LIVEWELL PRIVATE HEALTH CLINICS IN KENYA: RESULTS FROM A PROCESS EVALUATION OF THE MODEL

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ACRONYMS

CHW	Community Health Worker
CO	Clinical Officer
DHS	Demographic and Health Survey
ENT	Ear, Nose, and Throat
FP	Family Planning
FTE	Full-Time Equivalent
GP	General Practitioner
HH	Household
IMCI	Integrated Management of Childhood Illnesses
IT	Information Technology
KIHBS	Kenya Integrated Household Budget Survey
Ksh	Kenyan Shilling
LW	LiveWell
NHIF	National Hospital Insurance Fund
PAT	Poverty Assessment Tool
PSP-*One*	Private Sector Partnerships-*One* Project (USAID-funded; 2005- 2009)
SHOPS	Strengthening Health Outcomes through the Private Sector
USAID	United States Agency for International Development
USD	United States Dollar
WHO	World Health Organization

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EXECUTIVE SUMMARY

BACKGROUND

Provision of care that is both high quality and affordable to poorer segments of the population is a common challenge for private providers that aim to be financially self-sustainable. LiveWell Health Clinics (later renamed to Viva Afya[1]) were founded in 2009 to provide essential and preventive health care services to the poor in Kenya's urban areas. By mid-2012, LiveWell had five clinics in slum areas in Nairobi and two urban areas in Central Province. The USAID-funded SHOPS project conducted a process evaluation of the LiveWell model in 2012 to assess whether this model can provide affordable quality health services to the urban poor and be financially viable.

METHODS

The evaluation used routine data on the volume of services, costs, and revenues to assess the financial viability of LiveWell. Interviews with staff and clinic visits were used to assess operational processes. A survey of households in the clinics' catchment areas and a client survey covering all five clinic locations collected data on socio-economic status to assess whether LiveWell serves relatively poor clients, and to explore knowledge and perception of LiveWell services.

RESULTS

The assessment found that the LiveWell model is focused on providing efficient and quality health services. Each clinic has consultation, laboratory, and pharmacy services under one roof, and some provide specialty services (e.g., obstetrics/gynecology, dental) offered by visiting specialists. Quality of drugs sold at the clinics is ensured through a centralized drug supply system from the main clinic that purchases from reputable suppliers in Nairobi and monitors supplies in each clinic. Electronic records systems are used in some of the clinics, and management routinely uses data collected systematically at the clinics for decision-making. Formal quality assurance and supportive supervision practices have fostered retention of motivated staff. Various outreach and marketing strategies have been employed, with mixed success. Sales of LiveWell service bundles – which included a set number of consultations, lab tests, and discounts on drugs for antenatal, infant, diabetes, and hypertension care – did not take off due to inadequate marketing of the bundles by clinic staff who perceived lack of

[1] For the purposes of this report, we use LiveWell as this was the name of the clinics at the time this evaluation took place in April-May 2012.

demand for the products by clients. LiveWell management reported that the main issue was lack of internal staff resources (sales and marketing specialists) to promote the bundles internally to clinic staff and externally to potential clients. Management remained committed to promoting bundled services and planned to re-launch the bundles in 2013 when a sales and a marketing manager would be hired and tasked with leading this effort.

Two and a half years after it was established, LiveWell had reached annual cost-recovery rate of 49%, with the first and largest clinic achieving 79%. At the time of this evaluation, the five LiveWell clinics served a total of 2,600 clients per month, most using only the pharmacy services. In the 12 months prior to this evaluation (July 2011–June 2012) total service volume was more than twice as high compared to the previous year.

The vast majority of LiveWell clients sought curative rather than preventive care, and more than half were repeat clients. The Nairobi clinics had greater success in growing client volumes, compared to the clinics in Central Province. Household survey data provided context to these results. For example, use of private providers for curative care in areas served by LiveWell was 56% in Nairobi and 25% in the other areas, and knowledge of LiveWell was higher in Nairobi.

The survey data indicated that about half of households in the Nairobi areas where LiveWell operates are in the poorest wealth tercile and half are in the middle tercile (relative to the overall Nairobi area). In LiveWell's catchment areas in Central Province, the wealth distribution of households is similar to urban Kenya. In each area, about half of LiveWell's clients were from the middle wealth tercile, while 28% in Nairobi and 17% in Central Province belonged to the poorest tercile. These results indicate that by operating in low- to middle-income urban areas, this clinic model may initially attract primarily middle-income households, but also serve many poorer clients.

Most LiveWell clients are women of reproductive age, and the privacy of separate consultation rooms, as well as presence of a nurse and a clinical officer in every clinic, is a good set-up for attracting more family planning clients. LiveWell had only recently received approval from the government to provide family planning, and family planning service volumes were thus still low at the time of this evaluation. However, there are indications that this model is well positioned for increasing family planning access in low- to middle-income areas.

Lastly, one contextual factor to be noted is that the existing preference for private sector services (particularly in the Kayole area) may have helped in building up client volumes faster that would be the case in areas where the population prefers public providers.

The results of this assessment could inform the design of similar ventures in Kenya or other countries.

I. BACKGROUND

The private sector is playing an increasingly important role in delivering health care in Kenya. In 2010, the private sector, including both for-profit and nonprofit health facilities, contributed over 40% of health services in the country.[2] According to a study by the World Bank, "the private sector has grown dramatically over the past two decades… In 1992, the private sector owned and managed less than half (47 percent) of all health facilities in Kenya. By 2006, private sector ownership grew to 59 percent."[3]

The private sector is an important source of family planning services and maternal and child health care, especially in urban areas. Overall, 36% of family planning users are supplied through private medical sources and 6% through other private sources (such as shops).[4] Among pregnant women in urban areas who sought antenatal care, 25% chose the private sector (40% in Nairobi), and 23% of deliveries in urban areas were at a private health facility (44% in Nairobi).[5]

In 2010, 23% of children who were brought to a health provider for care due to presumed malaria were brought to a private provider.[6] The 2003 Kenya Demographic and Health Survey (DHS) shows that children with symptoms of acute respiratory infection (ARI) are taken to private sector providers more often than to public sector providers, particularly in urban areas where 58% are treated in the private sector.[7] Private providers in urban areas treat 47% of children with diarrhea.[8] The majority of those in the richest quintile use the private sector (54%), while the poorest two quintiles rely mostly on the public sector (58%). Still, even within the poorest two quintiles, about one-third of individuals report using the private sector.[9]

Wealthier households use some maternal services at significantly higher rates than poorer households: in 2008–2009, 40% of deliveries in the wealthiest two quintiles occurred at private health facilities, compared to 9% in the poorest two quintiles.[10] However, among women who received antenatal care, those in the richest and in the poorest quintiles used the private sector at comparable levels (31% and 28%, respectively).[11]

Still, there are some concerns with respect to the quality of care in the private sector. According to the Government of Kenya Master Facility List, there were close to 4,400 private health

[2] Measure DHS. Kenya Service Provision Assessment, 2010. p. 18.
[3] World Bank Working Paper No. 193. Private Health Sector Assessment in Kenya. p. 8.
[4] Kenya DHS, 2008-2009, p.67.
[5] Ibid.
[6] Kenya National Bureau of Statistics. 2010 Kenya Malaria Indicator Survey. p.xv.
[7] World Bank Working Paper No. 193. p.22.
[8] Ibid, p.121.
[9] Ibid, p.124.
[10] Kenya DHS, 2008-2009, p.120.
[11] Ibid, p.115-116.

facilities in Kenya in May 2012.[12] However, the Medical Practitioners and Dentists Board (a regulating body established by the Kenyan Parliament to register and license private facilities and medical practitioners in both the public and private sectors) only had 1,558 private health care facilities registered as of July 2012,[13] implying that most private providers have not received approval to provide health services in Kenya. The Mission for Essential Drugs and Supplies found that 37% of drugs sold in retail outlets in 2002 failed to meet the standards for active ingredients.[14]

Against this background, LiveWell Health Clinics was established in 2009 to address both quality and affordability issues within a private health care model. By mid-2012, LiveWell had five clinics: three in slum areas in Nairobi and two in urban areas in Central Province.

LiveWell Health Clinics provide essential and preventive health care services in urban and peri-urban areas. The LiveWell model focuses on providing efficient and quality health services, with a goal to become a financially self-sustainable business while providing affordable care. Each clinic has consultation, laboratory, and pharmacy services under one roof, and some provide specialty services (e.g., obstetrics/gynecology, dental) on certain days of the week offered by visiting specialists.

1.1 SHOPS PROJECT'S INVOLVEMENT WITH LIVEWELL

The USAID-funded Strengthening Health Outcomes through the Private Sector (SHOPS) project aims to engage the private sector in increasing availability and improving quality of essential health services in developing countries. LiveWell was included in a rapid assessment of notable business models attempting to reach the "base of the pyramid" populations, conducted in 2009 by Monitor Group with SHOPS in several African countries.[15] SHOPS began providing technical assistance to LiveWell in 2010 because studying the model represented a unique opportunity to answer critical questions about whether a private sector entity can provide high quality health and family planning services to the base of the pyramid while being financially viable. Through discussions with LiveWell's founder and director, Liza Kimbo, a focus on three areas of targeted assistance were developed – one on business modeling and analysis, another on marketing and community outreach, and a third on monitoring and evaluation.

The business modeling included estimating the break-even client traffic for LiveWell's clinics, a pricing structure, packaging of health services into subscription bundles, and discount strategy. The marketing and community outreach assistance consisted of a strategy designed to improve

[12] http://www.ehealth.or.ke/facilities/downloads.aspx; included all facilities except those under the ownership of the Ministry of Health, Academic (if registered), State Corporation, Other Public Institution, Parastatal, 'Not in List', Armed Forces.
[13] http://www.medicalboard.co.ke/resources/Licensed_Health_Facilities.pdf
[14] World Bank Working Paper No. 193, Private Health Sector Assessment in Kenya. p. 48-49.
[15] The *base of the pyramid* refers to the poorest segments of the population, as defined in Rangan VK, Quelch JA, Herrero G, Barton B. *Business Solutions for the Global Poor: Creating Social and Economic value*. San Francisco, CA: Jossey-Bass; 2007.

LiveWell's reach through leveraging local civic and social networks to develop "discount for referral" relationships with local women's and church groups, small businesses, and others, and partnering with local microfinance institutions and micro-insurance providers to reach their client base. SHOPS worked closely with LiveWell's leadership in developing the strategy, but did not itself implement any of the proposed activities.

The monitoring and evaluation support provided by SHOPS consisted of creating a set of indicators, an indicator tracking system, and a tool that generates business reports to facilitate decision making for LiveWell leadership (a "dashboard").

Lastly, SHOPS conducted a comprehensive process evaluation of the LiveWell model. The results of this evaluation are the focus of this report.

I.2 GOALS OF THIS EVALUATION

The goal of this process evaluation is to document the LiveWell model, from its initial stages until three years after the first LiveWell clinic was established. By providing practical insight into the clinics' operations and lessons learned from the past three years, results from this evaluation will provide a clearer understanding of the interventions undertaken and will provide LiveWell management with useful information to guide and improve operations. For example, examining indicators on quality of services and client volumes will provide an overall picture of LiveWell's contribution to improving the availability of high quality health services, including family planning/reproductive health services.

More broadly, by identifying which aspects of the model are, or are not, working as originally envisioned, this evaluation aims to provide insight on the potential of the LiveWell approach to be scaled up, which would make potential replication, or the design of other similar ventures, easier and more feasible. Ultimately, this evaluation provides a unique opportunity to understand whether a private sector entity can provide high quality health and family planning services to the urban poor, while remaining a financially-viable organization.

The results of this evaluation could inform the design of similar ventures in Kenya or other countries.

2. EVALUATION METHODS

2.1 RESEARCH QUESTIONS

The evaluation explored the following key questions:

1) How is the LiveWell clinic model being implemented?
    a. What does this approach look like?
    b. What are the key features of the LiveWell model?
2) To what extent has LiveWell reached financial sustainability?
3) Who is LiveWell serving?
    a. What is the socio-economic status of clients using LiveWell services and of LiveWell's potential clients (i.e., catchment population)?
    b. Is LiveWell serving relatively poor clients?
    c. What is the distribution of LiveWell's clients by type of service (e.g., family planning, maternal, child health services)?
4) What are some lessons for others who want to establish this type of network?

2.2 STUDY DESIGN

To address the research questions, we used a study design that combined elements of *implementation evaluation* and *process study* approaches.[16]

2.2.1 IMPLEMENTATION EVALUATION

We used an implementation evaluation approach to determine the extent to which the LiveWell model was implemented as originally envisioned. To do this, we gathered detailed, descriptive information about what LiveWell is doing as an organization, how the model was developed, and how and why the model may have deviated from initial plans and expectations (including the plans developed at the design stage with SHOPS technical assistance).

In particular, we explored the LiveWell business structure, organization, inputs, activities, and processes as well as experiences by management, staff, clients and potential/target clients.

[16] Patton, Michael Quinn. 1990. *Qualitative Evaluation and Research Methods—2nd ed*. Newbury Park, CA: SAGE Publications, Inc.

To the extent possible, we placed a specific focus throughout the study on family planning and maternal and child health services, which are among the priority services of interest for SHOPS as a project.

2.2.2 PROCESS STUDY

We sought to elucidate how the LiveWell model operates, and how it serves and attracts clients, by providing a detailed description of LiveWell's operational model and its day-to-day implementation.

The process study documented the perceptions and experience of LiveWell staff, clients, and potential clients (residents in LiveWell catchment areas) with regards to LiveWell's operations. The topics that we explored included: a socio-economic profile of LiveWell's clients and target population, the extent of knowledge about LiveWell in the areas where it operates, the types of services that clients sought, whether any were referred by other providers or only used the pharmacy, and broad indicators of the quality of care they received and their satisfaction.

The study included both qualitative and quantitative research elements, exploring the changes throughout the clinic model development since 2009 when the first clinic opened in Kayole.

2.3 DATA COLLECTION METHODS

The data sources for the implementation evaluation and the process study included:

- Routine data from LiveWell's internal systems (e.g., clinic data on volume of services, revenues, and expenditures).
- Visits and observation of facilities and processes in all five clinics.
- Interviews with LiveWell staff and management.
- A survey of households in the clinics' catchment areas and a client exit survey, with each survey covering all five clinic locations.

2.3.1 ROUTINE DATA FROM LIVEWELL'S INTERNAL SYSTEMS

LiveWell has an internal data collection and analysis system that keeps track of service volumes in each clinic, as well as revenues and expenditures. SHOPS has been assisting LiveWell with routine analysis of these data, including the development of a "dashboard" tool that allows LiveWell to track progress against break-even service volume targets, analyze trends in revenues, service volumes, and cost recovery, and compare these across clinics. We used the data collected for the dashboard tool between January 2010 and June 2012, as well as additional detailed data we obtained from LiveWell management, to assess the overall financial sustainability of LiveWell.

2.3.2 VISITS AND OBSERVATION OF FACILITIES

The evaluation team visited LiveWell's headquarters and all five clinics to observe facilities and settings, and to learn about the services provided, the issues encountered, and the various systems and processes in place. The observational visits included a general tour of each facility, review of record keeping and data collection and management systems (both paper and electronic), and overall observation of client volumes at time of each visit. The visits were conducted on May 17–24, 2012.

2.3.3 INTERVIEWS WITH LIVEWELL STAFF AND MANAGEMENT

During these visits, we also interviewed LiveWell staff and management to develop an understanding of LiveWell's history and operations, how systems and processes were developed, what approaches worked, and what did not work as intended. We spoke with 32 people through individual and group interviews. Interviewees included: LiveWell founders and senior managers; staff at headquarters responsible for human resources, quality assurance, financial and data management; and clinic-based staff including the clinical officers, nurses, laboratory technicians, pharmacists, receptionists, and those responsible for community outreach. We used a semi-structured interview approach guided by pre-defined topical areas corresponding to the key research questions.

2.3.4 HOUSEHOLD AND CLIENT SURVEYS

The process evaluation questions related to households in LiveWell clinics' catchment areas and clients of the clinics were explored through data from a survey of households and clients. The survey data collection was conducted in all of LiveWell's geographic locations: the Kayole-Matopeni slum in Nairobi, where three of the clinics are located; and Karatina and Kerugoya, mid-size towns located in Central Province, each with one LiveWell clinic

Data collection and entry for both surveys was commissioned to Ipsos Synovate, a market research firm based in Nairobi. Data collection took place on August 3–25, 2012. The study protocol was reviewed and exempted by the Abt Associates Institutional Review Board.

HOUSEHOLD SURVEY

A sample of households was selected from the catchment area around each LiveWell clinic. Each catchment area was defined as an area of about 1 km radius from the clinic (confirmed by LiveWell management as the area that they target).

Respondents were heads of households or their spouses as they are most likely the decision makers on issues relating to health care and household health expenditures. Only individuals aged 18 years and above were eligible to participate in the survey.

The household survey was designed to produce results representative at the province level, with a margin of error of 6 percentage points for proportion estimates. In each province, the locations where LiveWell operates have broadly similar socio-economic profiles:

- **In Nairobi Province,** LiveWell operates in the Kayole-Matopeni slum area. Kayole and Matopeni are adjacent neighborhoods. The three clinics in this area are LiveWell Kayole, Masimba, and Matopeni;

- **In Central Province**, LiveWell has a clinic in each of two locations – the mid-sized towns of Karatina and Kerugoya, which are about 40 kms apart.

Annex A provides details on the sampling process. Table 1 summarizes the final sample size.

TABLE 1. SAMPLE SIZE IN HOUSEHOLD SURVEY

Clinic location/ catchment area	Number of households in survey sample
Nairobi Province	**360**
Kayole and Masimba*	310
Matopeni	50
Central Province	**279**
Karatina	151
Kerugoya	128

* The Masimba clinic is located a few blocks from the Kayole clinic and a radius of 1 km around the hub covers these two clinics' catchment areas (i.e., we consider the catchment area for these two clinics to be within a radius of 1 km around the Kayole clinic).

CLIENT SURVEY

The client exit survey aimed to measure client satisfaction with services, perceived/self-reported quality of care, and client's socio-demographic profile.

The client survey was designed to get results for all five clinics as a group, with a margin of error of 7 percentage points. Annex B describes the sampling process. The final sample size and distribution is summarized in Table 2.

TABLE 2. SAMPLE SIZE IN CLIENT EXIT SURVEY

LiveWell clinic	Number of clients in survey sample
Nairobi	
Kayole	90
Matopeni	38
Masimba	18
Central Province	
Karatina	29
Kerugoya	25
Total	**200**

The respondent in this survey was the person seeking care if adult over 18 years of age, or the caregiver of the person seeking care for children brought for care. The client interviews were distributed over a full week to ensure that if certain weekdays were more popular for some types of visits or clients, the data would be representative of these variations.[17]

2.4 DATA COLLECTION INSTRUMENTS

Routine data from LiveWell's internal systems were collected on a quarterly basis using the dashboard data collection tool. Interviewers used discussion guides to structure the interviews with LiveWell staff.

For the household and client exit surveys, we used structured questionnaires that were translated into the local languages (Kiswahili and Kikuyu). The following categories of questions were included in the household questionnaire:

- Basic socio-demographic information
- Health insurance status
- Knowledge and perception of LiveWell (services, locations, prices, quality, service bundles)
- Use of LiveWell services and other providers
- Housing characteristics and asset ownership (to ascertain poverty status)

[17] In some of the clinics, data collection continued into a second week, due to low client volumes and/or response rates.

The following categories of questions were included in the client exit questionnaire:

- Type of health issue/reason for visit
- Types of services received
- Client perceptions of service quality
- Whether clients received key services standard for a given type of visit
- Expenditures on services and drugs, and perception of price levels and affordability
- Housing characteristics and asset ownership (to ascertain poverty status)

Data were collected by Ipsos Synovate using smartphones.

2.5 ANALYTIC METHODS

2.5.1 LIVEWELL ROUTINE DATA

For the data collected from LiveWell's routine data systems, we assessed rates of increase and time trends, and compared results across clinics and service categories.

2.5.2 KEY INFORMANT INTERVIEWS

The qualitative information from the open-ended interviews with LiveWell staff and partners was analyzed around the topical areas of investigation for the process and implementation evaluations. In our analysis, we triangulated information on the same question or topic obtained from various respondents.

2.5.3 HOUSEHOLD AND CLIENT EXIT SURVEY DATA

Data from both surveys were analyzed using Stata.[18] Sample weights reflecting the probability of selecting a household or client into the sample were applied in all analyses. Bivariate tabulations of the data were constructed for each variable of interest. While we referred to quantitative data from the surveys in describing overall differences among sites, we did not measure the statistical significance of differences in means (because establishing formally the extent of differences in results between sites was not among the objectives of the study).

[18] StataCorp. 2011. *Stata Statistical Software: Release 12*. College Station, TX: StataCorp LP.

SOCIO-ECONOMIC STATUS

We developed two composite measures of wealth status, to assess what proportion of LiveWell's clients and target households were relatively poor.

Wealth index: We used principal component analysis (PCA)[19] of household assets and housing characteristics in the 2009 DHS to construct asset wealth indexes to apply to the household and client exit data. This methodology is the same as that used by the DHS.[20] We created a separate wealth index for the Nairobi area (that we applied to our survey sample in Nairobi) and another index for urban Kenya (that we applied to our household sample in the two towns in Central Province).[21] Using the same index for both areas would place nearly all of the Nairobi households in the richest wealth group; the separate indexes we constructed allow us to measure the wealth status of the households/clients in our sample relative to the status of households in similar geographical areas.

Once we constructed the indexes, we ranked households by their index score and divided them into three equal-sized groups (terciles).[22] These rankings represent the relative household wealth status (poor, middle, and upper tercile). We applied the asset variable weights to the same variable indicators in our household and client datasets to create the index scores for our sample observations. We then assigned each household/client in our sample to one of the location-specific terciles, based on the tercile cutoff values of the index derived from the 2009 DHS data. This allowed us to measure what proportion of the households and clients served by LiveWell belong to each of these three relative wealth groups. Accordingly, this helped us to assess whether LiveWell tends to serve certain wealth groups predominantly (e.g., the relatively rich).

Box 1: The Poverty Assessment Tool (PAT)

The USAID Poverty Assessment Tools are short, country-specific household survey tools that estimate rates of poverty in a given population at various poverty lines. Derived from existing nationally representative datasets, the PATs predict, rather than directly measure, poverty with accuracy approaching that of the original surveys. To accomplish this, the tool developers employ multiple statistical approaches and develop accuracy criteria to select a small set of practical indicators (15-25 typically) that are powerful predictors of household expenditures. These indicators are incorporated into a questionnaire designed to be administered in 20 minutes or less and a data entry template that automatically predicts poverty outreach and disaggregates the results by various household characteristics.

Below poverty line status:
Additionally, we applied the USAID Poverty Assessment Tool (PAT)[23] for Kenya, adapted to the urban population, to estimate and compare the proportion of households and LiveWell clients that live below Kenya's official urban poverty line. One limitation of the results from our analysis using the PAT is that we cannot estimate the bias in our poverty estimates that is due to

[19] Filmer D, Pritchett L. Estimating Wealth Effects Without Expenditure Data—Or Tears: An Application to Educational Enrollments in States of India. Demography 2001 38(1):115-32. Rutstein SO, Johnson K. The DHS Wealth Index. DHS Comparative Reports No. 6. Calverton, Maryland: ORC Macro, 2004.
[20] We borrowed the list of household assets from the latest Kenya DHS for our survey.
[21] We would have preferred an index for urban areas in the Central Province, for comparison with the LiveWell clinics in that province, but the sample size in the DHS was too small to permit it.
[22] Although wealth quintiles are used more often in such analyses, the sample required to construct quintiles would be considerably larger than the sample that could be afforded in this evaluation. Terciles were considered an adequate breakdown for this evaluation.
[23] Details on this approach can be found here: www.povertytools.org/development.html

changes in the underlying relationships between poverty and poverty predictors since the Kenya Integrated Household Budget Survey 2006 (KIHBS 2006)[24] from which the PAT was developed. In addition, certain household characteristics used in the standard USAID PAT for Kenya were not asked in the client exit survey and other indicators had missing values, limiting tool accuracy.

[24] http://statistics.knbs.or.ke/nada/index.php/catalog/8

3. RESULTS: DESCRIPTION OF THE LIVEWELL MODEL

In this section, we provide a history of the LiveWell clinics and report on relevant findings from key informant interviews and observational visits on LiveWell's operational model, including its business management, pricing, marketing, and quality assurance process.

LiveWell was founded in 2009 by Liza Kimbo and Moses Waithaka, both highly experienced professionals in the area of health care in Kenya. At the time, Ms. Kimbo was heading an NGO, providing health services to low-income people, while Mr. Waithaka was heading the strategy and expansion unit of a health maintenance organization.

LiveWell was designed to be a for-profit entity, with a mission to provide high quality, affordable, sustainable health care for low-income individuals. The goal for each clinic is to reach self-sustaining profitability as quickly as possible, while maintaining a focus on their mission to serve poor people and a commitment to developing and maintaining strong partnerships with both the public and private health sectors. The first LiveWell clinic opened in Kayole in 2009.

LiveWell was originally designed to operate as a hub and spoke model that included various efficiency measures to reduce costs. The hub would be a major clinic offering comprehensive and specialty services, and would act as the referral center for four or five smaller (spoke) clinics that would provide only basic services. In practice, however, the LiveWell clinics offer largely the same set of services (though lab services in the main Kayole clinic are the most comprehensive). Still, certain efficiency measures have remained important in the LiveWell model: having all services (consultation, lab, and pharmacy) on site allows patients to receive all needed health services in a single location rather than having to travel from place to place. Having clinical officers and nurses for routine health care, instead of doctors, has allowed LiveWell to maintain high quality care at lower costs. Most facilities have computerized systems that help staff track patients' medical histories and integrate medical records and financial records.

By the summer of 2012, LiveWell had opened five clinics, and was seeing a growing number of clients and revenues. The main clinic in Kayole and the clinic in Kerugoya were opened in November 2009. In April 2011, the second clinic in Nairobi, in the Matopeni neighborhood (a very-low-income slum area adjacent to Kayole), and a second clinic in Central Province, in Karatina, were opened. The newest clinic which opened doors in March 2012, is in the Masimba area, adjacent to Kayole.

In the next five years, the vision of LiveWell's founders is to have 30 to 50 clinics open and running successfully in and around Nairobi and Central Province. At the time of this assessment, LiveWell was planning to expand to another area called Embakasi, by establishing a hub clinic and two spoke clinics, and was looking into opening a maternity clinic in the near future.

3.1 HISTORY OF FUNDING

The initial funding for LiveWell came from CareGo International, a private organization that builds and delivers technology-driven health care solutions to emerging markets. The utilization of technology to increase efficiency has been foundational to the LiveWell model since its inception, and CareGo's IT solutions were a good fit. This includes the clinic software that integrates service delivery and financial management data and a mobile diagnostic software tool used by the smaller clinics and at health camps and community outreach. Other funders were reluctant to give a for-profit entity like LiveWell seed funding without proven results.

To keep operations going, the founders invested their own resources into the organization, believing that with time, the model would begin showing success, and would allow them to start garnering the revenue necessary to become self-sufficient. LiveWell expects that with increased volumes of clients, revenues will start to fully cover the cost of running the clinics (Section 5 of this report explores the financial viability achieved so far).

In 2012, around the time this evaluation was completed, LiveWell was acquired by the Richard Chandler Corporation, an investment organization working to deliver transformational health care systems across the developing world. LiveWell was incorporated into the Viva Healthcare Group network of health clinics and rebranded as Viva Afya as the Richard Chandler Corporation's first facilities in sub-Saharan Africa. The Viva clinics around the world aim to provide low-income people with high quality health services.

Current shareholders in LiveWell are the Richard Chandler Corporation, which holds the majority share, and four other individuals, who hold minority shares.

3.2 BUSINESS MANAGEMENT PROCESS

The LiveWell management team includes the following staff:

(i) Chief Executive Officer – oversees all operations and management decisions, drives strategic vision of the organization, and acts as the face of LiveWell in working with outside funders and agencies.

(ii) Chief Financial Officer – responsible for the long- and short-term financial planning of the organization, monitoring costs and revenue to ensure sustainability.

(iii) Human Resources Director – oversees administration of LiveWell's staff and operations across all clinics, ensures communication between staff and management, and oversees hiring of new staff.

(iv) Accountant – responsible for maintaining LiveWell's financial records, compiling sales records from all clinics, keeping track of all bank accounts, and reporting expenses and revenues on a monthly basis.

(v) Quality Assurance Officer – responsible for monitoring all clinics regularly to ensure adherence to guidelines and procedures, and for holding staff accountable on measures of quality.

(vi) Sales Manager – responsible for increasing client footfall through building corporate client relationships and development of business sales opportunities.

The management team meets weekly to ensure timely communication of issues and for planning purposes.

The management team also holds monthly meetings with the clinical officers from each clinic. These meetings are held at LiveWell headquarters and are used to discuss problems that the clinics may be facing, new policies that the management wants to implement, and quality assurance issues that may have arisen. These meetings are also used to train the clinical officers in various areas, from clinic management to new data systems planned for the clinics. All staff are encouraged to bring up new ideas for improvement in LiveWell operations, such as the need for new laboratory machines or incorporating new specialist clinics in certain locations, and clinical officers feel that their ideas are always carefully considered by management.

Conversations with LiveWell staff based at the clinics revealed that most staff felt that if they had a new idea, they were free to present it to LiveWell management, and that in most cases they had a good chance of getting approval. For example, in Karatina, staff felt that people in the area did not know enough about LiveWell, and that the marketing that they were engaged in was not working. They asked LiveWell management if they could hire, on a trial basis, a person to be in charge of marketing, who could approach health insurance organizations and others to get LiveWell's name out in the community. Management approved, and they were ready to move forward.

3.3 SERVICE DELIVERY

3.3.1 TYPES OF SERVICES PROVIDED

Each LiveWell clinic offers primary health care services, and brings in specialists to offer additional services. Table 3 summarizes the services and staff types at LiveWell's clinics. The types of lab services vary by clinic. Most of the clinics offer basic lab tests such as blood sugar, urinalysis, and malaria tests. The Kayole clinic is an exception – it has a range of sophisticated lab equipment that, according to the lab technologist, is available in few or no other clinics in the area.

At the time of this evaluation, consultation fees for adults were in the range of Ksh. 100–150[25] in the different clinics, and Ksh. 50-70 for children.[26]

TABLE 3. SERVICES OFFERED AT LIVEWELL CLINICS

Clinic	Types of services	Staff
Kayole	Consultation, laboratory, pharmacy FP, immunization, dental (weekly), ultrasound (weekly), gynecology (weekly), pediatrics (bi-weekly), GP (bi-weekly), more advanced lab machines/tests compared to other LiveWell clinics and other private labs in the area	Full-time: 1 CO, 2 Nurses, 1 Lab Tech., 1 Pharm., 1 Receptionist Part-time: 1 CO, 1 Lab. Tech Visiting specialists : Doctor, Dentist
Karatina	Consultation, laboratory, pharmacy FP, ENT, and orthopedic specialists can be called on site when there is demand	Full-time: 1 CO, 1 Nurse, 1 Lab Tech., 1 Pharm., 1 Receptionist
Kerugoya	Consultation, laboratory, pharmacy FP, gynecology, dental specialist occasionally	Full-time: 1 CO, 1 Lab Tech., 1 Pharm., 1 Receptionist
Matopeni	Consultation, laboratory, pharmacy FP, mother-child clinics with immunization, gynecologist, pediatrician, GP, ENT (once or twice a month)	Full-time: 1 CO, 1 Nurse, 1 Lab Tech., 1 Pharm., 1 Receptionist Part-time: 1 CO, 1 Lab. Tech Visiting specialists: Doctor, Dentist
Masimba	Consultation, laboratory, pharmacy FP, mother-child clinics with immunization, gynecologist, pediatrician, GP, ENT (once or twice a month)	Full-time: 1 CO, 1 Nurse, 1 Lab Tech., 1 Pharm., 1 Receptionist Part-time: 1 CO, 1 Lab. Tech Visiting specialists: Doctor, Dentist

Note: FP=family planning, GP=general practitioner, CO=clinical officer, ENT=ear, nose, throat specialist

[25] 1 USD = 89 Kenyan shillings (Ksh).

[26] Fees for specialist consultations varied depending on the type of specialist and location.

The clinics are open 8 am to 8 pm daily. Opening hours in the Nairobi clinics were extended to later in the evening to accommodate the working schedule of clients – many Kayole residents typically return back from work after 6–7 pm.

The clinics in the Nairobi area bring in specialists on a regular basis, while the clinics in Central Province occasionally bring in specialists when there is demand from clients. Some specialists are shared across the three LiveWell clinics in the Nairobi area (e.g., they spend a day each week at one of the clinics). In the Nairobi area, clients from each clinic are referred to the appropriate location when they need specialist services.

In most cases, adding services is a matter of demand. Each clinic loosely monitors what types of services clients are requesting. Clinic staff then make recommendations to LiveWell management about adding services that they feel are in demand (e.g., specialist services, or new lab machines). When a decision is made to add specialized services, LiveWell staff often make connections with providers at public hospitals or other providers in the area. Arrangements are made directly with specialists to come to LiveWell clinics at a specified time each week or month.

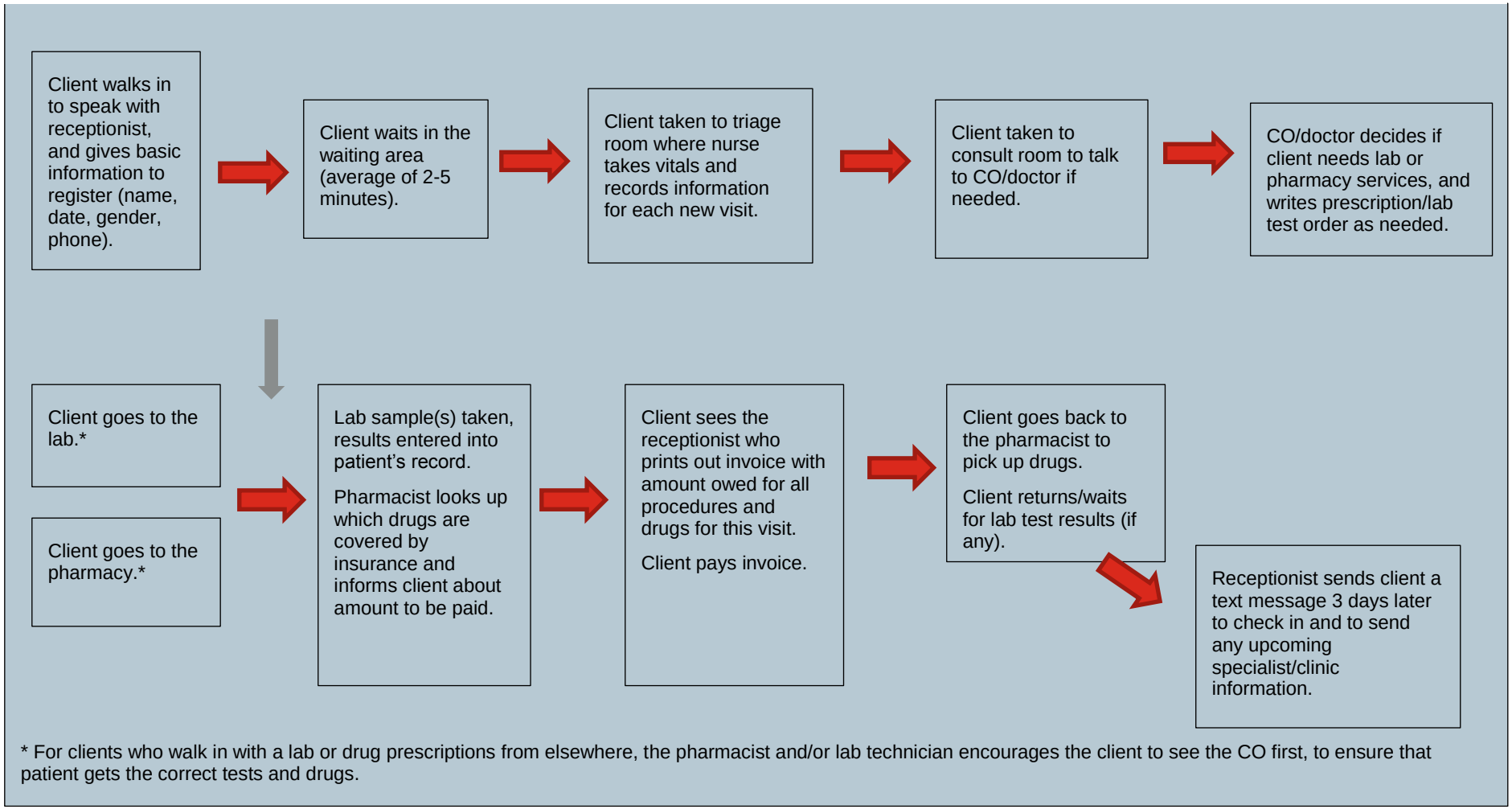
3.3.2 PATIENT MANAGEMENT PROCESS

Figure 1 shows how clients go through the process of getting care at each LiveWell clinic. Clients first check in with the receptionist (or in some clinics, the nurse), who checks if the client has already been to LiveWell or not. New clients are asked for their basic information and registered in the database. They are then asked to sit in the waiting area. The patient is then called into a triage room where a nurse takes vital signs and decides whether the patient needs to be seen by the clinical officer and, if so, how urgently. The nurse inputs the client's information into the computer system (or fills in a patient form in clinics that do not yet have an electronic system). The patient record can then be accessed by the clinical officer, the lab scientist, and the pharmacist as needed. If a full consultation with the clinical officer is not necessary, the nurse can send the client to the lab or pharmacy for tests or drugs. If a consultation is needed, the client is directed to the clinical officer's consultation room.

Oftentimes, clients come in with the intention of going straight to the lab scientist for tests or to the pharmacy to buy drugs (sometimes referred by other facilities). Since self-prescribed care is so common, LiveWell staff encourage all clients who come in to speak with at least the nurse in order to determine what care is necessary. In this way, LiveWell staff are confident that they have all information necessary to prescribe the correct medication or tests.

Clients then go on to see the lab scientist or pharmacist as necessary, both of whom input all prescriptions and services into the database. The pharmacist is usually the last practitioner the client sees, and the pharmacist checks in their manual whether certain medications can be covered by insurance that the client may have. The pharmacist puts the full amount in writing, and the client takes the slip to the receptionist. The receptionist prints out an invoice with the total amounts of all procedures, tests, and drugs (that were populated as the patient saw each practitioner), and the client pays. The client then picks up her drugs, and leaves the clinic. LiveWell staff follow up with reminders and information about clinics and specialist services by text message in the following days and weeks.

FIGURE 1. CLIENT FLOW AT EACH LIVEWELL CLINIC



* For clients who walk in with a lab or drug prescriptions from elsewhere, the pharmacist and/or lab technician encourages the client to see the CO first, to ensure that patient gets the correct tests and drugs.

3.3.3 ALL SERVICES UNDER ONE ROOF: EFFICIENCY AND QUALITY IMPLICATIONS

In the areas served by LiveWell, there are numerous chemists, laboratories, and clinics, many of which claim to be providing comprehensive health services but do not have qualified personnel or the necessary equipment to provide comprehensive primary health care services. LiveWell aims to fill this gap by providing high quality, comprehensive services, including consultation, laboratory, and pharmacy services, in the same physical space. This way, when a client comes in for a consultation, she can get any necessary lab tests and fill prescriptions as needed all in the same place, which is efficient from the client perspective. From the perspective of LiveWell, the shared facility maintenance and management costs allow for better cost-efficiency of each type of service provided in a given clinic.

The model allows LiveWell to monitor the quality of the services and outcomes for clients. The clinical officer treating a patient has timely and easy access to the patient's lab results, medical history, and drugs previously prescribed. Rather than relying on tests from other labs or diagnoses from outside practitioners (who could be less qualified) or from the clients themselves, by having all services under one roof at each clinic, LiveWell is better able to ensure quality of care.

3.4 PRICING AND MARKETING

3.4.1 PRICING OF SERVICES

The consultation fees set by LiveWell were based on a market analysis conducted by the Monitor Group for SHOPS in 2010. According to the clinic-based staff that we interviewed, drug prices and margins at LiveWell are comparable to those in other pharmacies in the areas where the clinics are located.

LiveWell seeks to increase its profit through volume, and not by increasing prices. LiveWell leadership believes that pricing sends a message to the community about what LiveWell is. They want to be seen as affordable, but high quality. Thus, they believe that their prices do not need to be lower than what other providers charge (which could signal poorer quality), but should not be much higher either (to ensure affordability for clients). LiveWell's competitors often advertise "no consultation fees" relying instead on higher margins on the medicines they sell to those who come in for consultation. LiveWell is not considering this type of business model, and believes that as confidence in their brand continues to grow, the fact that they charge consultation fees will not hurt client volumes.

LiveWell has not changed its consultation fees since the amounts were set with Monitor/SHOPS support. However, they are facing some pressure to increase prices, due to inflation.

3.4.2 CONTRACTS WITH HEALTH INSURANCE SCHEMES

According to the 2008–2009 DHS, 7% of women and 12% of men in Kenya had health insurance, with the majority covered by employer-based health insurance (4% of women and 8% of men), while less than 1% were covered by community-based health insurance schemes.[27] The National Hospital Insurance Fund (NHIF) automatically covers formal sector employees, while the self-employed and those in the informal sector can enroll by paying a monthly premium of Ksh. 160. The NHIF only contracts with hospitals and covers primarily inpatient care, although proposed modifications to the benefit package will cover outpatient care, including primary health services and family planning.

The population in the areas served by LiveWell is largely self-employed or informal sector workers, and most do not have comprehensive health insurance covering the primary and outpatient care services provided by LiveWell. Although there are several private and community-based health insurance schemes that serve these populations, their overall coverage is estimated to be relatively low. LiveWell has contracted with a number of these schemes, including Faulu Afya, Apollo Pan African Insurance, Cooperative Insurance Company, AAR Health Services Limited, and First Assurance.

At the time of this evaluation, LiveWell's management estimated that 95% of their revenue consists of out-of-pocket payments by clients. Their eventual goal is to reduce their reliance on direct client payments to 40%, with 60% of revenues derived from insurance. To that end, they are looking for a larger insurance company that would be willing to work with them, and that would develop a product that serves the poor (e.g., by allowing monthly payments and utilizing mobile technology). However, insurance companies typically require the providers with which they contract to have much higher client volumes than what LiveWell has achieved so far. Relying on health insurance payments could also be costly for LiveWell: they estimate that with some insurers they may have to wait for payment for more than 60 days.

3.4.3 SERVICE BUNDLES

In collaboration with SHOPS, and as part of their pricing strategy, LiveWell developed "bundles" of services and tests for specific health care needs, offered at a lower cost than purchasing all of the services and tests separately. Each bundle includes a set number of consultations, lab tests, and discounts on drugs. Four bundles are offered: a "Safe Motherhood" bundle, a "Well Baby" bundle, a "Hypertension" bundle, and a "Diabetes" bundle (Annex D summarizes the contents and price of each bundle). The bundles were marketed as a way for clients who know they will have certain health care expenses to save money by planning for the cost of care ahead of time. They were also intended to promote quality of care, as clients who purchase a bundle were expected to be more likely to follow up on all the visits and tests that their condition required.

At the time of this evaluation, the bundles were not being actively promoted by LiveWell clinic staff, who perceived the products as difficult to sell. As a result, only eight bundles (four Well Baby bundles and four Safe Motherhood bundles) were purchased between April 2011 and

[27] http://hsr2012.abstractsubmit.org/presentations/5289/

March 2012. According to LiveWell management, the lack of internal resources to adequately market the bundles – both to clients and to LiveWell's own staff – was the main impediment to selling these products.[28] The management team was optimistic that these issues will be addressed with the planned hire of a marketing and a sales manager, who will support demand-generation for the bundles and improving clinic staff efforts to promote these products.

According to LiveWell clinic staff who were tasked with marketing the bundles to clients, the reasons for lack of demand differed by type of bundle. The Safe Motherhood bundle was thought to be a tough sell because many pregnant women first seek antenatal care very late in their pregnancies, and it does not make financial sense for them to pay for the full bundle (which includes care over all three trimesters). In addition, staff thought that the lack of delivery services by LiveWell makes the bundle (a package of antenatal and postnatal care) less attractive for women who prefer to get continuity of care from the same provider.

The main problem with selling the Well Baby bundle mentioned by clinic staff was that the services it includes are free at public facilities (where all care for children under five is free as per government policy). There are public facilities in the vicinity of all LiveWell clinics. Staff also thought that women prefer to take their newborn babies for immunizations and other preventive care to the place where they were born, as this is where the newborn receives the first set of immunizations. In addition, two of the LiveWell clinics (Masimba and Kerugoya) were not yet providing immunizations at the time of the assessment.[29]

LiveWell staff felt that there were two key impediments to demand for the Hypertension and Diabetes bundles: (i) lack of a culture of using routine care for chronic conditions; and (ii) reluctance to pay a lump-sum amount upfront for all the services included in the bundle. According to staff, patients with diabetes and hypertension tend to prefer occasional visits for blood pressure or sugar check, or to self-refer to the pharmacy for the drugs. One of the strategies used by a clinical officer in the Nairobi clinics to convince such patients of the necessity and benefits of comprehensive routine care is to follow up persistently with them by phone to remind them to get a check-up or a lab test. He believes that once such patients get more used to coming in regularly for check-ups, and get to know the clinic staff, they will be more likely to want the bundles.

In the context of this experience with the bundles, LiveWell management was exploring ways to modify the bundles to make them more attractive to clients. Section 4 of this report presents our survey results on client perceptions of the bundles.

3.4.4 MARKETING STRATEGIES

When SHOPS initially began working with LiveWell, the project developed and proposed various marketing strategies. These included community outreach through local women's and church groups as well as small businesses, and discounts to clients who came to LiveWell with a referral from a community group. Each community group with which LiveWell partnered was to be given a number that referred clients could use to get discounts when accessing services.

[28] As a senior manager put it "we did not do justice to selling the bundled services."
[29] At the time of the evaluation, these clinics had just received government approval to provide immunizations.

The marketing strategy developed by SHOPS also included formal partnerships with local microfinance institutions and small business associations, such as the *mutatu* (minibus) drivers' association, some of which have their own micro-insurance schemes that could be tapped for paying for LiveWell services. However, at the time of this assessment, the number of clients who had come to LiveWell through referral from such partnerships was relatively low.

Another marketing strategy developed by LiveWell was to have "ambassadors" who would spread the word about the LiveWell clinics. These ambassadors were influential opinion leaders in the community (e.g., leaders of church groups, or government administration). They were also responsible for identifying individuals in the community who could not afford LiveWell's services, but who needed medical attention. Ambassadors would give these clients 'discount cards' that they could use at the clinics. While ambassadors were not employees of LiveWell, and thus not paid for their work, they were also given discounts for services at LiveWell, and given recognition for their work. The amount of the discount given to the referred needy clients was often further customized by LiveWell clinic staff depending on the clients' situation.

The clinical officer and (in Kayole) the community health nurse together chose ambassadors for each facility. In the end, it was up to facility staff to determine how much each client referred to by an ambassador would end up paying, if anything. Each ambassador was to report regularly to the clinical officer about whom they had given the discount cards to, in order to ensure that the cards were not being abused and to confirm that clients were in fact, in need of financial support for services. Ambassadors were later called "community mobilizers."

Over time, the ambassador/community mobilizers' role became subsumed into the work of the LiveWell Community Health Workers (CHWs). CHWs are to spread the word about the LiveWell brand to as many people as possible in the community, and promote the value that LiveWell is offering. Along with LiveWell staff, CHWs go to community events, various types of group meetings, or meet people by going door to door. The CHWs explain how services are better at LiveWell than at public facilities, which are perceived by people as less-costly alternatives. Some CHWs target entire catchment areas around facilities and others target specific communities (like the Somali community in Komarock, near Kayole). CHWs are paid for the hours that they work; some are full time and others are part time. They still try to identify those with immediate needs who cannot afford services, and usually give out approximately 2–3 discount cards per month.

At the time of the evaluation, LiveWell was having difficulty affording enough marketing staff, and CHWs were reportedly stretched too thin in the work that they do. The Karatina clinic has asked LiveWell management to hire a full-time marketing staff person, as they believe that this will help to raise awareness of LiveWell in the community. If this marketing person is successful, it may be a good investment for other clinics as well.

LiveWell management believes that word of mouth has been critical to building a solid client base. While doing outreach and handing out information have been important, they feel that only after people actually tried and liked LiveWell's services did they begin to see higher sales. LiveWell staff conducted informal surveys of clients to get a better sense of what their clients needed and, as a result, changed aspects of their model, like opening on Sundays and staying open longer in the evenings. They believe that much of their success is built on their solid reputation, and that the reason that newer clinics in Kayole have seen client volumes increase faster than the first clinic in the area is because of this reputation in the community.

3.5 QUALITY ASSURANCE PROCESS

LiveWell has a structured quality assurance process that includes regular monitoring of quality in each facility and supportive supervision to clinic staff, led by a full time quality assurance officer who visits each clinic weekly.

A quality monitoring scorecard was developed by the quality assurance officer to track how each facility is measuring up to set standards that LiveWell management has decided upon. The goal is to maintain and improve the standardized procedures and operations that are now in place in all clinics. The scorecard is a structured checklist covering various dimensions of quality, such as clinic cleanliness, proper signage in front and inside the clinics (including services available and costs), proper disposal of medical waste, evidence of staff trained in appropriate procedures (emergency care, referrals, lab, pharmacy, etc.), and completeness of medical records. It also covers measures such as checking whether phones and email are in working order, clients are being welcomed in a friendly manner, medical equipment is in good condition, clean water and electricity are available, patient history is taken properly during consultations, finances are kept in order, and community outreach is regularly undertaken. Many of the indicators on the scorecard were borrowed from the provider accreditation requirements of the NHIF, while others were developed by LiveWell management and the quality assurance officer.

The scorecard was just being rolled out at the time of this assessment. The plans were to assess each clinic using the scorecard on a monthly basis, and then develop a quality improvement plan with the clinic's staff on how to address the areas identified by the scorecard as needing improvement. The plan would include the steps required to improve quality, who is responsible, and when the tasks need to be completed by.

From the management's perspective, the focus of service quality is on ensuring that all staff are following clinical care guidelines at all times. Staff in the clinics that already have electronic patient records are required to list symptoms in the database before a diagnosis can be inputted. Management then reviews a random selection of patient records to verify that correct diagnosis is being made based on symptoms.

3.6 HUMAN RESOURCES

As part of its primary focus on providing quality care, LiveWell has invested in efforts to recruit and keep qualified health staff for its clinics. Clinical officers, rather than doctors, are the highest-level staff employed at the clinics. Referrals to specialists – including doctors visiting the LiveWell clinics – ensure that all patients can be provided or directed to appropriate care. This ensures lower staff costs without compromising the quality of care.

The length of professional experience, and type of previous employment of staff at the clinics varied – some were new graduates and LiveWell was their first employer, while others had years of experience working at private and/or public health facilities of various sizes. Most had first heard of LiveWell from friends/acquaintances who had seen the hiring ads.

Interviews with LiveWell management about the process of recruiting new staff indicated that there was a consistent focus on hiring staff who were not just professionally qualified but also committed to high quality and patient-centered care. Interviews with staff at the clinics revealed that staff are very motivated and had been drawn to LiveWell by the management's ethos that quality of care comes first (and the commitment of adequate resources to ensure quality), by the supportive supervision culture, and (particularly among the clinical officers) by the management skills-building opportunities and the challenge of building up a clinic's business from the beginning, which requires creativity and entrepreneurship. Undoubtedly, the small size of LiveWell has allowed most clinic staff to have direct and frequent interaction with everyone on the LiveWell management team, which is something that staff valued highly. This may be less possible as LiveWell grows, so it will be important for management to ensure that the current practices of supporting clinic-based staff are maintained as management becomes more and more busy overseeing a growing number of clinics.

LiveWell is facing the challenge of finding affordable and high quality practitioners. One of the challenges faced by LiveWell management in finding qualified staff for the clinics is that the number of medical graduates is too low to meet current demand. Many graduates are not professionally licensed. In addition, according to LiveWell management, there is a trend toward professional societies increasing the training requirements for renewing health worker licenses, and the Ministry of Health improving enforcement of licensing requirements. LiveWell is expected to pay for the licensing of staff (which is the typical practice in private facilities), which would drive up operating costs for the clinics and may ultimately need to be reflected in higher prices.

3.7 DRUGS AND MEDICAL SUPPLIES

Drug procurement is done on a weekly basis for all LiveWell clinics, and is organized centrally through the pharmacy at the main Kayole clinic. By Friday of each week, the pharmacist of each clinic sends to the pharmacist at Kayole a comprehensive list of the drugs sold throughout the week, and a request for resupply. A consolidated list of drugs that need to be ordered is then sent to LiveWell management for approval.

Invoices are sent to clinics by email so they know what has been ordered for them, and all drugs are received at the Kayole clinic. Staff from the Nairobi clinics pick up their weekly drug supplies from the Kayole clinic (which is within walking distance to the other two Nairobi clinics). The drug supplies for the Kayole and Karatina clinics are sent to them by courier. The main Kayole clinic is allowed to be overstocked, in the event that other clinics need to be restocked before the end of the week. However, according to LiveWell staff, such needs are not a common occurrence.

The process is kept centralized to ensure the quality of drugs sold in all of the clinics. The pharmacist at Kayole has extensive experience working with drug suppliers and in verifying drug quality (e.g., identifying potentially fake or substandard drugs). She has developed working relationships with reputable suppliers, and focuses on ensuring that only quality drugs are stocked at each LiveWell clinic. When fake drugs are found, LiveWell's policy is to blacklist the supplier and not buy from them again. LiveWell only buys from drug suppliers that are registered and reputable, and reports their sources to the Kenyan Pharmacy Board.

The accountant and quality assurance officer physically go to each clinic to do a stock check each month, to make sure that clinics have sufficient stocks, that no drugs are expired, and that databases are up to date.

3.8 MANAGEMENT INFORMATION SYSTEMS

Each of the Nairobi LiveWell clinics is equipped with a computer so that all records can be electronic. At the time of this assessment, Karatina and Kerugoya had only recently received computers and patient records were still partially paper-based.

Each patient that comes in for a consultation is registered when she comes into the clinic. For the Nairobi clinics, the receptionist, nurse, clinical officer, lab technician, and pharmacist each have their own computers, connected to the internal patient records system. The patient's information is entered into the system by each provider she sees during her visit (i.e., what symptoms/issues the client came in for, vital statistics, whether she needs any prescriptions, diagnosis, lab tests received, drugs received, how much she paid, etc.). The system has some automated checks to ensure that each patient record is complete: for example, a client's record cannot be closed until a diagnosis is put in by the doctor. At the end of the client's visit, the receptionist is able to produce an invoice from the system that lists the services and drugs received by the client and the total payment due.

For the Kerugoya and Karatina clinics that do not have computers for each practitioner, a paper chart is used to record the same information for each client. The chart is passed from one practitioner to the next as the client goes through the clinic. This paper-based system is also used in computerized clinics when there is no electricity or the systems slow down for any reason.

At the time of this assessment, there were two different electronic records systems in use across the five clinics: *Practiceforce*, which is Internet-based, and *Healthsoft*. While Practiceforce is the preferred system in terms of functionality, frequent Internet connectivity problems make its use inefficient as staff have to use paper charts when the system is down, and then enter the data from these charts into the system once the Internet connection is functional again.

When training clinic staff on the use of the database systems, LiveWell explains to staff why certain indicators are important. While trainings are not done on a scheduled or frequent basis, they are offered when the need arises. LiveWell works with an IT consultant to provide training to the staff. Regular training is necessary to ensure that all staff have questions answered, and are adhering to the same policies when filling in information.

The quality assurance officer checks database entries and paper-based records for accuracy and consistency when making visits to the clinics on a weekly basis. A random set of patient records are selected and reviewed each time.

3.8.1 FREQUENCY AND MODE OF REPORTING

The electronic records system at the clinic level produces reports on the number of services provided (patient-provider encounters) and revenues for a given time period; these numbers are reported daily to LiveWell's accountant via text message sent by the receptionist. These text messages include sales broken down by consultation, lab, pharmacy, specialty services, whether health insurance was used, and the total number of services (patient-provider encounters) delivered each day.[30] Physical receipts are sent to the accountant at the end of each week. The accountant then compiles this information on a weekly basis and sends a report to management.

Lastly, a monitoring and evaluation spreadsheet is compiled on a quarterly basis by LiveWell management, which includes information such as the total number of services provided at LiveWell, total revenue, how many clients used health insurance to pay for services, how many bundles were bought, how many outreach events LiveWell staff went to, number of staff at each clinic, the number of discounts given, etc. The format for this was developed by SHOPS. Some information is sent from the clinics to management directly, and some is compiled utilizing the accountant's spreadsheet.

One major drawback of the reporting format available in the current system is that it cannot produce summary reports on the number of clients (i.e., footfall), or the distribution of clients by diagnosis/reason for visit.

3.8.2 DATA UTILIZATION

Revenue and service volumes data are utilized by LiveWell management to track the progress of each clinic's growth and cost recovery. The data on service volume is used by management in decisions related to staffing and assessing suggestions/proposals from clinic staff on addition of services, equipment, etc. Management also looks at the data on outreach activities to understand which methods appear to be working in bringing in more clients, and which are not working. This information is then used to decide how best to spend resources.

Staff at the clinics claim that they use the database to inform their recommendations to management about which specialty services are needed, or if other operational changes would allow for higher client volume. However, because the system cannot produce a report on the distribution or number of patients by types of services or diagnosis, clinic staff will likely have to manually tally such data.

[30] These figures do not equal client footfall, as a client who receives both a consultation and a lab test, for example, would be counted twice.

3.8.3 REPORTING TO THE GOVERNMENT

LiveWell submits a number of reports to the government, including weekly disease surveillance reports and monthly reports on family planning services provided at each clinic. The latter is a requirement as LiveWell is an approved provider of family planning services that receives supplies from the government program. According to staff, unlike many private providers, LiveWell maintains meticulous service utilization and disease reports as required by the government. This has helped LiveWell develop relationships with the public health system that were leveraged for partnerships with public facilities in service provision (described below).

The data entry and collation for all government reports is entirely paper-based, using the official government data forms. Nurses are responsible for recording this information and compiling the reports for submission to the government. Ultimately, LiveWell hopes that the information reported to the government can be built into their regular electronic system.

3.9 PARTNERSHIPS WITH THE PUBLIC HEALTH SECTOR

According to management, LiveWell has aimed to develop and maintain a good relationship with the government public health regulatory and other authorities. LiveWell has reportedly placed a particular focus on ensuring compliance with all reporting requirements and adherence to government guidelines and standards. They feel that they can learn from the government in certain areas, and that maintaining a good relationship can benefit them in the long run (for example, in opening access for LiveWell staff to in-service training of health workers organized by the government).

LiveWell management hopes that the high standards maintained at LiveWell clinics will not go unnoticed by the government authorities. The management team hopes to demonstrate to both the public and private sector that health facilities can be run according to stringent standards, provide good service, and achieve profitability.

LiveWell is also trying to complement the services of the public sector as a way to increase LiveWell's client volume. According to LiveWell staff, services in the public sector are not always free (except for children under the age of five), and there is often a lack of privacy in receiving services. This is particularly true for family planning and other women's health services. When the local public sector hospital in Kayole wanted to do a cervical cancer screening, but did not feel that they would be able to attract the numbers of women necessary to justify the costs because of privacy concerns, they approached LiveWell. By partnering with LiveWell, the hospital was able to use LiveWell's location to attract women, and LiveWell was able to advertise its own clinic and services.

4. COMMERCIAL VIABILITY ASSESSMENT

In this section, we assess the commercial viability of LiveWell by analyzing the trends in service volume, revenues, and cost recovery, as well as efficiency of service provision.

4.1 SERVICE VOLUMES

A client visiting a LiveWell clinic may receive one or more services. The client records system in place at the clinics at the time of this assessment did not count clients, only individual services (tallied by the number of receipts generated at the consultation room, the laboratory, and the pharmacy). In general, the number of service units approximates the number of provider-patient encounters.

Thus, in our analyses, service volumes were measured by the number of receipts for each service line (consultation, laboratory, pharmacy). One unit of service is defined differently for each service line:

- A consultation service unit is defined as one client who received consultation service(s) from a nurse, doctor, clinical officer, or any combination of these providers (e.g., someone seen by both a nurse and a doctor during the same visit would be counted as one consultation service unit).

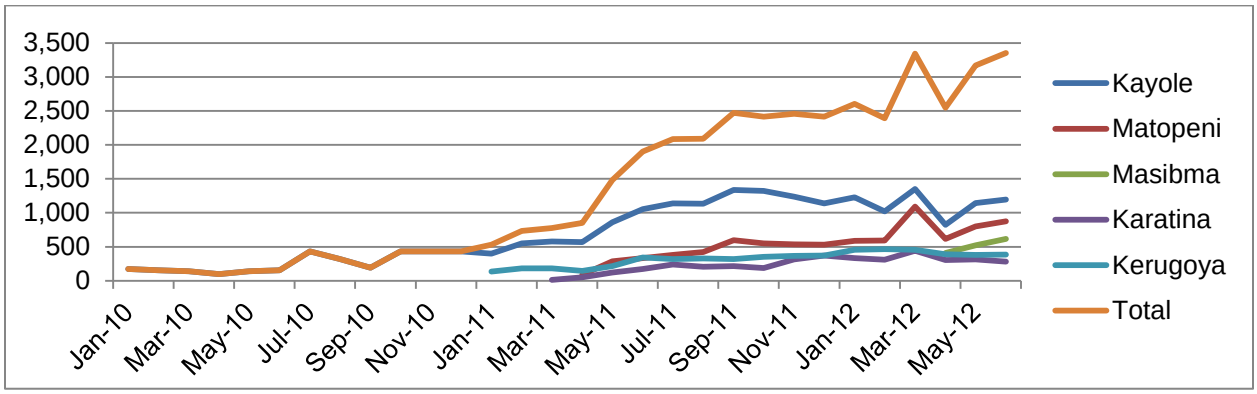
- A laboratory service unit is defined as the set of lab test(s) that one client received during one visit to a LiveWell clinic. Thus, a client who had one lab test conducted will be counted as one lab service unit. A client who had multiple tests conducted as part of the same visit will also be counted as one lab service unit.

- A pharmacy service unit is defined as one client purchasing any number of drugs during one visit to the pharmacy.

- LiveWell records also have a category for “other” services. These include wound dressing, counseling, and specialist services such as dental, ultra-sound, pediatric, or obstetrician/gynecology consultations and procedures.

Service volumes across LiveWell’s five clinics grew steadily over time, reaching 3,350 service units in the month of June 2012 (Figure 2). In the 12 months prior to this evaluation (July 2011–June 2012), total service volumes were more than twice as high as in the year before, and had steadied at an average of about 2,600 units per month. The clinics in Nairobi provided 74% of total LiveWell service volumes in the last year.

FIGURE 2. NUMBER OF SERVICE UNITS BY CLINIC (ALL SERVICES)



We looked at growth in service volumes from year to year for the duration and months of the year for which data was available (i.e., depending on when each clinic opened) (Table 4, in the next section). This allows us to analyze the growth in volume taking into account seasonal factors. Service volumes in the Kayole clinic increased dramatically, almost threefold, from 2010 to 2011. Although the growth rate then slowed, Kayole's service volumes still grew impressively from 2011 to 2012 at about 70% (from January–June 2011 to the same period in 2012). In Karatina, volumes more than doubled over the same time periods. In Kerugoya, volumes in March–June 2012 were nearly three times as high as the volumes in the same time period a year earlier, while in Matopeni, volumes in April–June 2012 were more than double the volumes in the same months a year earlier. As a point of comparison, benchmark data from the ProCapacity Index™ (ProCap Index[31]) shows a 3% growth rate for long-established (more than 20 years) clinics, based on data from Paraguay, Peru, Ghana, and Malawi.

In summary, these patterns show that the volumes that a LiveWell clinic sees in the first few months or a year of operations increase two- to threefold a year later. The experience in Kayole indicates that in the clinics that opened more recently, growth would likely slow down as they enter their third year of operations, but they may still see fairly high increases in volumes.

In each clinic, pharmacy services consistently had the largest share of service volumes, followed by laboratory, consultation, and other services. Over the last 12 months, pharmacy services accounted for 57% of service volumes across all clinics, compared to 21% for laboratory, 13% for consultation, and 8% for all other services. The share of each type of service remained relatively unchanged over time.

[31] ProCap is a metrics-driven tool developed by SHOPS, which provides point-in-time rapid assessments of clinical health nongovernmental organizations. The tool is a platform where industry average data are collected across indexed organizations, allowing for comparisons of multiple organizations.

4.2 REVENUE

Revenue increased steadily over time as new clinics opened doors and service volumes increased. Revenue in the 12 months prior to the assessment saw an increase of more than fourfold from the previous 12 months. The three clinics in Nairobi accounted for 83% of revenue in the prior 12 months, with the main Kayole clinic alone contributing 56% to total revenue.

Table 4 compares, for each clinic, the increase in revenues from 2011 to 2012 to the increase in service volumes discussed earlier – comparing the months for which data were available in both years. (Masimba is excluded from this analysis because it was only operational for three months at the time of the assessment.) The growth in revenue outpaced the growth in service volumes in all clinics. This suggests that per each provider-patient encounter, the clinics are providing more services (e.g., more lab tests) and/or more specialized services (e.g., more sophisticated lab tests).

TABLE 4. REVENUE GROWTH COMPARED TO GROWTH IN SERVICE VOLUME (2011–2012)

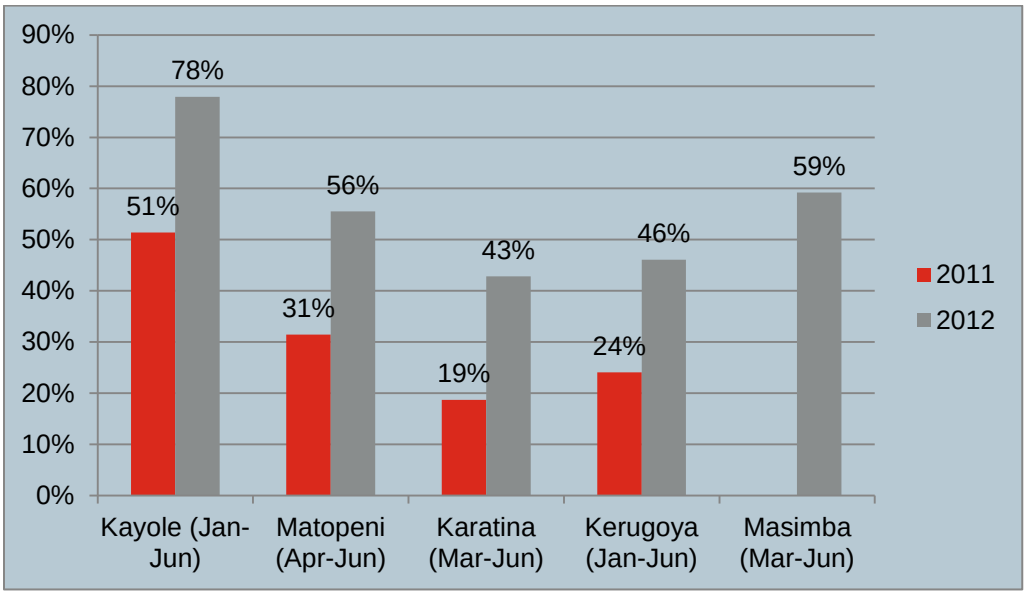
Clinic	Months which are compared for 2011 and 2012	Revenue increase (in given months)	Service volume increase (in given months)
Kayole	January-June	179%	69%
Karatina	March-June	436%	279%
Matopeni	April-June	229%	220%
Kerugoya	January-June	261%	111%

The contribution of each service category to total revenue generally mirrors the distribution of client volumes across service categories: in the last 12 months, pharmacy revenue accounted for 60% of total revenue, compared to 16% for lab and 6% for consultation fees. Other services accounted for the remaining 18% of revenues. The “other services” category includes specialist services (provided by visiting specialists) and accounted for a much higher percent of revenue (18%) than of service volume (8%), suggesting that specialist services are a high revenue-generating service line. On the other hand, ‘consultations’ is a lower revenue-generating service line, accounting for 13% of service volume but only 6% of total revenue.

4.3 COST RECOVERY

An examination of cost-recovery rates in 2011 and 2012 for individual clinics (excluding the headquarters costs) shows that cost-recovery rate in each clinic increased significantly from 2011 to 2012, doubling in some locations (Figure 3). The Kayole clinic was closest to achieving full cost recovery – in the last 12 months, the clinic had 78% cost recovery, with the remaining costs covered by LiveWell's owners. The newest clinic, Masimba, reached 59% cost recovery within the first four months of opening. The trends in cost-recovery rates at the clinic level are thus very promising.

FIGURE 3. COST RECOVERY BY CLINIC, 2011 VS. 2012



In the 12 months prior to this evaluation (July 2011–June 2012), LiveWell's revenues covered 49% of total costs, which included the cost of goods sold (drugs, lab supplies, etc.), the expenditures incurred at the clinics, and expenditures for the headquarters staff and operations. This result is in line with data from the ProCap Index™ which show an average cost-recovery rate among non-profit clinics of 42%.

Total cost recovery increased from 38% in the first six months of 2011 to 44% in the same time period of 2012.[32] The change in total cost recovery from 2011 to 2012 was affected by a substantial increase in headquarters operating costs, as more staff were added (such as a dedicated quality assurance person) and the management team moved to a larger office space. While operating costs for LiveWell headquarters were 5% of total operating costs in 2011, this proportion increased to 57% in the first half of 2012. This large increase is a result of a substantial increase in staff and other operating expense at headquarters level that took place in anticipation of further expansion of LiveWell to new areas (such as Embakasi) and the potential

[32] Cost data for the analysis were only available starting from January 2011.

addition of a maternity clinic, which the Chandler Corporation would fund after it acquired LiveWell in mid-2012.

4.4 CLINICAL EFFICIENCY RATIO

The *clinical efficiency ratio* is an indicator that measures the number of clients served per month by each full-time clinical staff person. It measures throughput relative to human resources, which are often the most expensive resources in a clinical setting. Table 5 summarizes the average number of service units delivered per month in the last year by the clinical professional staff – doctors, clinical officers, nurses, and laboratory and pharmacy staff – in each clinic; the number of clinical staff and the corresponding full-time equivalent (FTE) staff numbers.[33]

The corresponding clinical efficiency ratio varies across clinics, from 163 service units per month in the first Kayole clinic, which has remained the busiest location, to 59 clients a month in Karatina, where client volumes have been lowest over time.

TABLE 5. CLINICAL EFFICIENCY

	Kayole	Matopeni	Masimba	Karatina	Kerugoya
Service units per month [34]	1,172	632	516	294	384
Staff	**Full-time**: 1 CO, 2 Nurses, 1 Lab Tech., 1 Pharm., 1 Receptionist **Part-time** (50%): 1 CO, 1 Lab. Tech **Part-time specialist** (20%): 1 Doctor/Dentist	**Full-time**: 1 CO, 1 Nurse, 1 Lab Tech., 1 Pharm., 1 Receptionist **Part-time** (50%): 1 CO, 1 Lab. Tech **Part-time specialist** (10%): 1 Doctor/Dentist	**Full-time**: 1 CO, 1 Nurse, 1 Lab Tech., 1 Pharm., 1 Receptionist **Part-time specialist** (10%): 1 Doctor/Dentist	**Full-time**: 1 CO, 1 Nurse, 1 Lab Tech., 1 Pharm., 1 Receptionist	**Full-time**: 1 CO, 1 Lab Tech., 1 Pharm., 1 Receptionist
Number of FTE clinic staff	7.2	6.1	5.1	5	4
Clinical efficiency ratio	163	104	101	59	96

[33] An FTE staff is a person who works 22 days a month.
[34] Average in last 12 months, except for Masimba, which had only been open for three months.

It should be noted that clients seen by a nurse and a doctor/clinical officer are only counted once in the service units data (i.e., they are tallied under “consultation services”). Therefore, the clinical efficiency ratio here is somewhat underestimated in all clinics.

Benchmark data from ProCap show, at the time of our study, an average clinical efficiency of 96 patients per month per clinic-based staff FTE (including both professional and non-professional). This suggests most LiveWell clinics are around average efficiency (relative to other clinics in the ProCap database); Kayole is highly efficient, while Kerugoya is on the lower end of efficiency.

The patterns in clinical efficiency and cost-recovery rates are quite similar. The higher-volume clinics serving more patients are able to cover their costs better than the lower-volume locations because they are able to spread fixed costs over a larger volume. For example, Kayole’s clinical efficiency rate is about double that of Kerugoya, and so is its cost-recovery rate. Masimba’s clinical efficiency is about 31% higher than Kerugoya’s, and its cost recovery is about 30% higher. Therefore, increasing footfall in the clinics appears essential to achieving financial viability. This is also an important lesson in analyzing where to open new locations. Trade-offs can be made between having clinics in locations that can bring high client volumes and locations that bring lower volumes, as long as the network as a whole is able to cover its costs and return a profit – which it is well on its way to doing.

5. RESULTS FROM THE HOUSEHOLD AND CLIENT EXIT SURVEYS

This section describes the results from the household survey, which covered an area of about 1 km around each LiveWell clinic and a total of 639 households, and the results from the client exit survey which included 200 clients who had just visited LiveWell clinics.

5.1 WHO IS LIVEWELL SERVING?

To answer this question, we looked at the socio-demographic profile of households in the clinics' catchment areas and the profile of the clinics' clients. In answering the key research question "Does LiveWell serve the poor?," we used several metrics to measure relative poverty status:

- **A wealth index** that uses the model employed in the DHS 2009 analysis;
- **Household expenditures**; and
- **Poverty status** as assessed by the Poverty Assessment Tool.

We looked at whether these metrics all gave a consistent pattern of results on whether LiveWell serves the poor.

5.1.1 SOCIO-DEMOGRAPHIC PROFILE OF HOUSEHOLDS AND CLIENTS

Table 6 provides descriptive statistics of the households and clients included in the survey. (A more detailed version of the table is provided in Annex C.)

Household survey. The households in the areas served by LiveWell were primarily small, young families. Average household size was three to four and less than 10% of individuals were 50 years or older. The majority of households had at least one child under five, although this rate could partially reflect sample selection bias toward families with young children (as discussed in Annex A). About 15% of households in the Nairobi areas served by LiveWell, and a third of those in Central Province, were female-headed. In each area, 40% to 54% of heads of households were self-employed, most in single-person businesses. Across the areas, from 5% to10% of heads of households had a business in which they employed others. From 61 to 71% of households were headed by an individual with secondary or higher education; only 1% had not attended school at all.

Client survey. In the client survey, nearly all respondents were female: 93% in the Nairobi clinics and all in the Central Province clinics. Over 80% were younger than 50 years. This result was in line with expectations: according to LiveWell management and observations by the study team, clients are predominantly female (including mothers bringing young children). Given the small household size in the surveyed areas, respondents were most likely to be either the head of their household or his spouse.[35] Nearly 80% of clients in the Nairobi clinics and 66% in the Central Province clinics had secondary or higher education. This finding implies that LiveWell is very well-positioned to provide family planning/reproductive health services.

In each province, the socio-demographic profile of household and clients was broadly similar. One notable difference is that in clients' households, a higher proportion of household heads employed others in their business, compared to households in the area.

TABLE 6. CHARACTERISTICS OF HOUSEHOLD AND CLIENT SAMPLES

	Nairobi		**Central Province**	
	Households targeted by LW	**LW clients**	**Households targeted by LW**	**LW clients**
	n=360	**n=146**	**N=279**	**n=54**
Household size	3.5	n/a	2.9	n/a
Female-headed households	15%	13%	34%	36%
Occupation of head of household				
Self-employed	40%	49%	49%	54%
Employed by other	56%	50%	38%	44%
Other*	4%	1%	14%	2%
% of self-employed who employ others	13%	35%	19%	31%
	Head of household	**LW client**	**Head of household**	**LW client**

[35] Several questions that were included in the household survey weren't asked in the client exit survey due to concerns of respondent drop-out with lengthier questionnaire (based on the pre-test).

Highest level of education				
No school attended	1%	<1%	1%	2%
Nursery/kindergarten & Primary	19%	22%	32%	27%
Post-primary, vocational	9%	1%	6%	5%
Secondary, A Level	48%	49%	38%	32%
College (middle level) and university	23%	28%	23%	34%
Marital status				
Married or living together	85%	76%	67%	52%
Divorced/separated	3%	3%	6%	10%
Widowed	1%	3%	8%	10%
Never married/lived together	11%	18%	18%	29%
Age				
15-24	12%	26%	11%	22%
25-49	86%	74%	72%	62%
50 and above	1%	<1%	17%	17%

Notes: LW=LiveWell, n/a=not asked

*Other includes unemployed, retired, students, and housewives.

5.1.2 WEALTH PROFILE OF HOUSEHOLDS AND CLIENTS

This section describes the results related to answering the question “Does LiveWell serve the poor?” using the metrics of poverty status listed earlier.

WEALTH INDEX

The results from the wealth index analyses showed that households in the areas served by LiveWell in Nairobi are more concentrated in the poorest and middle wealth terciles than are

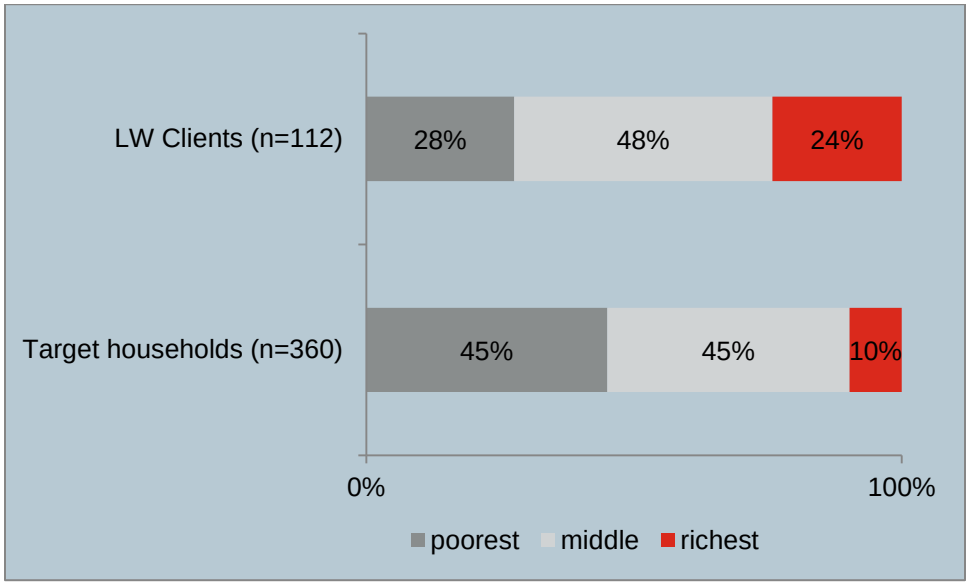
households in the broader Nairobi area. As shown in Figure 4a, 90% of households in the Nairobi areas where LiveWell operates are in the poorest two wealth terciles.

However, in Nairobi, 48% of LiveWell's clients were from the middle wealth tercile, while 28% were in the poorest, and the remaining 24% were in the richest tercile (Figure 3). While only 10% of households in the area were in the richest tercile, this was the case for 24% of clients.

This result indicates that in poor- to middle-income urban areas such as Kayole/Matopeni, the LiveWell clinic model may initially attract primarily middle-income clients but also serve many poorer clients.

FIGURE 4A. WEALTH INDEX DISTRIBUTION OF HOUSEHOLDS AND LIVEWELL CLIENTS IN NAIROBI

(% of households/clients in each wealth index tercile)*



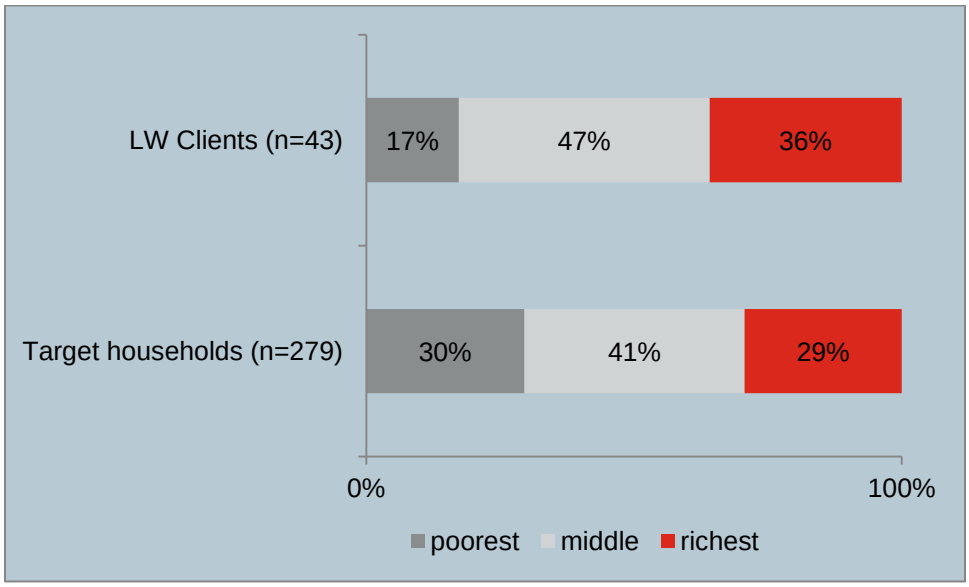
* Wealth index constructed for Nairobi area DHS sample.

The wealth profile of households in LiveWell's catchment areas in Central Province is broadly similar to urban areas in Kenya as a whole, although slightly more skewed toward the middle wealth tercile (41% of households in our sample) (Figure 4b). Thirty percent (30%) of households in the sample were from the poorest tercile. In the Central Province clinics, client exit surveys indicated a wealthier clientele: 17% of clients were in the poorest tercile, 47% in the middle tercile, and the remaining 36% were in the richest tercile.

This result suggests that in areas with the typical wealth profile of urban Kenya as a whole (such as Karatina and Kerugoya), this clinic model may initially attract primarily middle-income clients and also richer clients while serving some poorer clients.

FIGURE 4B. WEALTH INDEX DISTRIBUTION OF HOUSEHOLDS AND LIVEWELL CLIENTS IN CENTRAL PROVINCE

(% of households/clients in each wealth index tercile)*



* Wealth index constructed for Kenya urban DHS sample

HOUSEHOLD EXPENDITURE LEVELS

Data on total household expenditures in the past four weeks were collected through both the household and client surveys. It should be noted, however, that the reliability of these data is limited, due to well-known problems with estimation and reporting biases. We were unable to calculate expenditures per capita for clients as the question on household size was not asked in the client survey due to an omission.

Our data show a similar distribution of households by expenditure groups in the two areas served by LiveWell (Figures 5a and 5b). Less than 20% of households reported expenditures of Ksh. 5,000 or less in the past four weeks; 30% to 40% reported expenditures between Ksh. 5,000 and 10,000; another 30% were in the Ksh. 10,000-20,000; and about 20% reported Ksh. 20,000 or above.

In the Nairobi clinics (Figure 4a), no clients in the exit survey reported household expenditures of less than Ksh. 5,000, compared to 18% of households in the area. While 40% of clients reported expenditures between Ksh. 10,000 and 20,000, this was the case for 28% of households. The share of households and clients reporting expenditures of Ksh. 20,000 or more was the same, 22%. These results suggest an overall similar conclusion to what the other measures of wealth showed: clients are largely concentrated in the middle-income groups, and clients tend to be overall better off than households in their area.

FIGURE 5A. HOUSEHOLD EXPENDITURES IN PAST FOUR WEEKS: DISTRIBUTION OF HOUSEHOLDS AND LIVEWELL CLIENTS IN NAIROBI

(% of households/clients in each group)

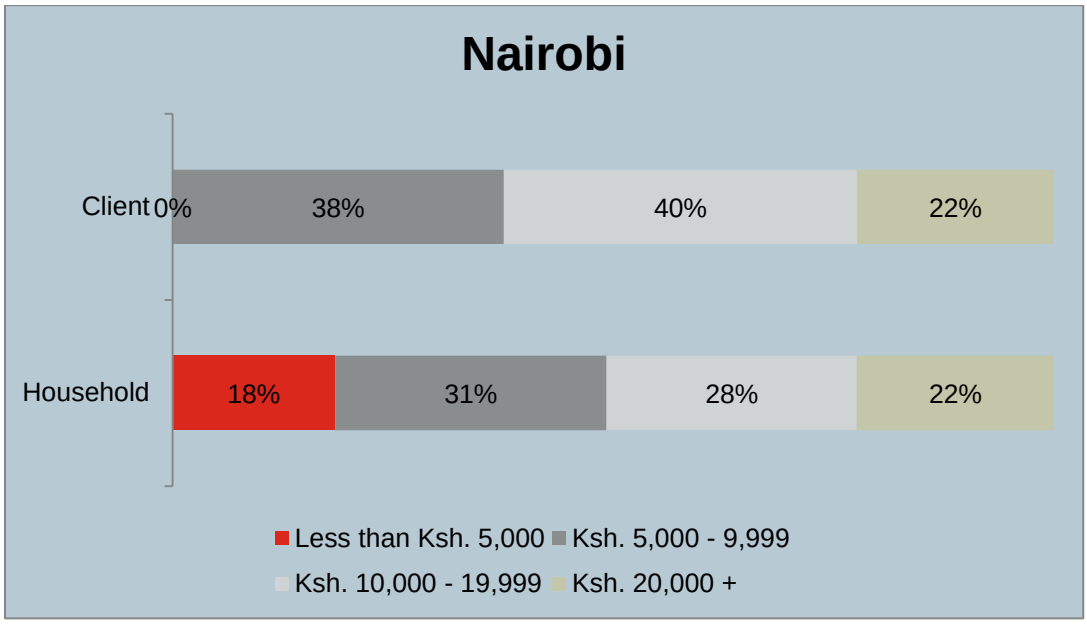
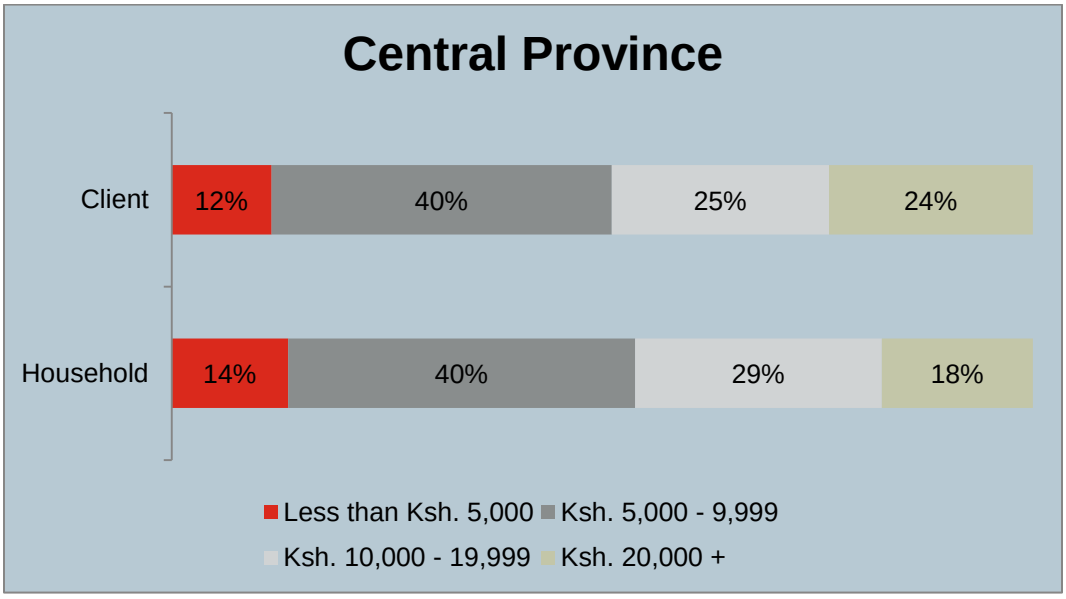


FIGURE 5B. HOUSEHOLD EXPENDITURES IN PAST FOUR WEEKS: DISTRIBUTION OF HOUSEHOLDS AND LIVEWELL CLIENTS IN CENTRAL PROVINCE

(% of households/clients in each group)



In Central Province, the distribution of clients across these four expenditure groups mirrored the distribution of households, which indicates that the profile of clients was similar to that of the population in their area, as measured by household expenditures.

POVERTY ASSESSMENT TOOL

Applying the Poverty Assessment Tool adds some additional support to this pattern of results, in that it estimates lower poverty for the client households compared to those in the target household sample and in comparable areas in the KIHBS 2006. The tool estimates that 12% of the target households are below the Kenya urban poverty line, while 6% of client households are estimated to fall below this line. However, it should be noted that the PAT results come with a wide margin of error in this application, given limited sample sizes and missing variables in the client exit sample.

We also estimated poverty rates at the $1.25/day per person purchasing power parity line (commonly known as the income level that defines the poorest of the poor), but found that no clients or households were estimated to fall below this line.

5.1.3 HEALTH INSURANCE COVERAGE

22% of individuals in surveyed households in Nairobi had health insurance coverage, while 33% in Central Province did. Nearly all of those who were insured had NHIF coverage. The NHIF covers general outpatient curative care only for civil servants (since January 2012). Fewer than five individuals in each site had some other type of insurance (Faulu Afya, Apollo Pan African, AAR, etc.).

Health insurance coverage among LiveWell's clients was very similar, according to the exit surveys: 27% at the Nairobi clinics and 30% at the Central Province clinics, with the vast majority covered by the NHIF.

5.2 KNOWLEDGE AND USE OF LIVEWELL AMONG TARGET POPULATION

All 639 respondents in the household survey were asked about their knowledge of LiveWell (Table 7). Respondents were first asked, unprompted, to name private providers in their area. Very few named LiveWell: 15% in the Nairobi area and 2% in Central Province (8% in Karatina, and none in Kerugoya).

When asked whether they had heard of LiveWell, 33% in the Nairobi areas said that they had heard of LiveWell, compared to 16% in Central Province (20% in Karatina, and 15% in Kerugoya). The majority had heard of LiveWell either through a friend, relative, or neighbor or by seeing the LiveWell clinics themselves.

About half of respondents in the Nairobi area who knew of LiveWell had first heard of LiveWell more than six months earlier, while in Central Province the majority had heard about LiveWell more recently. This difference could be due to the fact that the Kayole clinic in Nairobi was the clinic that has been in existence for the longest period of time.

Only 12 respondents reported having heard of Viva Afya, likely because the new name was adopted just before the start of the survey.

TABLE 7. KNOWLEDGE OF LIVEWELL IN TARGET POPULATION

	Nairobi	Central Province
	n=360	**n=279**
% respondents who named LiveWell as a health provider in their area (spontaneous answer)	15%	2%
% of respondents who have heard of LW	33%	16%
When respondents first heard of LW	**n=114**	**n=48**
Less than 1 month ago	19%	20%
Between 1 and 6 months ago	31%	45%
More than 6 months ago	50%	29%
How respondents first heard of LW	**n=114**	**n=48**
From a friend/neighbor/relative	39%	28%
I saw a LiveWell clinic myself	47%	32%
At a group meeting	2%	7%
LiveWell Staff/CHW	5%	15%
From another LiveWell client	3%	12%

Only 11 individuals from surveyed households had used LiveWell services in the past, all of them from Nairobi. This is equivalent to less than 1% of individuals in surveyed households. They had visited LiveWell for malaria, respiratory problems, antenatal care, postnatal care, and child immunization. Five of them had brought a child to the clinic.

The survey asked about care seeking in case of illness or injury in the two weeks preceding the survey. In Nairobi, 56% of households where someone had sought curative care during this time

period reported using a private provider; the corresponding value for the areas in Central Province was 25%.

5.3 EXPERIENCE WITH LIVEWELL SERVICES AMONG CLIENTS

5.3.1 SOURCE OF INFORMATION ABOUT LIVEWELL

The most frequently cited source of information about LiveWell was word of mouth, mentioned by around half of clients (Table 8). Others simply saw the clinics while passing by. One in 10 heard about the clinics from a LiveWell CHW or other staff member.

TABLE 8. HOW RESPONDENTS HEARD ABOUT LIVEWELL

(% of clients, n=200)

From a friend/neighbor/relative	48%
Saw the clinic	17%
LiveWell/Viva Afya Staff/Community Health Worker	11%
Posters/billboards	9%
Referral from another clinic	7%
From another LiveWell/Viva Afya client	6%
Other	6%

5.3.2 REPEAT CLIENTS

In the Nairobi clinics, 58% of clients had previously been to the clinic where they were interviewed. That was the case for 69% of clients in Central Province.

One in five clients in Masimba had previously been to LiveWell's Kayole clinic nearby, likely before Masimba was opened. A few of the clients in Matopeni had also been to the Kayole LiveWell clinic, and vice versa.

5.3.3 SERVICES RECEIVED AT LIVEWELL

Table 9 summarizes the types of services that clients received at LiveWell. Curative care seeking was the most common reason for visiting the clinics: 39% gave sick adult as the reason for visit and 31% had brought in a sick child.

Around 75% of clients at both sites had received a consultation, 69% received pharmacy services, and 42% received lab services. Some reported receiving "other" services, which included routine check-ups for family planning, blood pressure, weight check, blood sugar check, temperature check, or specialist services such as ultrasound or tooth extraction.

In our sample, only 7% of clients had visited the pharmacy only. In contrast, interviews with LiveWell staff and data on service volumes indicated that a majority of clients only receive walk-in pharmacy services. This discrepancy might indicate that many of those who refused to participate in the study were pharmacy walk-in clients.

One in 10 clients or fewer had come to LiveWell to fill prescriptions or a lab test ordered by another health provider/facility. Less than 5% only received lab services.

Although LiveWell staff encourage clients to seek a consultation when they come in for just pharmacy or lab services, according to staff many clients refuse or do not have the time or resources to do so. Unfortunately, since many pharmacy and lab walk-in clients are likely excluded from our data due to non-response, we cannot measure definitively to what extent this perception is correct.

TABLE 9. SERVICES RECEIVED BY LIVEWELL CLIENTS

(% of clients, n=200)

Reason for visiting LW today	
Antenatal care	7%
Sick child	31%
Family planning	8%
Adult illness	39%
Other	16%
Services received today (% of clients)	
Consultation	75%
Lab	42%

Pharmacy	69%
Other	17%
% of clients who filled a prescription from another health provider	11%
% of clients who received a lab test prescribed by another health provider	6%
% of clients who only visited pharmacy	7%
% of clients who only got lab services	4%

Three out of four clients saw a clinical officer or a doctor, indicating a high quality of care; 32% saw a nurse.

LiveWell clinics follow the triage model of care, in which a nurse first assesses the severity of a patient's needs in order to prioritize how best to use the time of the doctor or clinical officer. Our data indicated that 21% of patients (excluding those who came in with a prescription for the lab or pharmacy) saw both a nurse and a clinical officer or doctor.[36]

5.3.4 CARE FOR SICK CHILDREN

In this section, we report on 54 children age 14 years old or younger who were among the LiveWell clients included in the survey. Two-thirds of these children were under the age of 5.

The most frequently reported symptom for which children were brought in was fever (50%), followed by cough/difficulty breathing (26%), vomiting (21%), and feeding problems (20%). Other, less-frequent reasons included diarrhea, skin sores, typhoid, and eye problems.

According to the Integrated Management of Childhood Illnesses (IMCI) guidelines for children under five, providers should tell caregivers of the danger signs for which to bring a child immediately back (or to another health facility). We looked at the 29 children under five who were brought in for cough/difficulty breathing, diarrhea, fever, typhoid, and malaria, and explored which danger signs were mentioned by LiveWell providers to caregivers. According to caregivers, LiveWell providers had mentioned fever in 76% of cases, poor eating or not eating in 31% of cases, vomiting in 21%, and breathing problems in 17% of cases.

Another part of the IMCI guidelines for children under the age of five is that the provider should measure the height and weight of the child at every visit.[37] This is another area where LiveWell

[36] This excludes the Kerugoya clinic where triage care is not an option, as there is a CO but no nurse.

[37] http://www.who.int/maternal_child_adolescent/documents/pdfs/imci_adaptation_guide_2c.pdf, p.96.

management needs to reiterate IMCI protocols with their providers: in only 6% of cases providers measured both the height and weight of the child (52% of caregivers reported that provider measured neither height nor weight, 39% reported that only weight was measured, and 3% that only height was measured).

5.3.5 CARE FOR SICK ADULTS

In this section, we report on 78 adult clients who came in for an adult illness. They were mostly women between the ages of 15 and 49 years (82%).

Adults seeking curative care in LiveWell clinics came in for a wide variety of illnesses. The most common were malaria (18%), respiratory tract infection or chest/tonsil problems (17%), typhoid (11%), and arthritis/joint pain (10%). Nine percent (9%) sought care for hypertension. On average, patients reported that their symptoms began nine days earlier,[38] which indicates that care seeking was more likely when illnesses became more serious. According to LiveWell staff, many adults wait to seek care until the time of the month when they are paid, which could indicate some difficulty with respect to affordability.

Only 7% of clients were referred to another provider, indicating that LiveWell clinics are able to treat nearly all cases that come to them in-house.

5.3.6 FAMILY PLANNING CLIENTS

Only 18 clients, from all clinics combined, reported coming in for family planning services. This reflects the fact that LiveWell had started providing family planning services relatively shortly before this evaluation. Eight of these 18 clients had been to the same LiveWell clinic before for family planning services. Of the remaining 10, eight had been to other facilities for family planning services, 13 were coming in to follow up on their current method, two were asking about a concern with their current method, two had come in to start family planning, and one was switching to a new family planning method. Both clients who came in about a concern reported that the LiveWell provider had suggested some action to resolve the problem.

Seventeen (17) of the 18 women had thought about which family planning method they wanted to use before coming in: 3 wanted some kind of pill, 1 wanted male condoms, 12 wanted an injectable (Depo-Provera), and 1 wanted an implant. Eleven of the 18 women received their method of family planning at the LiveWell clinic itself, 1 was referred, and 6 neither received the method nor were referred.

Other indicators of the quality of family planning services were explored: 15 of the 18 women reported that the provider explained how to use the family planning method they were given, and 13 of them said that the provider had explained the possible side effects. All 13 women who received explanation on side effects were told what to do if they had any problems, and were told when to return for follow-up.

[38] This is the duration for non-chronic cases for which patients were newly experiencing symptoms.

5.3.7 QUALITY OF CARE INDICATORS

In addition to the IMCI-related results shown earlier, we explored several other measures of quality of care, both for sick children and adults.

Nearly all clients (92%) who had visited LiveWell for an illness reported that they were told the name of their illness (or their child's illness in the case of a sick child) by the provider, and 85% were told about specific symptoms for which they would need to come back to the facility immediately.

Further, 89% of clients reported receiving a prescription at the facility on that day. Of those, 95% reported receiving an explanation of how to take the medications at home, and 95% bought the prescribed medication(s) at the facility that day.

One measure of quality of care is the length of time waiting to be seen by a provider. The average wait time between the time of arrival and seeing a provider was four minutes.[39] Sixty-five percent (65%) of clients said that they "saw the provider immediately."

5.3.8 CLIENT PERCEPTIONS OF LIVEWELL SERVICES

The reasons that clients gave most frequently for choosing LiveWell over other facilities were its good reputation and its proximity to their home, followed by convenient hours, availability of medications, and liking the staff (Table 10).

TABLE 10. REASON FOR CHOOSING LIVEWELL AMONG CLIENTS

(% of clients, n=195)

Good reputation	57%
Close to home	50%
Convenient hours	38%
Medicines are available	34%
Like the staff	32%
Recommended to me by someone I know	23%

[39] This measure is for all 200 clients, including zeroes for those who said they saw the provider immediately.

Less expensive	23%
Referral from another clinic	3%
Experienced good services previously	3%
Other	4%

Quality: Comparing LiveWell to other private facilities, 64% of clients rated the quality of LiveWell services as better than average, and 34% said it was average.

Prices: When asked to compare prices of LiveWell's services with those of other private providers in the area, 68% of clients said LiveWell's prices were average for their area while 27% thought LiveWell's prices were cheaper. This result was similar in each of LiveWell locations.

Affordability: When asked about affordability, 73% of clients "strongly agreed" that the cost of services that they received was affordable, while 20% "somewhat agreed" this was the case.

Only 2% of clients in the Nairobi clinics reported that health insurance covered their consultation fees, and 3% reported that insurance covered their medications. No one in the Central Province clinics reported insurance covering any of their costs.

Client satisfaction: The vast majority of clients had very positive perception of the care they received, including the perceived quality of care, attention by the provider, and convenience of the clinic's opening hours (Table 11).

TABLE 11. CLIENT SATISFACTION WITH LIVEWELL

(% of clients who strongly agreed with each statement, n=195)

I received enough information about my health concerns	90%
Quality of the examination and treatment received were very good	88%
The clinic's hours are always convenient for me	87%

6. LESSONS LEARNED FROM THE LIVEWELL MODEL

6.1 STRENGTHS, ADVANTAGES, INNOVATIONS

One of the main strengths of the LiveWell model is that most services required for comprehensive primary care – consultation, laboratory, and pharmacy – are under one roof. If the referral rate is used as a metric of the extent of LiveWell's ability to cover the type of care needed by its clients, then one interpretation of LiveWell's low referral rate is that LiveWell is able to effectively treat almost all patients who come to its clinics. This would indicate that the types of clients coming to LiveWell are indeed able to receive the complete package of services they need with this model. It also helps in terms of efficiency, because clients do not have to travel back and forth between providers to receive comprehensive care. This convenience is one reason that could attract higher client volumes and repeat clients, which would allow LiveWell to become financially sustainable more quickly. As the survey results showed, a large share of clients are repeat clients. This is a strong indication of client satisfaction which, in turn, will likely contribute to increased awareness and reputation-building through word-of-mouth about the clinics.

LiveWell's approach promotes comprehensive and quality care also by dissuading self-treatment by clients who come to the clinic's pharmacy without a prescription. Such clients are encouraged to get a consultation so that a nurse or a clinical officer can assess their symptoms. Although many still choose to only use the pharmacy, those who do agree to also get a consultation would benefit from more accurate diagnoses and targeted courses of treatment. Another strength reported by LiveWell is the management's commitment to working with the public sector. While the results of this engagement might not become visible until further in the future, it is commendable that LiveWell's management is committed to bringing up the quality of health services in both the public and private sectors through collaboration. LiveWell does not want to compete with the higher-end private facilities, which charge much more for similar services.

Instead, management hopes that the lower-tier providers (e.g., smaller outpatient clinics) will be forced to compete with them once they see LiveWell's success at providing high quality services for lower prices. This will increase access for many individuals in the catchment area. Through compliance with government standards and cooperation, LiveWell also hopes to encourage consistent government enforcement, so that all facilities are expected to meet the same standards as LiveWell.

Among the innovations of the LiveWell model is the use of electronic records, which support better-quality patient care and provide input for management decisions. The flexibility of LiveWell's founders toward promptly adding services that appear to be in demand (as indicated by data or reports from clinic managers/clinical officers) is another factor that helps increase client volumes and revenues.

The formal quality assurance system used by management is an element that is rarely in place in private sector clinics of this size. The way in which this system is implemented, hand-in-hand with supportive supervision, also contributes to the notable high motivation of clinic staff.

Most LiveWell clients are women of reproductive age. The privacy of separate consultation rooms, as well as presence of a nurse and a clinical officer in every clinic, should attract more family planning clients. LiveWell had only recently received approval from the government to provide family planning and numbers of family planning clients were thus still low at the time of this evaluation. But there are indications that this model is well positioned for increasing family planning access in poor to middle-income areas.

The evaluation results indicated that, by operating in low- to middle-income urban areas, this clinic model may initially attract primarily middle-income households, but also serve many poorer clients. Two and a half years after being established, the network reached annual cost-recovery rate of 49%, with the first and largest clinic achieving 79%.

Lastly, one contextual factor to be noted is that the local existing preference for private sector services (particularly in the Kayole area) may have helped in building up client volumes faster that would be the case in areas where the population prefers public providers.

6.2 WEAKNESSES AND CHALLENGES

LiveWell faces a challenge in overcoming the prevailing preferences for self-treatment by going only to a pharmacy. Staff members felt that even after repeated education campaigns, the population in LiveWell's catchment area is often not willing to pay to see a doctor. Instead, they just want medication. Management is hopeful that as their reputation spreads and people see that their services are working for others, this barrier can be overcome.

The service bundles have not been selling due to insufficient sales efforts to by clinic staff and lack of interest by clients. Improving sales of the bundles – which is something that LiveWell management was committed to – could be addressed through modifying the bundles so that they are closer to what clients actually want (even though this may not be the full/optimal package of services). Services could be gradually added as the concept of the bundles becomes more acceptable to clients. In addition, the planned addition of a sales and marketing specialist to the LiveWell team should help greatly with the marketing of the bundles to clients.

LiveWell could consider modifying the reporting functions of the electronic databases so that reports on the number of clients/footfall can be produced automatically from the system, along with a report of the distribution of clients by diagnosis/reason for visit. This would allow for easier production of valuable data for management decisions.

The number of clients who use health insurance for LiveWell services was very low, even though LiveWell does accept several insurance policies. The main reason appears to be the fact that few residents in the areas served by the clinics have these types of health insurance (or other insurance that covers outpatient care). While attracting more clients who have insurance for the types of outpatient care that the clinics provide will improve the affordability of services, this could also create a potential challenge for LiveWell's sustainability given the frequent delays in reimbursements from insurers to providers.

ANNEX A: HOUSEHOLD SURVEY SAMPLE SELECTION

A required sample size of 300 households in each area was determined to allow for proportion estimates at the province level with a margin of error of 6 percentage points (which was considered adequate for the purposes of the study). In each of the two provinces, the required sample size was distributed across the individual neighborhoods or town (e.g., Matopeni vs. Kayole) proportionately to their share of the total study area population. However, the final dataset sample for Nairobi was higher than the required sample for that province, while the final Central Province sample available for analysis was lower than the desired sample. This discrepancy was a result of gaps in coordination of the tallying of daily samples in the field.

The selection of households in the catchment area of each clinic was planned to follow a systematic random sampling process. Random route sampling using the “left-hand rule” and a pre-determined interval of households was used to select households to participate in the survey. This is a common approach for systematic random sampling. In this case, the clinic location was used as the starting point for the route followed by each data collector. Data collectors then proceeded in different directions, selecting every fifth household on the left-hand side, and starting with a randomly selected household between the first and fifth households adjacent to the clinic.

Data collectors made up to two repeat visits to households where no one was at home during the first visit. Non-response rates are summarized in Table A1.

Table A1. Non-response in Household Survey

	Nairobi	Central Province
Nobody home	59	17
Refused	154	87
Interview completed	360	279
Non-response rate (total)	**37%**	**27%**
Refusal rate among eligible people found at home and approached	**30%**	**24%**

The refusal rates in the household survey were higher than anticipated. Reasons for refusal to participate included respondents being suspicious of their answers being recorded on mobile phones (respondents felt apprehensive that they would be voice-recorded, even after data collectors explained this was not the case), refusing to answer questions about the household’s assets/wealth, and women stating that they could not provide information without their (absent) husband’s approval.

Non-response might result in a bias in the results, if the households that were not found at home after the prescribed number of repeat visits or those who refused to participate in the survey happen to be different than those who agreed to participate.

At the data analysis stage, we discovered that the proportion of women 18–49 years old who reported they had given birth in the 12 months prior to the household survey was very high: 66% in Kayole/Matopeni, 70% in Karatina, and 47% in Kerugoya, which likely reflects a bias in the selected sample that occurred during fieldwork.[40] Subsequent discussions with the field teams and supervisors indicated that data collectors may not have been strictly following the prescribed callback procedures, and instead likely interviewed mostly those households where a person was at home during the day (which are more likely to be households where a woman is home taking care of a baby).

To assess the extent to which this might bias wealth index results on the distribution of households in the LiveWell catchment areas, we performed comparisons with the DHS data. As the tables below show, households with a child under one have a wealth index distribution similar to the overall population, both in Nairobi and in urban areas (which are the locations for our survey). This gives us more confidence that the potential oversampling of households with infants that may have occurred would likely not bias substantially our main results.

Table A2. Comparison of the Wealth Quintile Distribution of Households With and Without Births in Last 12 Months, from the 2009 Kenya DHS (% of households in each quintile)

	DHS Urban (n=2,910)	DHS Urban w/ births (n=334)
Poorest	0.96%	0.30%
Poorer	1.82%	2.10%
Middle	2.96%	3.89%
Richer	15.22%	17.96%
Richest	79.04%	75.75%

	DHS Nairobi (n=1,108)	DHS Nairobi w/ births (n=100)
Poorest	0.00%	0.00%
Poorer	0.00%	0.00%
Middle	0.18%	0.00%
Richer	4.69%	1.00%
Richest	95.13%	99.00%

[40] By comparison, in the DHS data, the proportion of women ages 15–49 who gave birth in the 12 months preceding the DHS survey was 11.4% in Nairobi and 10.4% for Kenya urban areas.

ANNEX B: CLIENT SURVEY SAMPLE SELECTION

The sample size determination process for the client exit survey took into consideration the number of clients served per week in each site. Extending the survey beyond a week would have been disruptive for LiveWell. We decided that a sample size in each site that was equal to about half of the estimated weekly client volumes would be adequate for the purposes of the study. This was estimated to be close to 200 clients in total, and allowed for proportion estimates with a margin of error of 7 percentage points, which was considered adequate. The required sample was distributed proportionately to the estimated number of clients in individual clinics.

The sample selection was as follows: Interviewers approached consecutive clients, after the first day of data collection showed that non-response rates would be very high and use of sampling interval would not be optimal to achieve the required sample size within a week.

Non-response rate in the client exit survey, as reported by the survey firm, ranged from 25% in the Kayole clinic to 71% in the Kerugoya clinic. In each site, the leading reason for refusing to participate in the survey was that the respondent was sick/in pain (accounting for 40% of non-response); other reasons given by those who specified a reason for refusal included a crying/irritable baby or being in a hurry. As with the household survey, the high non-response rates could bias the sample (e.g., those who refused may have a different socio-economic profile than those who agreed to participate).

Many respondents among those interviewed refused to answer the questions in the household wealth assets section, as they felt uneasy or appeared apprehensive answering these questions. The data collection team followed up later with those respondents by phone, explaining again the importance of this information and reiterating its confidentiality. Many agreed to provide this information at the follow-up contact, bringing down to 23% the proportion of observations in the final dataset that are missing information on household assets. The non-response rates among clients could cause bias in the results on clients' poverty status. Unlike for the household survey data, we did not have other data on clients that could help us assess the extent to which such bias might occur. Our analysis of the types of services received by respondents at the clinics indicates that a large proportion of clients who refused to participate were likely pharmacy walk-ins.

ANNEX C: ASSET AND DEMOGRAPHIC COMPARISON BETWEEN DHS AND LIVEWELL SURVEY SAMPLES

Table C1 below compares the LiveWell and DHS surveys by location. Across most of the variables in Table C1, the household sample and client sample are broadly similar to the corresponding DHS sample. In Nairobi, the heads of household in our sample were somewhat younger, more likely to be married, and less likely to have college or university education. The profile of our household sample in Central Province was, overall, similar to the DHS sample for urban Kenya.

The vast majority of households in LiveWell catchment areas rent their homes, which is comparable to Nairobi as a whole and urban Kenya in general. In our study sites, the majority of households use flush toilets, more than 75% have piped water, and 70–90% have electricity.

TABLE C1. COMPARISON OF HOUSEHOLD CHARACTERISTICS AND SELECT DEMOGRAPHICS: LIVEWELL SURVEYS AND DHS 2009

	NAIROBI AREA				CENTRAL PROVINCE			
Household Characteristics (% of households (HHs), unless indicated otherwise)	**LiveWell Households**	**LiveWell Client Exit**	**DHS Nairobi**		**LiveWell Households Karatina**	**LiveWell Households Kerugoya**	**LiveWell Client Exit Karatina and Kerugoya**	**DHS Urban Kenya**
Average number of rooms used for sleeping in HH	1.1	1.2	1.5		1.2	1.5	1.5	1.5
Home ownership								
Own	2%	16%	8%		9%	40%	40%	18%
Rent/lease	98%	83%	89%		88%	59%	60%	76%
No rent, with consent of owner	<1%	1%	2%		3%	1%	0%	6%
Type of toilet used								
Flush to piped sewer system and flush to septic tank	57%	72%	71%		61%	28%	39%	45%
Flush to pit latrine	6%	12%	9%		1%	14%	15%	5%
Flush to elsewhere or to	10%	10%	1%		0%	1%	10%	3%

don't know where								
Pit latrine (all types)	27%	6%	18%		37%	50%	36%	46%
Other (bucket, hanging, no facility, other)	1%	0%	<1%		2%	6%	0%	1%
Main source of drinking water over past month								
Piped into dwelling	18%	19%	37%		19%	31%	22%	23%
Piped into plot/yard	71%	68%	41%		62%	56%	55%	33%
Public tap and Tubewell pump	8%	2%	15%		11%	3%	2%	26%
Protected dug well and protected spring	<1%	0%	2%		4%	5%	5%	6%
Rain water collection, unprotected dug well, river/stream	<1%	1%	1%		2%	5%	9%	5%
Other (including bottled water)	<1%	0%	4%		0%	0%	0%	4%
Asset ownership (% of HH who own the following):								
Radio	91%	64%	88%		96%	96%	68%	82%
Refrigerator	10%	26%	31%		38%	14%	16%	21%

Clock/watch	36%	41%	75%		81%	58%	45%	65%
Electricity	88%	98%	89%		73%	67%	81%	66%
Television	82%	97%	74%		76%	71%	86%	57%
Mobile phone	93%	99%	93%		94%	64%	98%	86%
Non-mobile phone	1%	2%	9%		2%	3%	0%	7%
Solar panel	<1%	2%	3%		1%	4%	5%	3%
Bicycle	14%	8%	13%		35%	26%	14%	18%
Motorcycle/scooter	3%	1%	2%		9%	11%	7%	3%
Car/truck	2%	6%	18%		6%	11%	21%	13%
Main source of fuel for cooking								
Electricity	1%	1%	2%		2%	1%	0%	2%
Liquefied petroleum gas/ natural gas	19%	53%	38%		22%	17%	33%	21%
Biogas	4%	1%	1%		0%	1%	0%	1%
Kerosene	63%	42%	44%		16%	5%	18%	27%
Charcoal (includes coal/ignite)	12%	4%	12%		57%	41%	33%	41%

Wood (includes collected and purchased)	<1%	0%	1%		3%	34%	15%	6%
Other (includes straw/shrubs/grass, ag crop, animal dung, no cooked food)	0%	0%	1%		1%	1%	0%	2%
Main material of floor								
Earth/sand, dung	1%	0%	5%		12%	27%	11%	10%
Wood, palm/bamboo, parquet	0%	0%	6%		1%	0%	0%	2%
Vinyl/asphalt, ceramic	4%	8%	8%		2%	1%	5%	5%
Cement	85%	92%	80%		70%	70%	78%	78%
Carpet	10%	0%	2%		16%	2%	7%	5%
Other	<1%	0%	<1%		0%	0%	0%	<1%
Main material of roof								
Grass/thatch/*makuti*, dung/mud	0%	0%	<1%		0%	1%	0%	3%
Corrugated iron and asbestos sheet	57%	88%	61%		94%	97%	98%	80%
Concrete	41%	9%	26%		5%	2%	0%	11%

Other (includes tile and tin cans)	1%	4%	12%		2%	0%	2%	7%
Main material of external walls								
No walls, cane/palm/trunks, dirt	0%	0%	1%		0%	0%	4%	5%
Bamboo with mud/stone with mud/plywood/cardboard/ raw wood	1%	1%	4%		2%	4%	6%	9%
Cement, cement blocks	37%	27%	51%		28%	19%	19%	48%
Stone with lime/cement and brick and wood planks/shingles	57%	72%	33%		70%	75%	71%	31%
Other	5%	0%	<1%		0%	1%	0%	<1%
Demographic Characteristics								
% female-headed households	15%	13%	24%		32%	34%	36%	29%
Age of head of HH								
15-24	12%	26%	11%		13%	11%	22%	12%

25-49	86%	74%	75%		84%	68%	62%	71%
50 and above	1%	0%	14%		3%	21%	17%	17%
Marital status of head of HH								
Married or living together	85%	76%	65%		71%	66%	52%	68%
Divorced/separated	3%	3%	5%		12%	5%	10%	8%
Widowed	1%	3%	3%		2%	10%	10%	6%
Never married/lived together	11%	18%	27%		16%	19%	29%	18%
Highest level of education of head of HH								
None/pre-school	1%	1%	3%		1%	3%	2%	8%
Primary	19%	21%	21%		31%	30%	27%	28%
Post-primary, vocational	9%	1%	1%		2%	7%	5%	<1%
Secondary A-level	48%	49%	39%		51%	34%	32%	40%
College (middle level)	20%	22%	20%		12%	17%	25%	14%
University	3%	6%	16%		3%	8%	9%	9%

ANNEX D: SERVICE BUNDLE DESCRIPTIONS

DIABETES SERVICE BUNDLE

The Diabetes Bundle is a fixed package that includes health services recommended by physicians for people living with diabetes.

When an individual with diabetes purchases the bundle, he/she is entitled to care at a LiveWell health clinic for 12 months. The bundle covers:

- Two consultations per month with a clinical officer at a LiveWell health clinic.
- Blood sugar check with every visit.
- Urine test (urinalysis) twice per year.
- A blood test that shows the average amount of sugar in your blood over three months (called HBA1C test) conducted twice per year.
- The following additional four lab tests of blood and urine will be conducted at the first visit. These tests reveal important information about potential health issues that are common among people with diabetes:
    - Full blood count
    - Microalbumin
    - Lipid profile
    - Serum creatinine
- • Ten percent (10%) discount on the price of any prescription drugs given during the consultation visits.

The cost of the Diabetes Bundle is 5,600 Ksh. (64 USD) in total. These services would usually cost over 8,000 Ksh. (91 USD) if paid per visit.

HYPERTENSION SERVICE BUNDLE

The Hypertension Bundle is a fixed package that includes health services recommended by physicians for people living with hypertension.

When an individual with hypertension purchases the bundle, he/she is entitled to care at a LiveWell health clinic for 12 months. The bundle covers:

- Two consultations per month with a clinical officer at a LiveWell health clinic.
- Blood pressure check with every visit.
- The following five lab tests of blood and urine will be conducted at the first visit. These tests reveal important information about potential health issues that are common among people with hypertension:
    - Urine test (urinalysis)
    - Full blood count
    - Microalbumin
    - Lipid profile

    - Serum creatinine
- Ten percent (10%) discount on the price of any prescription drugs given during the consultation visits.

The cost of the Hypertension Bundle is 3,955 Ksh. (45 USD) in total. These services would usually cost over 5,650 Ksh. (65 USD) if paid per visit.

SAFE MOTHERHOOD SERVICE BUNDLE

The Safe Motherhood Bundle is a fixed package that includes health services recommended by physicians for safe pregnancies.

When a pregnant woman purchases the bundle, she is entitled to care at a LiveWell health clinic for eight months during her pregnancy. The bundle covers:

- Six antenatal consultations with a clinical officer at a LiveWell health clinic. One of these consultations will be with a specialist.
- Full antenatal check-up with every visit.
- The following lab tests, conducted at the first visit:
    - Blood sugar
    - Syphilis test
    - Blood group & Rhesus factor
    - Haemoglobin level
    - Urine test (urinalysis)
    - Serology 1 & 2
    - Hepatitis B
- The following lab tests test, conducted at the third visit:
    - Urine test (urinalysis)
    - Haemoglobin level
    - Serology 1 & 2
- Free medication offered during the pregnancy:
    - Tetanus toxoid vaccine
    - Dewormers
    - Iron tablets and vitamins
- Birth plan, follow-up visit from LiveWell nurse post-delivery, and two postnatal visits.
    - A birth plan means that you will have a discussion with a nurse to plan for the birth. She will help you decide on the place to go for the delivery and how you can prepare to pay for the delivery and emergency transportation (if needed).
- Ten percent (10%) discount on the price of any prescription drugs given during the consultation visits.

The cost of the Safe Motherhood Bundle is 1,785 Ksh. (20 USD) in total. These services would usually cost over 2,550 Ksh. (29 USD) if paid per visit.

For women who are seven months or more in their pregnancy, the cost of the bundle is Ksh. 893 (10 USD).

WELL BABY SERVICE BUNDLE

The Well Baby Bundle is a fixed package that includes health services recommended by physicians for healthy babies.

When a new mother or family with children under the age of 1 year purchases the bundle, they are entitled to care for their baby at a LiveWell health clinic for 12 months after the baby is born. The bundle covers:

- 6 medical consultations for babies under 12 months of age with a clinical officer at a LiveWell health clinic.
- All Ministry of Health-approved childhood immunizations, including Diphtheria, Tetanus, Whooping Cough, Hepatitis B, Hem Influenza.
- Weaning services.
- Weighing and nutritional advice every month for one year.
- Family planning counseling.
- Ten percent (10%) discount on the price of any prescription drugs given during the consultation visits.

The cost of the Well Baby Bundle is 700 Ksh. (8 USD) in total. These services would usually cost over 1,020 Ksh. (12 USD) if paid per visit.