.e. money spent on out-patient care, hospitals, clinics, midwives, quacks, etc., as well as loss of income due to mortality and morbidity (DALYS)).¹²⁶
- 3. Positive impact on capacity and well-being of a woman:** When women are given the tools and knowledge to manage their own fertility, it increases their self-esteem and confidence and they feel empowered in other areas of their lives (e.g. take on leadership roles in community management and advocacy, take on secondary income-generating activities, participate directly in the labor market etc.).¹²⁷ Similar results were found in a study conducted by Cleland et al. (2006): FP has been shown to contribute to women's empowerment and achievement of universal primary schooling.¹²⁸
- 4. Positive benefits of timing and spacing births through FP services:** Spacing between births ensures that a mother has recovered her mental and physical strength/health and reduces both the mother's and baby's chances of death. It also ensures that the newborn receives adequate care (e.g. breastfeeding reduces chance of death in the first year of life by half¹²⁹) to grow into a healthy child. **Figure C1** shows differences in infant mortality rates within the first year of life between babies born within a two-year interval and those born after a three-year interval.

Figure C1: Infant Mortality in the First Year of Life, by Birth Interval¹³⁰



5. **Positive benefits of preventing high risk pregnancies:** FP services can prevent pregnancies among teenage girls at high risk (especially slum dwellers or those who do not attend school), sex workers, and women with HIV/AIDS and other health conditions such as malaria and TB who are emotionally or physically unable to care or pay for their child's needs (e.g. schooling, health care).¹³¹
6. **Positive impacts of delaying first birth:** Our hypothesis on delaying first birth by women includes additional time for educational attainment, professional skills development, personal maturity, and improved relations between spouses/partners (as they get to know one another better before the birth of a child).
7. **Reduction in mortality rates for mothers and children:** Researchers estimate that universal FP could save the lives of approximately 175,000 women per year, increasing birth intervals to three years and preventing 1.8 million deaths of children under five (as found in 2007).¹³² WHO studies note that the promotion of FP in countries with high birth rates has the potential to avert 32% of all maternal deaths and nearly 10% of childhood deaths (as in 2006).¹³³ The Population Reference Bureau states that FP services can prevent as many as one in three maternal deaths.
8. **Reduction in poverty across a developing country/region:** Most scholars agree that poverty and high fertility are causally interconnected either directly or indirectly. High birth rates are also associated with high illiteracy rates.¹³⁴
9. **Positive cost-benefit analysis:** Depending on what services are offered, each dollar spent on FP can save governments between 4-31 USD in spending on health, housing, water, sewage, and other public services.¹³⁵ For example, for every dollar spent on FP services, the Kenyan government would save 3.82 USD from saved expenses in other sectors.¹³⁶ **Figure C2** breaks down savings from different sectors due to FP services in Kenya from 2005-2006.

Figure C2: Social Sector Savings from Investing in FP, Kenya 2005-2006¹³⁷



- 10. Contraceptive services can reduce fertility rates in poor rural populations; reduced demographic pressure decreases the burden on national expenditures for health, education, and social services, and reduces pressure on the environment and natural resources:** In a study conducted in 1978-79 in Bangladesh, researchers found a direct relationship between age of women and program impact (reduction in fertility rates through modern contraception). That is, birth rates reduced with increasing age for women in treatment areas (see **Figure C3**). **Figure C4** shows that these results are replicable in different regions (Kenya and over time). It is important to note that early adoption is seen among rural couples but sustained use requires skilled counseling, rigorous follow-up, treatment of side effects, and ancillary health services.¹³⁸

Figure C3: Reduction in Birth Rates with Increasing Age for Women in Treatment Areas, 1978-79, Bangladesh¹³⁹

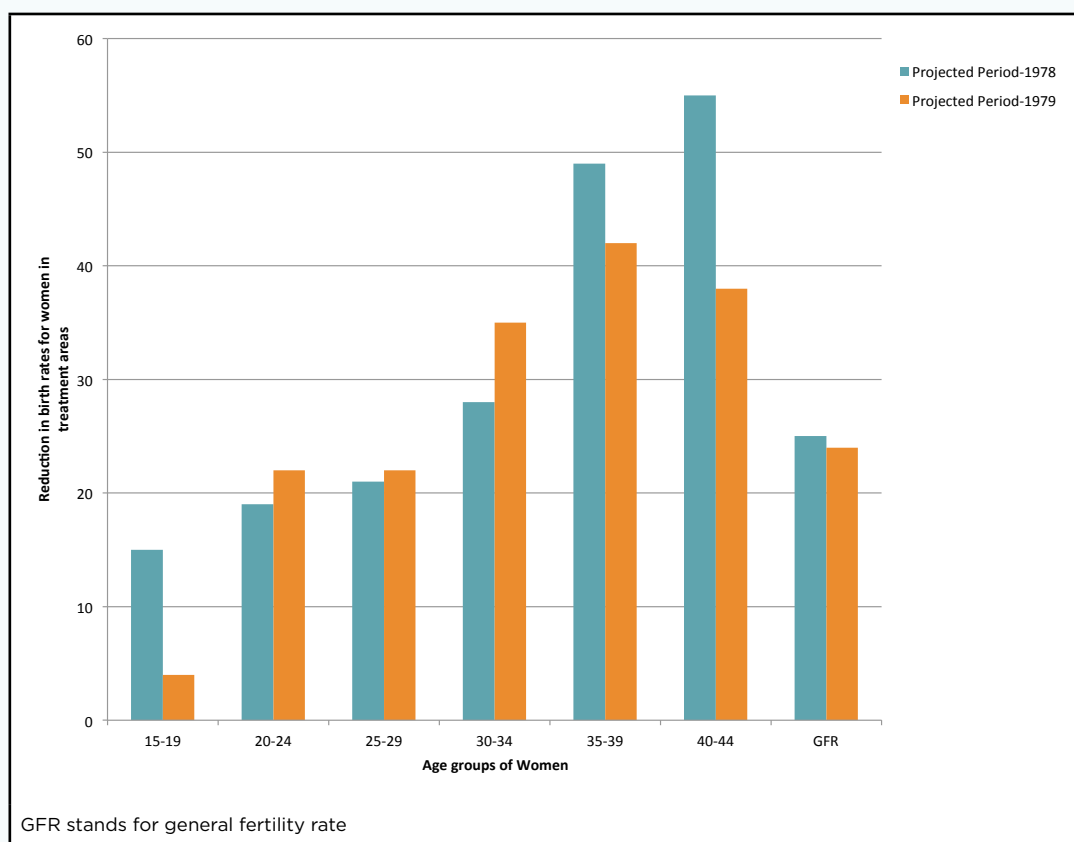
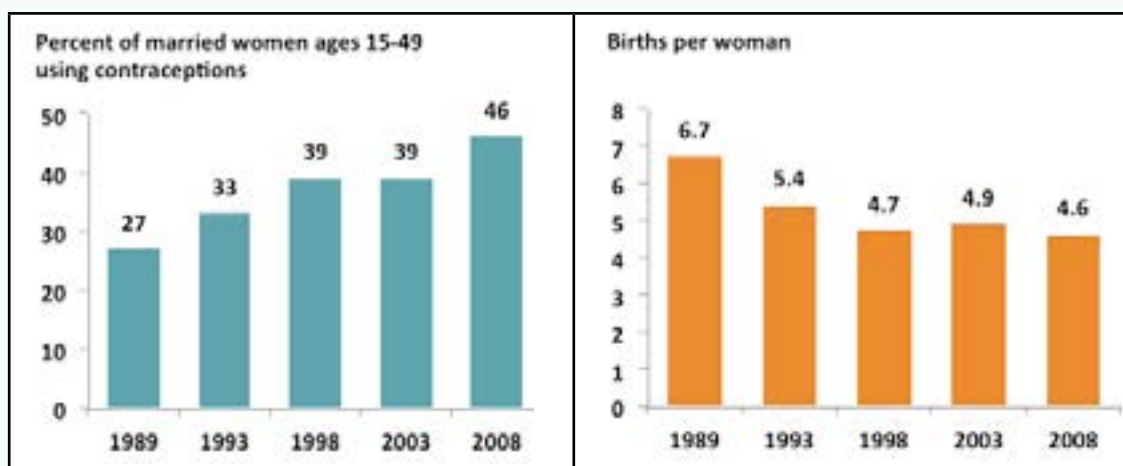


Figure C4: Trends in Contraceptive Use among married women and births per Woman from 1989-2008 in Kenya¹⁴⁰



POTENTIAL NEGATIVE IMPACTS OF USING MODERN FP METHODS:

- 1. Distress caused by using FP services due to cultural perceptions:** In a study conducted in the slums of Nairobi, Mombasa, and Kisumu, Kenya, in 2011, researchers found a cultural perception among some households that more children signified a source of wealth; another perception was that those who had girls wanted to keep trying for boys, to satisfy their parent-in-laws, who preferred the boy-child. Based on this data, our hypothesis is that if FP services are sought, women may face some form of stress (e.g. tensions in the household, domestic violence and/or shunned by society) etc.¹⁴¹ The FHI Impact of Family Planning and Reproductive Health on Women's Lives: A Conceptual Framework Report states "the same woman may be negatively perceived by the community for failing to produce as many children as expected."
- 2. Stress caused due to a shift in the balance of power/not seeking approval in a male-dominated household:** A study in Kenya (Nairobi, Mombasa, and Kisumu) found that 56% of women sought approval from their partners before using contraceptives, 23% did not bother to ask their partner, and 21% were uncertain. This leads us to hypothesize, "the 44% of women who did not seek approval faced some form of stress due to either not seeking approval in a male-authoritarian household or because there is a subtle power shift when the woman makes a decision on her own without consulting the man".¹⁴²
- 3. Negative economic impact on households:** Expenses for FP services, including purchase, transport, training and fees for medical tests can decrease household financial resources in the short term and redirect money away from other needs such as rent, clothing, nutrition, schooling, etc.
- 4. Potential side effects of modern contraceptive methods:** Failure to prevent unwanted pregnancy is a potential side effect of all forms of birth control--modern or traditional. Birth control pills, injections, and patches are hormonal options with side effects such as depression, vaginal infections, nausea/vomiting, blood clots, and increased risk of cervical cancer, heart attacks, and strokes.¹⁴³ Urinary tract infections are more common with the use of diaphragm and spermicides. Diaphragms and cervical caps do not protect against HIV/AIDS.¹⁴⁴ IUDs may increase the chances of developing vaginitis, severe bleeding, cramping pain, and uterine perforation.¹⁴⁵ All conditions may limit a woman from carrying out her daily activities such as child-rearing, income generating, and participating in community management and activism.¹⁴⁶ They may also require medical attention and hence related expenses will

lead to a reduction in household financial resources. Taking sick days at work may also reduce income earned.

5. **Modern contraceptive use may interfere with religious beliefs and cause emotional stress to the woman with her partner/spouse, parents-in-law, practicing children, religious leaders, community, and with oneself:** We hypothesize that using modern contraceptives, which may not be allowed by some religions, may cause tensions between the woman and her family, religious elders and/or the community. In addition, such women may be shunned by family members, religious houses of prayer, and/or society, and they may suffer from doubt and conflict with oneself.
6. **Internal psychological impacts on women:** Women may suffer from anxiety about time consumed on obtaining FP services, side effects, shame, guilt, and feelings of “promiscuity,” dishonor, according to research carried out by Stycos in 1995.¹⁴⁷

APPENDIX D: ADDITIONAL IMPACT ASSESSMENT SUGGESTIONS

These questions provide a starting set that we recommend Penda use to regularly capture its impacts on patients' children. The questions below illustrate how Penda could quantitatively measure some of its key impacts on children. These questions have not been tested and should be reviewed for reliability and for adaption to local context.

The survey should be structured in order to ensure comparability across respondents. Therefore all surveys should include the same questions, so changes in the customers' children's lives can be compared and measured over time. However, impacts will likely vary based on the age of the child and whether someone in the household is pregnant. Therefore we suggest that the surveys clearly mark questions intended for older children and use skip patterns to only ask questions that apply to the child based on age and whether there is a pregnancy in the household (see **Table 12**). The survey should begin with a question about the number of children in the home and their ages so the interviewer knows which questions are appropriate.

Table 12: Suggested Impacts to Measure and Potential Questions

	Impact	Potential Question	Question Type
Economic Well-Being	Wealth	What job and other sources of income does the male head of household have?	
		What job and other sources of income does the female head of household have?	
		What is your average weekly income? Please include all sources of income.	
		In an average week, how much money do you spend on your child? How much of that is health-related expenditures? How much do you spend on health services for your children on a weekly basis?	Ask caregiver about both younger and older children; ask pregnant women
		Over the past week to what extent were you able to meet your child's clothing needs?* <i>Scale: 1=Not at all, 2=A little, 3=A moderate amount, 4=Very much, and 5=An extreme amount</i> <i>*This question can be repeated to ask about other material needs a child has, such as school supplies.</i>	Ask caregiver about both younger and older children
		In an average week, how stressed are you about your financial situation? <i>Scale: 1=Not at all, 2=A little, 3=A moderate amount, 4=Very much, and 5=An extreme amount</i>	Ask caregiver; ask pregnant women.

	Impact	Potential Question	Question Type
Capability Well-Being	Psychological Health	Please answer the question using the scale based on how true the following statement is: My child has high self-esteem.* <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i> <i>*This question should be repeated to ask about other behaviors including: engages in risky behaviors, is depressed, is aggressive towards peers, and is hyperactive.</i>	Ask caregiver about older children
		How many times has your child gone to the doctor in the last week? The last month?	Ask caregiver about both younger and older children; ask pregnant women.
	Physical Health	How many times did your child have diarrhea in the last month?	Ask caregiver about both younger and older children
		How many times did your child have a parasite in the last month?	Ask caregiver about both younger and older children
		On average, when your child is sick, how many days is the child sick?	Ask caregiver about both younger and older children
		How many times has your child missed school due to health reasons in the last month?	Ask caregiver about school-age children
		Please answer the question using the scale based on how true the following statement is: At home, my child shares information about health services learned at school. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver about school-age children
		What percentage of the time does your child wash his or her hands when presented with the opportunity to do so?	Ask caregiver about both younger and older children
		Please answer the question using the scale based on how true the following statement is: The quantity of food my child is getting is sufficient. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver about both younger and older children; ask pregnant women.
		Please answer the question using the scale based on how true the following statement is: The quality of food my child is getting is sufficient. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver about both younger and older children; ask pregnant women.
		Please answer the question using the scale based on how true the following statement is: I know a lot about preventing and identifying diseases in my children. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5 Strongly disagree</i>	Ask caregiver; ask pregnant women.
		Please answer the question using the scale based on how true the following statement is: I am in good health <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver; ask pregnant women.

	Impact	Potential Question	Question Type
Capability Well-Being	Family Planning	Please answer the question using the scale based on how true the following statement is: I am able to provide my children with enough resources. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver; ask pregnant women.
		Please answer the question using the scale based on how true the following statement is: I feel stressed about using family planning. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver; ask pregnant women.
		Before going to Penda what method of family planning did you use?	Ask caregiver; ask pregnant women.
		What method of family planning do you use now?	Ask caregiver; ask pregnant women.
		Please answer the question using the scale based on how true the following statement is: I feel empowered. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver, ask pregnant women.
	Education	How much, if at all, has your child's grades improved at school? <i>Scale: 1=Not at all, 2=A little, 3=A moderate amount, 4=Very much, and 5=An extreme amount</i>	Ask caregiver about older children
Relationship Well-being Well-Being	Support	Please answer the question using the scale based on how true the following statement is: My child has developed a closer relationship with family members. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver about both younger and older children
		Please answer the question using the scale based on how true the following statement is: I feel like I spend enough time with my children. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver about both younger and older children
		Please answer the question using the scale based on how true the following statement is: My family spends quality time together. <i>Scale: 1=Strongly agree, 2=Agree, 3=Neither agree or disagree, 4=Disagree, and 5=Strongly disagree</i>	Ask caregiver about both younger and older children
During the survey, the interviewer should observe each child's appearance and behavior, if present. At the end of the survey, the interviewer should ask an open-ended question to capture any other differences the parents may have noticed in their children or in the mother, if she is pregnant. The above questions are suggested questions and should be pre-tested with customers to adapt them to the local context.			

ENDNOTES

1. World Health Organization. "Child Health." <http://www.who.int/gho/child_health/en/index.html>. Accessed 11 Feb. 2013.
2. World Health Organization. "Causes of child mortality." <http://www.who.int/gho/child_health/mortality/mortality_causes_text/en/index.html>. Accessed 11 Feb. 2013.
3. Staff 6. Personal interview. 6 Nov. 2012.
4. External Organization 2: Community leader. Personal interview. 8 Nov. 2012.
5. Eleos Foundation. Video. 28 June 2012. <http://www.youtube.com/watch?v=YDMhTaaEr_U>. Accessed 23 Jan. 2013.
6. IPIHD. <<http://www.ipihd.org/>>. Accessed 22 Jan. 2013.
7. Center for Health Market Innovations. <<http://healthmarketinnovations.org/about>>. Accessed 22 Jan. 2013.
8. Ventures. "Penda Health Raises Nearly \$100,000 For Expansion." 14 Aug. 2012. <<http://www.ventures-africa.com/2012/08/kenyan-clinic-raises-nearly-100000-for-expansion/>>. Accessed 23 Jan. 2013.
9. *ibid*
10. BBC News. "Technology opens the doors of Africa's health sector." Penda Health blog excerpts. 31 July 2012. <<http://pendahealth.wordpress.com/2012/07/31/bbcnews-technology-opens-the-doors-of-africas-health-sector-10/>>.
11. Penda Health LinkedIn Profile. <<http://www.linkedin.com/company/2375736>>. Accessed 23 Jan. 2013.
12. Stephanie Koczela. Email correspondence. 30 May 2013.
13. Business Daily Africa. 17 Dec. 2012. <<http://www.businessdailyafrica.com/Women-clinic-attracts-investors-after-global-award/-/539552/1646028/-/item/1/-/8utq4q/-/index.html>>. Accessed 23 Jan. 2013.
14. Stephanie Koczela. Personal interview. 22 Oct. 2012.
15. Bid Network. Penda Health--Kenya Profile. <<http://www.bidnetwork.org/en/plan/310298>>. Accessed 23 Jan. 2013.
16. SmartGlobalHealth.org. "Kenya: The Big Picture on Health." <<http://www.smartglobalhealth.org/pages/kenya-mission/kenya-health>>. Accessed 14 Feb. 2013.
17. World Health Organization. Global Health Observatory Data Repository. "Health Workforce Aggregated Data: Absolute Numbers." <<http://apps.who.int/gho/data/?vid=92000>>. Accessed 14 Feb. 2013.
18. SmartGlobalHealth.org. "Kenya: The Big Picture on Health." <<http://www.smartglobalhealth.org/pages/kenya-mission/kenya-health>>. Accessed 14 Feb. 2013.
19. USAID, SPS. Kenyan Health System Assessment 2010. August 2010.
20. *ibid*
21. *ibid*
22. Minute Clinics. <<http://www.minuteclinic.com/about/qualified-clinicians.aspx>>. Accessed 30 Jan. 2013.
23. Stephanie Koczela. Personal interview. 22 Oct. 2012.
24. Penda Health Blog. <http://pendahealth.wordpress.com/our-blog/>. Accessed on 28 March 2013
25. Staff 4. Personal interview. 5 Nov. 2012.
26. Penda Health Blog. < <http://pendahealth.wordpress.com/2012/11/03/clinic-1-hits-600-patients-in-a-month-almost/>>. Accessed on 11 Feb 2013.
27. Beatrice Ngoche. Email correspondence. 15 Feb. 2013.
28. Nicholas Sowden. Email correspondence. 15 Dec. 2013.
29. Penda Health. <http://www.youtube.com/watch?feature=player_embedded&v=xivyLXzUaDE>. Accessed 22 Jan. 2013.
30. Beatrice Ngoche. Email correspondence. 15 Feb. 2013.
31. Beatrice Ngoche. Email correspondence. 15 Feb. 2013.
32. External Organization 2: Community leader. Personal interview. 8 Nov. 2012.
33. Stephanie Koczela. Personal interview. 22 Oct. 2012.
34. Beatrice Ngoche. Email correspondence. 15 Feb. 2013.
35. Customer 13. Personal interview. 7 Nov. 2012.
36. BBC News. Penda Health blog excerpts.

37. Beatrice Ngoche. Email correspondence. 1 Feb. 2013.
38. SmartGlobalHealth.org. "Kenya: The Big Picture on Health." <<http://www.smartglobalhealth.org/pages/kenya-mission/kenya-health>>. Accessed 14 Feb. 2013.
39. KEMSA. http://www.kemsa.co.ke/index.php?option=com_content&view=article&id=34&Itemid=3. Accessed online on 29 March 2013.
40. SmartGlobalHealth.org. "Kenya: The Big Picture on Health." <<http://www.smartglobalhealth.org/pages/kenya-mission/kenya-health>>. Accessed 14 Feb. 2013.
41. USAID, SPS. Kenyan Health System Assessment 2010. August 2010.
42. *ibid*
43. SciDev.Net. "A new prescription for Kenya's traditional healers." 2 Sep. 2005. <<http://www.scidev.net/en/features/a-new-prescription-for-kenyas-traditional-healers.html>>. Accessed 14 Feb. 2013.
44. USAID, SPS. Kenyan Health System Assessment 2010. August 2010.
45. The World Bank: Data. <<http://data.worldbank.org/>>. Accessed on 23 Jan 2013.
46. Penda Health WordPress. "Cultural/Religious Context of Our Service." 29 Jan. 2012. <<http://pendahealth.wordpress.com/2012/01/29/culturalreligious-context-of-our-services/>>. Accessed 14 Feb. 2013.
47. Okech, T., Wawire, W., and Mburu, T. "Contraceptive Use Among Women of Reproductive Age in Kenya's City Slums." *International Journal of Business and Social Science*. Vol. 2, No. 1. January 2011.
48. Rockefeller Foundation. "Catalyzing Change: The System Reform Costs of Universal Health Coverage." <<http://www.rockefellerfoundation.org/uploads/files/ebafb89b-2d68-45c0-885e-74d40e8c55d9.pdf>>. Accessed 14 Feb. 2013.
49. African Economic Outlook. "Kenya: Social Contact & Human Development."
50. Economy Watch. "Kenya Economy." 5 April 2010.
51. Government of Kenya press release. 31 Mar. 2010. <http://defeatdd.org/sites/default/files/node-images/Kenya%20DD%20Policy%20Press%20Release_FINAL.pdf>. Accessed 31 Jan. 2013.
52. Customer 7. Personal interview. 6 Nov. 2012.
53. Customer 13. Personal interview. 7 Nov. 2012.
54. Customer 16. Personal interview. 8 Nov. 2012.
55. Staff 7. Personal interview. 6 Nov. 2012.
56. Customer 8. Personal interview. 6 Nov. 2012.
57. Customer 7. Personal interview. 6 Nov. 2012.
58. External Organization 2: Community leader. Personal interview. 8 Nov. 2012.
59. Customer 13. Personal interview. 7 Nov. 2012.
60. Customers 3-6 and Non-Customers 1-9. Focus group. 6 Nov. 2012.
61. Customer 13. Personal interview. 7 Nov. 2012.
62. Customer 7. Personal interview. 6 Nov. 2012.
63. Customers 3-6 and Non-Customers 1-9. Focus group. 6 Nov. 2012.
64. Customer 7. Personal interview. 6 Nov. 2012.
65. Customer 7. Personal interview. 6 Nov. 2012.
66. External Organization 1: School. Personal interview. 7 Nov. 2012.
67. External Organization 5: School. Personal interview. 9 Nov. 2012.
68. Staff 7. Personal interview. 6 Nov. 2012.
69. Customer 13. Personal interview. 7 Nov. 2012.
70. External Organization 2: Community leader. Personal interview. 8 Nov. 2012.
71. Customer 12 and Non-Customers 11-18. Focus group. 7 Nov. 2012.
72. Staff 1. Personal interview. 5 Nov. 2012.
73. External Organization 5: School. Personal interview. 9 Nov. 2012.
74. Customer 7. Personal interview. 6 Nov. 2012.
75. Customer 7. Personal interview. 6 Nov. 2012.
76. Customer 11. Personal interview. 7 Nov. 2012.

77. Customer 16. Personal interview. 8 Nov. 2012.
78. Customer 8. Personal interview. 6 Nov. 2012.
79. Customer 14. Personal interview. 7 Nov. 2012.
80. Customer 11. Personal interview. 7 Nov. 2012.
81. Customer 13. Personal interview. 7 Nov. 2012.
82. Customer 12 and Non-Customers 11-18.
83. Customer 18. Personal interview. 8 Nov. 2012.
84. External Organization 2: Community leader. Personal interview. 8 Nov. 2012.
85. Customer 18. Personal interview. 8 Nov. 2012.
86. External Organization 1: School. Personal interview. 7 Nov. 2012.
87. School 5. Personal interview. 9 Nov. 2012.
88. Staff 6. Personal interview. 6 Nov. 2012.
89. Staff 1. Personal interview. 5 Nov. 2012.
90. Staff 5. Personal interview. 5 Nov. 2012.
91. Staff 2. Personal interview. 5 Nov. 2012.
92. Staff 1. Personal interview. 5 Nov. 2012.
93. Staff 1. Personal interview. 5 Nov. 2012.
94. Staff 2. Personal interview. 5 Nov. 2012.
95. External Organization 5: School. Personal interview. 9 Nov. 2012.
96. Customers 3-6 and Non-Customers 1-9. Focus group. 6 Nov. 2012.
97. Penda Health WordPress Blog. <<http://pendahealth.wordpress.com/our-blog/>>. Accessed 31 Jan. 2013.
98. Customer 16. Personal interview. 8 Nov. 2012.
99. Customers 3-6 and Non-Customers 1-9. Focus group. 6 Nov. 2012.
100. Customers 19-25. Focus group. 9 Nov. 2012.
101. Staff 6. Personal interview. 6 Nov. 2012.
102. Non-Customer 12. Personal interview. 8 Nov. 2012.
103. Customers 19-25. Focus group. 9 Nov. 2012.
104. Customer 12 and Non-Customers 11-18.
105. Staff 5. Personal interview. 5 Nov. 2012.
106. Customer 9. Personal interview. 7 Nov. 2012.
107. External Organization 2. Community leader. Personal interview. 8 Nov. 2012.
108. Beatrice Ngoche. Email correspondence. 1 Feb. 2013.
109. Beatrice Ngoche. Email correspondence. 1 Feb. 2013.
110. External Organization 2. Community leader. Personal interview. 8 Nov. 2012.
111. Staff 6. Personal interview. 6 Nov. 2012.
112. Customer 1. Personal interview. 6 Nov. 2012.
113. Customers 3-6 and Non-Customers 1-9. Focus group. 6 Nov. 2012.
114. Customer 7. Personal interview. 6 Nov. 2012.
115. Customer 14. Personal interview. 7 Nov. 2012.
116. Customer 18. Personal interview. 8 Nov. 2012.
117. Mental Health America. "When a Parent Has a Mental Illness." 2012. <<http://www.nmha.org/index.cfm?objectid=e3412bb7-1372-4d20-c8f627a57cd3d00f>>.
118. Customer 1. Personal interview. 6 Nov. 2012.
119. Customer 13. Personal interview. 7 Nov. 2012.

120. Customer 16. Personal interview. 8 Nov. 2012.
121. World Health Organization. "WHO joins call for renewed focus on family planning." 11 July 2012. <http://www.who.int/mediacentre/news/notes/2012/family_planning_20120711/en/index.html>.
122. Staff 2. Personal interview. 5 Nov. 2012.
123. Staff 3. Personal interview. 5 November 2012.
124. UNFPA. "Family Planning and Poverty Reduction Benefits for Families and Nations." 2007. <http://www.unfpa.org/rh/planning/mediakit/docs/new_docs/sheet4-english.pdf>. Accessed 3 Oct. 2012.
125. USAID. "Health Policy Initiative: Engaging The Poor On Family Planning As A Poverty Reduction Strategy." July 2009. <http://www.healthpolicyinitiative.com/Publications/Documents/995_1_Engaging_the_Poor_IA5_FINAL_12_1_09_acc.pdf> Accessed 3 Oct. 2012. And E. Uddin and S. Arefin, "Family Authority Patterns and Gender Dimension of Birth Control Method Adoption in the Santal and Oraon Ethnic Communities in Rural Bangladesh." *International Journal of Human and Social Sciences*. 2:8 2007, p1.
126. Okech, T., Wawire, W., and Mburu, T. "Contraceptive Use Among Women of Reproductive Age in Kenya's City Slums." *International Journal of Business and Social Science*. Vol. 2, No. 1. January 2011.
127. USAID. "Health Policy Initiative: Engaging The Poor On Family Planning As A Poverty Reduction Strategy." July 2009. <http://www.healthpolicyinitiative.com/Publications/Documents/995_1_Engaging_the_Poor_IA5_FINAL_12_1_09_acc.pdf> Accessed 3 Oct. 2012. And E. Uddin and S. Arefin, "Family Authority Patterns and Gender Dimension of Birth Control Method Adoption in the Santal and Oraon Ethnic Communities in Rural Bangladesh." *International Journal of Human and Social Sciences*. 2:8 2007, p1.
128. Cleland, J., Bernstein S., Ezeh A., Faundes A., Glasier A., and Innis J. "Family planning: the unfinished agenda." *Lancet*. 2006. 368:1810-1827.
129. Smith, R., Ashford L., Gribble J., and Clifton D.. "Family Planning Saves Lives." Population Reference Bureau. 2009. <<http://www.prb.org/pdf09/familyplanningsaveslives.pdf>>. Accessed 4 Oct. 2012.
130. *ibid*
131. *ibid*
132. UNFPA. "Family Planning and Poverty Reduction Benefits for Families and Nations." 2007. <http://www.unfpa.org/rh/planning/mediakit/docs/new_docs/sheet4-english.pdf>. Accessed 3 Oct. 2012.
133. Cleland, J., Bernstein S., Ezeh A., Faundes A., Glasier A., and Innis J. "Family planning: the unfinished agenda." *Lancet*. 2006. 368:1810-1827.
134. Wawire, N.H.W. "Determinants of Tax Revenue in Kenya." Diss. Kenyatta University, Nairobi, 2006.
135. UNFPA. "Family Planning and Poverty Reduction Benefits for Families and Nations." 2007. <http://www.unfpa.org/rh/planning/mediakit/docs/new_docs/sheet4-english.pdf>. Accessed 3 Oct. 2012.
136. Okech, T., Wawire, W., and Mburu, T. "Contraceptive Use Among Women of Reproductive Age in Kenya's City Slums." *International Journal of Business and Social Science*. Vol. 2, No. 1. January 2011.
137. USAID. "Health Policy Initiative: Family Planning and the MDGs: Saving Lives, Saving Resources." June 2009. <http://www.healthpolicyinitiative.com/Publications/Documents/788_1_Family_Planning_and_the_MDGs_FINAL_June_09_acc.pdf>. Accessed 8 Oct. 2012.
138. James, P., Stinson W., Bhatia S., Rahman M., and Chakraborty J. "The Demographic Impact of the Family-Planning Health Services Project in Matlab, Bangladesh." *Studies in Family Planning*. 13.5 (1982): 131-40. Jstor. Population Council. <<http://www.jstor.org/stable/1966283>>. Accessed 3 Oct. 2012.
139. *ibid*
140. Kenyan National Coordinating Agency for Population and Development, June 2011. "Family Planning: A 'Best Buy' to Achieve Kenya's Development Goals." June 2011." Accessed 3 Oct. 2012. <<http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=OCC8QFjAB&url=http%3A%2F%2Fwww.ncpd-ke.org%2Fdocument%2F3b2a50f9214e947342712742c5f8ec67643e4714.pdf&ei=UIhsUilyLKPbyQGHxYBo&usg=AFQjCNGODsgpKyssVw4gwOgRYtMD5Xm4Ng>>.
141. Okech, T., Wawire, W., and Mburu, T. "Contraceptive Use Among Women of Reproductive Age in Kenya's City Slums." *International Journal of Business and Social Science*. Vol. 2, No. 1. January 2011.
142. *ibid*
143. Holley, C. "Negative Effects of Artificial Birth Control." *Livestrong.com*. 12 May 2011. <<http://www.livestrong.com/article/70605-negative-effects-artificial-birth-control/>>. Accessed 8 Oct. 2012.
144. Consortium For Emergency Contraception in India Guide Book for Health-Care Providers. Accessed online <http://www.aiims.edu/aiims/events/Gynaewebsite/ec_site/manual.htm> Accessed 11 July 2013.
145. Holley, C. "Negative Effects of Artificial Birth Control." *Livestrong.com*. 12 May 2011. <<http://www.livestrong.com/article/70605-negative-effects-artificial-birth-control/>>. Accessed 8 Oct. 2012.
146. FHI360.org. "The Impact of Family Planning and Reproductive Health on Women's Lives: A Conceptual Framework." <<http://www.fhi360.org/en/rh/pubs/wsp/wrknppapers/conceptframe.htm#wsld>>. Accessed 8 Oct. 2012.
147. *ibid*



**William Davidson Institute at the
University of Michigan**

724 E. University Avenue
1st Floor, Wyly Hall
Ann Arbor MI
48109-1234
(734) 763-5020
www.wdi.umich.edu



William Davidson Institute
AT THE UNIVERSITY OF MICHIGAN