EXTENDING HEALTH INSURANCE TO INFORMAL SECTOR WORKERS IN URBAN SETTINGS: FINDINGS FROM A MICRO INSURANCE PILOT IN LAGOS, NIGERIA

September 2015

The Health Finance and Governance Project

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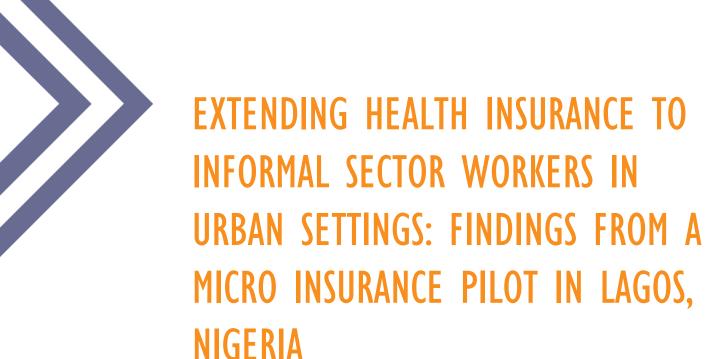Office of Health Systems
Bureau for Global Health

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DISCLAIMER

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ACRONYMS

ANC	Antenatal care
DFID	Department for International Development
EPCMD	Ending Preventable Child and Maternal Deaths
HMO	Health Maintenance Organization
MFB	Microfinance Bank
MNCH	Maternal, Newborn, and Child Health
NHIS	National Health Insurance Scheme
OOP	Out-of-pocket
PATHS2	Partnership for Transforming Health Systems Phase II
PPPHI	Pro-Poor Private Health Insurance
PCA	Principal Component Analysis
PNC	Postnatal care
UHC	Universal Health Coverage
USAID	United States Agency for International Development
WTP	Willingness to pay

ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

As a growing number of low- and middle-income countries commit to achieving universal health coverage (UHC), micro health insurance provides a potential model to finance health services for informal sector workers in the absence of a comprehensive government insurance program targeting that group. Micro health insurance, broadly defined, is health insurance specifically priced and designed to meet the needs of low-income populations. This often means charging lower premiums, offering limited benefit packages, and utilizing alternative distribution channels.

This evaluation was designed to assess the potential of a micro health insurance partnership in Nigeria to improve informal sector workers' access to health services, particularly maternal, newborn, and child health (MNCH) care. The Lagos-based "Pro-Poor Private Health Insurance" (PPPHI) partnership brought together a private insurer and a microfinance bank (MFB) to offer insurance to microfinance loan recipients. The partners hoped to leverage the infrastructure of the MFB and the MFB loan officers' relationships with clients to deliver the product. A willingness-to-pay study and other market research were conducted to design a benefit package that would offer value to these clients; this research indicated that clients were most interested in purchasing coverage for maternity and outpatient care. The product was priced at a level clients could afford and did not require additional subsidies, thereby promoting the sustainability of the scheme. Given fluctuations in clients' income, the MFB agreed to pay premiums to the insurer upfront, while clients could repay the MFB in interest-free installments as they repaid their loans. To improve access to priority MNCH services, there were no waiting periods for eligibility for maternity care. Clients gained access to the provider network of a private insurer that served formal sector workers.

Results from the baseline survey detailed in this report indicated that while female MFB clients represented just over half of the study sample, they were disproportionately more likely to report a need for health services and recalled significantly higher health expenditures than male clients. The survey confirmed that the MFB's clients were in need of improved financial protection. Nearly all clients who reported health events financed their healthcare via out-of-pocket spending prior to insurance enrollment; all respondents were using personal savings and most were relying on support from family and neighbors to finance needed health services. A single health event could be devastating to this group. Average health expenditure for a normal facility-based delivery was $265 (52,700 Naira), or approximately 60% of one month's income for the women's households. Average health expenditure for a hospitalization (excluding deliveries) was $481 (95,730 Naira), close to an entire month's income. The baseline findings support the expectation that the product would offer financial value to the target population. The annual insurance premium was approximately two-thirds of the estimated average yearly health expenditure across the sample and one-half of the estimated average annual total health expenditure for women.

However, survey findings indicated that respondents had poor understanding of the new PPPHI insurance product, their enrollment status, and their entitlement to benefits. Despite the well-researched design of the product, challenges in its implementation (detailed elsewhere) have threatened the potential of the PPPHI. Marketing could be improved by offering financial or in-kind incentives to loan officers to compensate them for time spent enrolling clients in the health insurance scheme and incentivize them to properly inform clients about the benefits of the PPPHI product. More education is needed for the HMO staff selling voluntary insurance, the loan officers enrolling clients, and the clients themselves. Every effort must be made to ensure clients are enrolled properly the first time and benefit

cards are distributed to clients in a timely manner with clear instructions on where and how the cards are to be used.

Offering a comprehensive benefits package including inpatient, outpatient, and maternity coverage is an important start for improving access to quality care for urban, informal sector workers. There is a need for more rigorous evidence on the optimal design of such insurance; the associated effects on patient and provider behavior; and the most efficient processes to expand coverage to this population in urban settings.

I. INTRODUCTION

1.1 The need for financial protection in health

Globally, over one billion people are unable to access the health services needed to effectively prevent, manage and treat their health problems (WHO, 2010). The cost of care paired with limited financial protection is one of the most significant barriers to utilizing health services. As a result, low-income individuals are disproportionately vulnerable to health risks and the associated economic shocks. Of the approximately 150 million people who suffer financial catastrophe each year, more than 100 million of these individuals fall into poverty due to the cost of healthcare. At least 90% of these individuals impacted by health expenses live in low-income countries (Xu et al., 2007), where the majority of the workers are employed in the informal sector and illness is mentioned more frequently than job loss as the primary cause of poverty (Xu et al., 2007, Dodd and Munck, 2002). Although low-income individuals often have informal means to manage risks such as depleting savings, borrowing from neighbors or selling assets, their coping methods often provide insufficient protection to manage both preventative and catastrophic health risks (WHO, 2010, Collins et al., 2009).

Catastrophic health events can be devastating to low-income households, yet managing ongoing, chronic health problems can also contribute to impoverishment. Evidence suggests that while spending on outpatient care may occur in smaller increments, cumulative annual expenditure on outpatient care may be catastrophic for low-income households, underscoring the need for providing financial protection for both inpatient and outpatient care. One study in India suggests that outpatient costs drive three times as many individuals in urban areas and four times as many individuals in rural regions into poverty as inpatient expenses (Berman et al., 2010). Furthermore, evidence from 11 low- and middle-income countries in Asia shows that out-of-pocket health expenditures exacerbate the prevalence and depth of poverty (Van Doorslaer et al., 2006). If medical treatment must be paid for directly, low-income individuals may choose to delay care or rely on traditional methods until their health deteriorates to the point that high-cost health services become necessary (Collins et al., 2009).

1.2 Challenges of insuring the urban informal sector

In low- and middle-income countries (LMICs) where health insurance[1] programs are available, most were historically designed to cater to the needs of formal sector workers, namely civil servants, and rarely include informal sector workers and their families (Cutler and Zeckhauser, 2000, Kimball et al., 2013). In recent years, many LMIC governments have pledged to achieve universal health coverage (UHC) and develop or expand health benefit plans to reduce financial barriers and increase access to priority health services for all citizens. Some LMIC governments, including the government of Nigeria, have opted to enroll formal sector workers in national social health insurance funded through payroll deductions. In other contexts, rural populations are being covered through contributory community-

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[1] Broadly defined, health insurance is a financial mechanism that limits the financial burden of illness on a single household by pooling the risk with others in the community or large population. CUTLER, D. M. & ZECKHAUSER, R. J. 2000. The anatomy of health insurance. *In:* CULYER, A. J. & NEWHOUSE, J. P. (eds.) *Handbook of Health Economics.* Elsevier.

based health insurance schemes. However, covering informal sector populations in urban settings presents unique challenges.

The challenges of enrolling informal workers in contributory health financing schemes have been well documented (Collins et al., 2009, Leatherman et al., 2012, Holtz et al., 2014). These include locating eligible households without a formal address and collecting premium payments from individuals who have limited understanding of health insurance. However, in urban settings in particular, informal sector workers may be transient, difficult to reach through formal, established groups, and unable to predict their income flows (which in rural communities are often associated with harvests or seasons)(Wagstaff et al., 2007, Leatherman et al., 2012, Wagstaff et al., 2014). In addition, while urban populations may not face the same geographic barriers to accessing health services as rural populations, health insurance providers must account for the unique preferences and behaviors of urban informal sector workers. Design of a health benefit plan targeting this population follows the same basic rules of conventional insurance, yet an understanding of these preferences and behaviors, in addition to innovations in marketing and distribution, is critical. Faced with the magnitude and immediacy of the need to increase access to healthcare, strengthen financial protection, and improve health outcomes for vulnerable populations in urban settings, many governments are seeking such insurance innovations.

1.3 The model: Micro health insurance

Health insurance schemes that are specifically designed and priced to meet the needs of low-income households are often referred to as "micro" health insurance. This often means charging lower premiums, offering restricted benefit packages, and utilizing alternative distribution channels. To remain affordable to the target population, micro health insurance products often offer a very basic package of covered services or simply "hospital cash" (a fixed sum to cover hospitalization and costs associated with illness).

Public-private partnerships can help these schemes to achieve scale. A common arrangement has the public sector responsible for mobilizing resources, while a private sector insurance company underwrites the scheme and private distributors (e.g. financial institutions or trade groups) market the product and enroll beneficiaries. In countries such as Nigeria where government-led initiatives for urban informal sector populations have not yet been designed or effectively implemented, private micro health insurance products are being explored as an approach to fill this critical gap (Kimball et al., 2013).

The research described in this report studied such an initiative in Lagos, Nigeria. With support from the U.K. Department for International Development-funded Partnership for Transforming Health Systems Phase II (PATHS2) project, a partnership between a private microfinance bank and a private health insurer was brokered in order to develop and distribute a micro health insurance product for informal sector clients of the bank. Subsequently, the USAID-funded Health Finance and Governance project provided support to evaluate the initiative. The evaluation aimed to better understand the demographic and socio-economic profile of the target population, explore beneficiaries' experiences using the insurance product, and measure the use health services (particularly MNCH services) among those who enrolled in the PPPHI product. Results from the study are intended to contribute to the broader discussion about using micro health insurance to increase access to priority services, particularly MNCH care.

This report provides a brief overview of healthcare financing in Nigeria, background on the private micro health insurance scheme in Lagos, and motivations for the study. Section 3 details the study methods and sampling; Section 4 presents findings; and Section 5 discusses limitations. Finally, Section 6 interprets the findings in the context of the limitations and provides recommendations, and Section 7 provides conclusions.

2. BACKGROUND AND CONTEXT

Examining micro health insurance targeting urban, informal sector workers is particularly justified in the context of Lagos, Nigeria because of the magnitude of the uninsured pool in the most populous country and city in Africa. After China and India, Nigeria is expected to see the greatest urban population growth in the coming decades, with an increase of 212 million people by 2050 (UNFP, 2014). The population of Lagos is already greater than 20 million.

The DFID-funded PATHS2 project[2] facilitated an innovative partnership between a microfinance bank (MFB) and a private health insurance company, referred to locally and throughout this report as a health maintenance organization (HMO), to develop a low-cost micro health insurance product for MFB clients and their families in Lagos. Given the disproportionately female clientele of MFBs in Nigeria, the product was specially designed to meet the needs of women. The "Pro-Poor Private Health Insurance Product" (PPPHI) developed by the MFB and the HMO in partnership with PATHS2 covered a basic package of inpatient and outpatient health services, including maternal and newborn care, at public and private health facilities with no waiting periods. The product was priced to promote long-term financial viability without external subsidies.

The comprehensive PPPHI product provided a unique opportunity to examine not only the potential to reduce financial barriers to quality healthcare for urban, informal sector workers but also to improve access to MNCH services. While health insurance can have a positive impact on the use of health services[3], evidence demonstrating the specific effects on MNCH care access and utilization in low- and middle-income countries is limited (Comfort et al., 2013).

2.1 Health Status and Access to Health Insurance in Nigeria

Despite its rapidly growing economy and middle-income status, health outcomes in Nigeria are poor. Current life expectancy is 51 years and the mortality rate of children under five is 143 deaths per 1,000 live births. With 46% of individuals living below the poverty line, Nigeria has consistently reported among the highest maternal and child mortality rates in the world, accounting for 14% of global maternal deaths (DHS, 2013, 2014); the country is on the list of USAID Ending Preventable Child and Maternal Deaths (EPCMD) countries. Approximately 66% of the burden of mortality is due to communicable diseases, MNCH complications, or conditions related to nutrition. Health care is primarily financed through out-of-pocket (OOP) payments. The most recent data show that total per capita health spending is $69, 60% of which consists of OOP spending (2012).

Few Nigerians have health insurance coverage. Most who do obtain their coverage through formal sector employers, amounting to 2.4% of men and 1.4% of women aged 15 to 49, a figure that has changed only minimally since 2008 (DHS, 2013). An even smaller percentage of people (0.9%) obtain insurance through community-based or voluntary private health insurance purchased from commercial

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[2] The Partnership for Transforming Health Systems Phase II (PATHS2) project was a six-year, national, DFID-funded program to strengthen Nigeria's health system.

[3] Relevant studies include Aggarwal et al. (2010), Islam et al (2012), Ranson et al. (2003), Smith and Sulzbach (2008), Spaan et al. (2012), and Yip et al. (2009).

schemes (DHS, 2013). In Lagos State, 97.7% of the population is not covered by any form of health insurance (DHS, 2013).

Nigeria established a National Health Insurance Scheme (NHIS) mainly targeting formal sector workers in 1999. Despite efforts to expand NHIS coverage in recent years, the scheme covers just 3% of the Nigerian population (five million people). For the formal sector, NHIS premium contributions (15% of workers' salaries with a 5% contribution from employers) are deducted from payrolls. While the Government of Nigeria has publicly announced a goal to expand NHIS coverage to vulnerable populations including urban, informal sector workers as part of its strategy to achieve UHC, no formal action is publicly underway to extend coverage or modify the design of the NHIS to enroll this population. In theory, informal sector workers with the financial means to pay the full contribution out-of-pocket are eligible for several benefit packages but enrollment processes are not well-publicized or understood. The government has outlined a proposed policy to cover rural populations with Community Based Health Insurance (CBHI) (Dutta and Hongoro, 2013).

2.2 "Partner-Agent" Micro Health Insurance Models

The micro health insurance scheme studied in this evaluation used a "partner-agent" model. In this model, a financial organization or non-governmental organization that routinely works with informal sector workers (such as an MFB or a cooperative) serves as the "agent" for a commercial health insurer "partner" (HMO in the case of Nigeria). In other countries, such as the Philippines, the government might serve as the insurance partner. The agent is typically responsible for marketing the insurance, collecting premiums and transferring them to the insurer, and often, enrolling clients in the insurance scheme, distributing benefit cards, or distributing claims payments to insured clients (McCord, 2006). The insurance partner benefits by reaching a new, virtually untapped market. The agent benefits by offering a new product that, if designed properly, should offer value to its clients. For agents that are MFBs, providing health insurance to clients may improve their ability to pay back loans and thus benefit the MFB's financial stability (McCord, 2006).

In the context of moving towards UHC, the partner-agent micro health insurance model may hold promise where governments lack adequate resources to reach or cover the informal sector. MFBs traditionally target female clients who work in the informal sector. These individuals are often disproportionately excluded from access to social health insurance or formal private health insurance products. In contexts where care at public facilities is of poor quality, membership in an affordable micro health insurance scheme could represent one of the few possible channels these individuals and their households have to access affordable, quality healthcare. MFB clients are often among the lower-income segments of the population, lacking financial resources to pay annual commercial insurance premiums in full. By advancing payment for insurance premiums upfront, MFBs can allow clients to benefit from insurance coverage while paying their premium in weekly or monthly installments and mitigating cash flow issues that often limit the affordability of health insurance. In addition, micro health insurance with "cashless" benefits (meaning that participating health facilities can directly bill the insurer, and patients do not have to pay at the point of service) offers similar value to clients, protecting them from having to use savings or borrow money before receiving treatment.

2.3 Development of the Lagos Pro-Poor Private Health Insurance Product

In 2011, the Government of Nigeria expressed interest in the possibility of providing health insurance coverage to urban, informal sector workers by leveraging existing private insurance products and MFB

client networks. If such channels were already in place and functional, it was thought, the government might more rapidly expand coverage by providing premium subsidies rather than directly paying the full cost of care for these households. In response to this interest, the PATHS2 project offered technical support in developing, pricing, and launching such micro insurance partnerships. Several large MFBs and HMOs in Lagos State agreed to partner with PATHS2 project in this effort.

MFB and HMO partners in Lagos were chosen on the basis of a number of criteria, which included adequate size and reach in Lagos State (to ensure a large potential client base for the insurance product pilots) as well as presence in several other states (to facilitate the expansion of this health insurance model to other parts of Nigeria). Private HMOs with which the NHIS already subcontracted for formal sector social health insurance were preferred, given their record of being financially solid insurance underwriters.

In order to design and price a viable product that met the needs of the target population, PATHS2 conducted a joint market research and willingness-to-pay (WTP) study in 2012 with clients of three MFBs active in Lagos. The WTP study investigated the current health seeking behavior of the target population, identifying where clients receive health services and how they finance their care; their perceived health care needs; preferences around proposed benefits packages; and how much clients would be willing to pay to enroll in these packages on an individual basis. In parallel, PATHS2 conducted an in-depth actuarial analysis with three leading HMOs to price these benefits packages.

Results from the WTP study revealed that clients[4] were most interested in and willing to pay the highest amount for maternity-only coverage, at 972 Naira ($6) per month. In comparison, on average, clients were willing to pay 801 Naira ($4.90) per month for comprehensive inpatient and outpatient coverage, suggesting access to MNCH services is a high priority for the target population.[5] Table 1 outlines WTP for health insurance relative to clients' total consumption (a proxy for income) and total health expenditure, among clients at each MFB. Total average health expenditure per month was nearly identical among clients of the three MFBs. Reported WTP for insurance was also very similar across MFBs. While clients from all three MFBs currently spent about 1 - 2% of their total budget on health services, clients indicated willingness to spend about 7.5% of total income on health insurance premiums. The WTP study suggested that clients from all three MFBs were willing to pay more than five times what they currently spend on healthcare[6] for health insurance.

Table 1: Willingness to pay for health insurance, relative to observed health expenditures and as a share of total consumption per month, by MFB

Micro Finance Bank (MFB)	Total monthly health expenditure per client, in Naira (n = 1,343)	Health Expenditure/ Total Consumption per client	WTP per month for first choice package, per client in Naira (n = 1,117)	WTP/ Total Consumption per client	WTP/ Health Expenditure per client
Bank 1*	151 ($0.95)	1.33%	856 ($5.25)	7.55%	5.66
Bank 2	161 ($1.00)	2.22%	808 ($4.95)	11.13%	5.01
Bank 3	144 ($0.90)	1.88%	822 ($5.00)	10.76%	5.71

Note: *This figure excludes the health events of two clients that were identified as outliers.

[4] Clients recruited for the WTP study were group loan microfinance clients with an average loan size of 37,704 Naira ($190).
[5] Based on the conversion ratio from Naira to USD in September 2012 when WTP report was finalized.
[6] The value was calculated by averaging self-reported health expenditures across the total study population.

In November 2012, PATHS2 convened a meeting among the three MFBs and the three HMOs to jointly select health insurance benefit packages that would be sold to the MFBs' clients. Several options had been designed in consultation with micro health insurance technical experts and actuaries. The MFBs agreed upon a package that would cover inpatient, outpatient, and MNCH services (see Table 2 below). Clients would be able to select the level of coverage and the option of enrolling additional family members.

Table 2: Description of the Pro-Poor Private Health Insurance product for MFB clients

Premiums	
Annual premium per person (age 21-65)	7,000 Naira ($35) **
Annual premium per family of six*	40,000 Naira ($200)
Maximum benefit per person	200,000 Naira ($1004)

Benefit package	
Hospitalization	Covered
Consultations	Covered
Prescribed drugs & consumables	Covered
Laboratory/diagnostic tests	Covered
Minor surgeries	Covered
Major surgeries	Not covered
Annual physical examination	Covered
Health education/ counseling	Covered
Maternity services*** Antenatal care† Normal deliveries Caesarean section Postnatal care	Covered
Nigerian National Program on Immunization (NPI) ‡	Covered
HIV/AIDS diagnostics and drugs	Diagnosis covered, patients referred to free government centers for treatment
Optical services	Not covered
Dental care	Not covered

Notes: *A family was defined as the beneficiary, a spouse, and up to four unmarried children under the age of 21. Additional family members can be added for a fee.
**The Basic Plan was offered to MFB clients for 6,000 Naira (US$30).
***There was no waiting period for maternity benefits. Maternity coverage includes emergency transportation from primary to secondary health provider and health services for complications with delivery (e.g. blood transfusions for post-partum hemorrhage).
†ANC services include diagnostic tests (e.g. urine tests, blood tests, STD tests, Strep B), iron folate supplements, anti-malarias, and intermittent preventative therapy. The product does not cover insecticide treated nets.
‡NPI immunizations include BCG, OPV, DPT, and Yellow Fever.

The study described in this report focused on the PPPHI product offered to clients of one MFB which entered into partnership with an HMO. The market research and actuarial pricing studies led these two partners to initially offer the product for 7,000 Naira ($35) per year, for individual coverage. The selected MFB was thought to be an ideal distribution channel for the PPPHI product. Not only did its clients have bank accounts making it easy to collect premium payments in regular increments, but the HMO could leverage the established relationships that the MFB's clients had with loan officers. The

clients were thought to be less risky to insure because they had essentially been vetted by the MFB as long-term borrowers who had successfully repaid their loans.

2.3.1   Initial Implementation of the PPPHI Pilot

The PPPHI product was first piloted in early 2013. Initially, the MFB and the HMO agreed to offer any of the MFB's clients the opportunity to voluntarily purchase the PPPHI product for themselves and their families.

Potential insurance clients can be difficult to locate in urban environments, making it costly and inefficient for insurers to follow up regularly to educate clients, complete enrollment processes, and ensure client satisfaction. In this pilot, the partners tried to leverage the existing relationship between loan officers and clients; loan officers visited clients at their place of business on a weekly basis. Sales staff from the HMO followed the MFB's loan officers as they collected loan repayments from clients. The partners believed that relying on loan officers as "intermediaries" would not only make it easier to locate clients without a formal address, but also help to build trust with potential clients. The MFB advanced premium payments to the HMO up front, and then deducted smaller weekly increments from clients' loan accounts.

In May 2013, the HMO began to express concerns about adverse selection.[7] As many as 20% of the clients with group loans who voluntarily enrolled in the health insurance scheme were pregnant or had a pregnant spouse– leading to higher than expected healthcare costs for the insurer. Unlike many other health insurance products, the PPPHI product had not established a waiting period for any services, including maternity care.

This challenge was compounded by limited understanding of health insurance among the target population. Findings from the WTP study had suggested that fewer than half of the MFB clients had ever heard of any type of insurance; of these clients, 37% had a family member who had ever used insurance and just 4% had ever enrolled in any form of health insurance. Lacking experience with health insurance, some clients may have undervalued its potential benefits for their families. This likely depressed uptake among healthy clients and their families.

But the partners' assumption that MFB loan officers and HMO sales agents could effectively accomplish this "insurance education" function was also not borne out. Loan officers' primary duty was to collect weekly loan payments from their regular customers; having the HMO sales agents provide detailed explanations about insurance took extra time during these visits, for which the loan officers received no additional compensation. HMO sales agents, who received commissions for insurance sales, may have inadvertently encouraged adverse selection by highlighting maternity coverage and other benefits and targeting the "most likely" clients, trying to quickly close the sale.

2.3.2   Revisions to the PPPHI product and processes

In August and September 2013, the PATHS2 project provided technical assistance to formalize revised terms of the partnership between the HMO and the MFB. In particular, the partners agreed to make substantial changes to enrollment processes. To address the HMO's concerns regarding adverse

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[7] Adverse selection is the tendency of individuals who are sicker or more likely to experience a health event (e.g. pregnancy) to enroll in a health insurance scheme. Conversely, healthy individuals may be less likely to voluntarily enroll in insurance, believing they are unlikely to use it.

selection, the MFB agreed to make enrollment in the insurance product mandatory for the MFB's higher-income clients, and all insurance processes were redeveloped.

The MFB offers both group loans and individual loans; clients for group loans tend in general to have lower socioeconomic status than clients for individual loans. The MFB proposed that mandatory insurance enrollment be pilot tested with the better-off individual clients, theorizing that they would be best able to afford the premiums. Thus, as individual loans above 100,000 Naira ($502) were authorized for new clients, and as existing clients renewed their individual loans, these clients were automatically enrolled in the insurance and premiums were added to their loan balances. Simultaneously, the MFB negotiated with the HMO to lower the premium from 7,000 Naira ($35) to 6000 Naira ($30) per year. This essentially meant that the HMO had to subsidize these enrollees. In return, to promote the financial viability of the insurance scheme, the MFB agreed to enroll at least 1000 clients in the first six months. This turned out to be challenging, however, as there were significantly fewer individual clients than group clients.

3. METHODS

In 2013, the USAID-funded Health Finance and Governance project identified the opportunity to evaluate the PPPHI pilot program in collaboration with the U.K Department for International Development-funded PATHS2 project. Results from the study are intended to contribute to the broader discussion about using micro health insurance to increase access to priority services, particularly MNCH care, among urban, informal sector individuals. This chapter summarizes the research questions, data collection, and analysis methods used in a baseline assessment.[8] Section 4 summarizes findings from the baseline study, while section 5 discusses lessons learned and recommendations.

3.1 Research Questions

The overall study purpose was to assess the effects of the PPPHI micro health insurance pilot on access to health services (particularly MNCH services), financial risk protection, and self-reported health outcomes using a pre-post evaluation among micro-lending clients. Assuming that MFB clients did not have access to health insurance prior to it being available through the MFB, and assuming that no other concurrent changes during this time period affected access to health services, this pre-post comparison was intended to provide evidence of the impact of health insurance on these outcomes. The study also explored individuals' initial experience with using the health insurance product and sought to identify ways the insurance product could be improved to better meet the needs of clients.

Frequently, studies of the impact of health insurance tend to suffer from selection bias because individuals who enroll in health insurance programs tend to have different characteristics (in terms of income, health status, and type of employment) than those who decide not to enroll. However, since the PPPHI partners (the MFB and the HMO) agreed to make enrollment in the insurance product mandatory for individual loan clients, endogenous factors that might normally influence an individual's decision to enroll in the insurance – such as knowledge she is pregnant – were believed to have minimal effect.

The baseline survey presented in this report aimed to better understand:

- the demographic and socio-economic profile of the target population for the micro health insurance product,
- beneficiaries' self-reported use of health services, particularly MNCH services, prior to enrolling in the health insurance product, and
- beneficiaries' initial experiences using the insurance product.

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[8] All research activities were approved by the Abt Associates Institutional Review Board and the Nigerian Institute of Medical Research Institutional Review Board. Client participants gave informed consent.

3.2 Data Collection

3.2.1 Sample selection

Based on the terms of the partnership agreement signed by the MFB and the HMO in 2013, MFB clients having a current, individual loan of at least 100,000 Naira ($502) were eligible for the insurance. All of these clients were considered eligible for this evaluation. At the outset of the study, a total 1,386 unique micro-lending clients, registered in the MFB's client roster, were identified as immediately eligible.

Prior to study initiation, the research team planned to randomly select 1,000 of the eligible clients from ten branches of the MFB located throughout Lagos. During the pilot testing of the survey instrument in Lagos, it became apparent that not only were eligible clients extremely difficult to locate, but their businesses were not necessarily located near their assigned MFB branch. As a result of logistical challenges locating clients, inconsistent implementation of insurance enrollment processes (described below), and time and budget constraints, the research team was unable to randomly select clients. Instead, the research team identified clients who could be located with assistance from the loan officers and who were willing to be interviewed. The research team contacted some clients who had just enrolled in the insurance (since the pilot unexpectedly began to be rolled out concurrently with data collection) as well as clients who would be enrolled in the coming months after they renewed their loans.

As noted above, beginning in November of 2013, the MFB began to roll out the mandatory insurance product among clients taking out new loans worth more than 100,000 Naira. Of these clients, approximately 71% had loans ranging from 100,000 to 199,999 Naira (roughly $502 to $1,004 US dollars), while the remaining 29% had loans of 200,000 Naira (approximately $1,004) or more. Concurrent with the launch of this study in January 2014, the MFB decided to change the threshold for mandatory enrollment to 200,000 Naira, fearing that long-term clients would choose to leave the MFB rather than pay the mandatory premium for the health insurance. Clients with loans less than 200,000 Naira were still allowed to enroll in the insurance product on a voluntary basis.

At study initiation, HFG was able to identify through painstaking manual review the 496 eligible clients who had had initial premiums deducted from their accounts. None of these individuals had registered an insurance claim as of January 1, 2014, thus limiting any effect that access to the PPPHI product might have had at the time of baseline data collection. Another 143 individuals were identified who had loans of 200,000 Naira or more and would be enrolled in the insurance in subsequent months. This brought the total target sample to 639 clients who were expected to be enrolled in the health insurance scheme by the end of June 2014.

Out of these 639 clients, 464 clients (73%) were surveyed by the data collection team over a period of 40 days. This represented 33% of the 1,386 clients with individual loans above 100,000 Naira and 45% of clients with individual loans above 200,000 Naira. Of the remaining 175 clients contacted by data collectors who did not complete an interview, 91 individuals could not be located by the data collector to schedule an interview, 63 individuals declined to be interviewed, and 21 individuals failed to show up for interviews scheduled on three separate dates. Reasons for declining to be interviewed included: the client was traveling outside of Lagos (often to their home village), illness or death in the family, concerns the interview would take them away from their business for too long, reservations regarding privacy, and fears the survey was an attempt to locate clients who had defaulted on loans.

3.3 Analysis

Variables included in the baseline survey included client and household demographic characteristics, including a principal component analysis (PCA) asset index variable; indicators of clients' knowledge and understanding of health insurance; and clients' self-reported health seeking behavior and health spending prior to insurance enrollment. Although some clients had paid insurance premiums prior to completing the baseline survey, they did not have access to the insurance product for technical reasons (e.g. not receiving insurance card). For the purposes of this report, all respondents were assumed not yet effectively insured.

3.3.1 Self-reported Household Expenditures

Respondents were asked to estimate their individual and household income. They could report household members' income in daily, weekly, or monthly increments; the research team summed individual contributions to determine total monthly household income. Mean household income presented in the results section excluded the top and bottom 2%, because these data represent outliers beyond three standard deviations of the mean. Only 217 households (47%) reported sufficient information to derive a monthly household outcome estimate; clients cited challenges with recall and privacy concerns as reasons for not providing this information.

3.3.2 Principal Component Asset Index

Given the unreliable nature of self-reported household income and anecdotal evidence that suggested male and female household heads maintained separate accounts to pay for different household needs, a principal component asset index was constructed to proxy for socioeconomic status. The PC analysis used thirty-nine binary variables representing household demographic and asset characteristics with weight given to the top seven components. Using this index, the sample was categorized into quintiles for analysis.

3.4 Limitations

Challenges with the implementation of the pilot and with the logistics of data collection at baseline affected the size and composition of the sample. The same challenges which make urban, informal sector workers difficult to insure – the transient nature of the population, lack a formal address, and, in many cases, limited connections to formal groups or organizations – also limited the research team's ability to survey the target population in an efficient manner. The research team discovered that the MFB's client rosters included multiple entries for the same client or business. The MFB and the HMO used client names instead of a unique identifier to determine which clients should be enrolled in the scheme, who had paid their premium, and who had received their benefit cards; this made sample identification particularly difficult. Data collectors relied on the help of the MFB's loan offers to contact clients, facilitate introductions, and locate the clients' businesses in the absence of formal addresses or updated contact information. Clients were geographically dispersed within the city of Lagos, and data collectors spent more time locating clients than anticipated. More of those surveyed were affiliated with the main MFB branch office that served the most established clients with the largest loans.

As a result of the changes to the product design, the eligible sample of clients was better educated and reported higher household incomes and higher indicators of socioeconomic status than the full population of the MFB's clients. This affects the inferences that can be drawn from the study.

Given the revisions to the design of the PPPHI scheme and associated delays in implementation, data collection occurred concurrently with the rollout of the mandatory health insurance product for individual loan clients.

4. FINDINGS

This section summarizes descriptive results from the baseline survey. Results are organized thematically, according to the key research questions.

4.1 Sample Characteristics at Baseline

The characteristics of clients interviewed for this study are outlined in Table 3. Fifty five percent of the study sample was female. As the MFB clients who were ultimately targeted for the mandatory health insurance product were the most established clients with the largest loans, 45% of the sample had loans greater than 200,000 Naira. This finding is also reflected in the age of the clients, with a mean age of 41 years for men and 43 years for women. Clients were highly educated; nearly 40% of clients completed secondary school and approximately 35% held a university degree or higher. Close to 90% of clients self-identified as the household head.

Table 3. Client characteristics

Variable	Mean (SD)	N
Female	55%	464
Age in years (males)	41 (9.0)	211
Age in years (females)	43 (9.2)	249
Ethnicity		464
Yoruba	70%	
Igbo	24%	
Other	6%	
Married	89%	464
Head of household	88%	463
Education		443
Primary complete	21%	
Secondary complete	40%	
University/polytechnic or higher	36%	
Other	3%	
Any living children	88%	462
Number of living children	3.2 (1.5)	400
Households with at least one child age 5 or younger	41%	464
Average distance to nearest public health clinic (min)	17 (14.1)	293

Nearly all clients were married (89%) and had at least one living child (88%). Close to five percent of female clients and ten percent of male clients reported that they or their wife was currently pregnant.

Approximately 22% of households[9] had at least one child less than two years of age and 40% of households reported at least one child less than five years of age. These represent priority households for obtaining family insurance coverage.

Table 4 presents household characteristics. On average, clients in the sample reported approximately five members living in their households. Most households had a flush toilet, and the majority had access to electricity. Nearly all households owned a refrigerator, a mobile telephone, and a television, while approximately half of all households owned a car.

Table 4. Household characteristics

Variable	Mean (SD)	N
Number of household members	4.8 (1.94)	464
Main source of drinking water for household		464
Bottled water	50%	
Tube well or borehole	41%	
Public tap or standpipe	4%	
Piped into dwelling	4%	
Other	1%	
Type of toilet used by household		464
Flush to septic tank	48%	
Flush to piped sewer system	44%	
Flush to pit latrine	6%	
Other	2%	
Share toilet facilities with at least one other household	30%	464
Household has electricity (electricity grid or generator)	63%	463
Main source of cooking fuel		464
Gas	54%	
Kerosene or oil	40%	
Other	6%	
Main material for roof of dwelling		464
Roofing shingles	31%	
Wood	28%	
Metal	20%	
Asbestos	13%	
Cement	8%	
Main material for floor of dwelling		463
Vinyl or asphalt	44%	
Ceramic tiles	38%	
Cement	12%	
Other	6%	
Number of rooms in dwelling	3.7 (1.95)	462

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[9] A household is defined as a group of people who currently sleep in the same dwelling and share meals. All household members who have been away from the household for more than six months are not considered to be household members unless they are still identified as head of the household, are newborn children, are students who are still financially dependent on the household or are seasonal workers who contribute to the household income.

Variable	Mean (SD)	N
Household asset ownership		
Air conditioner	42%	
Refrigerator	93%	
Gas cooker	42%	
Mobile telephone	99%	
Television	99%	
Computer	41%	
Car	53%	

Nearly all clients were self-employed in the informal sector (92%) as shown in Table 5. Most clients had small businesses where they sold clothing, general merchandise, or groceries and ready-made food. The average monthly self-reported income per-capita was 23,556 Naira ($118) among those who reported their income; however only 47% of clients were willing to report their monthly income. Clients who reported having household savings greater than zero (about one-quarter of the sample) had an average of 202,454 Naira ($1,017) in current savings.

Table 5. Self-Reported household income

Variable	Mean (SD)	N
Employer		456
Self-employed in the informal sector	92%	
Formally employed in the private sector	5%	
Formally employed in the public sector	2%	
Other	1%	
Type of business		454
Clothing, footwear, and accessories	27%	
General merchant	19%	
Groceries/food products	14%	
Ready-made food/beverages	12%	
Services	6%	
Charcoal/kerosene sales	6%	
Transportation	6%	
Building materials	5%	
Electronics	4%	
Other	1%	
Primary source of household income		456
Self-employed non-agriculture	90%	
Regular wage/salary earning	8%	
Remittances	2%	
Total monthly self-reported income per-capita	23,556 (34,451)	217
Total self-reported household savings (formal and informal)	47,610 (162,881)	455
Total self-reported household savings (formal and informal if savings>0)	202,454 (286,331)	107

Table 6 presents average household income, loan, and savings figures by asset index quintile. Overall, mean monthly household income was 100,447 Naira ($844) while median monthly household income was 50,000 Naira ($251) for all clients who reported data. Across quintiles, average monthly household income ranged from 42,618 Naira ($214) in the poorest quintile to 146,770 Naira ($738) in the wealthiest quintile. While mean monthly household income for quintile 4 was greater than quintile 5, this can be attributed to one outlier within quintile 4. Mean and median loan size increased by quintile.

Table 6. Income, savings, and loan amounts by asset index quintile

Variable	Monthly Household Income		Size of Most Recent Loan		Total Current Savings with the MFB	
	Mean (SD)	Median (N)	Mean (SD)	Median (N)	Mean (SD)	Median (N)
Quintile 1	42,618 (98,761)	20,000 (38)	251,500 (151,257)	180,000 (76)	87,146 (78,219)	60,000 (48)
Quintile 2	69,646 (119,540)	30,000 (41)	293,150 (246,606)	200,000 (80)	87,776 (121,750)	60,000 (53)
Quintile 3	71,357 (87,365)	47,500 (42)	350,513 (372,942)	220,000 (78)	78,816 (58,985)	72,500 (58)
Quintile 4	151,880 (146,449)	100,000 (46)	452,395 (300,544)	400,000 (80)	102,115 (73,787)	81,000 (59)
Quintile 5	146,770 (158,051)	100,000 (50)	531,845 (619,615)	500,000 (84)	89,865 (70,813)	72,500 (52)
Overall	100,447 (133,768)	50,000 (217)	378,826 (390,417)	320,000 (398)	98,274 (82,794)	65,500 (270)

The data show that households in the wealthier quintiles, on average, had larger loans than households in poorer asset quintiles. However, it appears that clients across all socio-economic levels self-reported similar levels of current saving with the MFB.

4.2 Awareness of Insurance

The survey's questions on awareness of insurance allowed clients to list any insurance products that they had heard of, as well as any insurance used by any members of their household. A majority of clients had heard of health insurance (58%). Approximately one-third of clients had heard of motor (car) insurance, and one-third had heard of life insurance (even though life insurance is mandatory for all of the MFB's clients).

Table 7. Awareness of insurance

Variable	Percentage	N
Type(s) of insurance heard of[10]		464
Health	58%	
Motor (car)	34%	
Life	33%	
Home	16%	
Other (e.g. fire or business insurance)	10%	
Household member insured by any type of insurance (≥1 member of extended family insured)	52%	400
Amount of time believed enrolled in the PPPHI scheme (among those enrolled)		273
Less than 3 months	12%	
3 – 6 months	51%	
More than 6 months	20%	
Does not know	17%	

As shown in Table 7, approximately half of the clients (52%) had at least one family member within their extended family who was covered by any type of insurance; other clients did not report a family member who was insured or said that they were uncertain whether any family members were insured.

Approximately 50% of enrolled clients reported that they had been enrolled within the last three to six months. Twenty percent of enrolled clients reported that they had been enrolled for more than six months and an additional 17% stated that they did not know how long they had been enrolled in the insurance scheme. However, the MFB had only begun deducting premium payments and distributing insurance cards to beneficiaries a maximum of three months prior to the survey. It is possible that clients did not accurately recall their enrollment date. The relatively large number of clients who thought they had been enrolled for longer than the product was available suggests that they are not fully aware of the health insurance product and its policies.

4.3 Correlates of Insurance Enrollment

The majority of clients (59%) in the study sample reported that they were enrolled in the health insurance scheme at the time of data collection and an additional 9% stated that they were uncertain whether they were enrolled; 32% of clients stated that they were unenrolled in the PPPHI scheme at the time of the baseline evaluation. Table 8 presents demographic and socio-economic indicators according to insurance enrollment status. Clients in the highest wealth quintile were the least likely to be enrolled in the PPPHI scheme. Surprisingly, the average loan size for clients who were uninsured or uncertain of their enrollment status was higher than the average loan size for individuals who were enrolled in the PPPHI scheme. Enrolled clients were more likely to have a family member currently insured by any insurance product.

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[10] For the questions evaluating awareness of insurance, respondents were asked to name any type of insurance they had heard of, and for households who confirmed someone in their household was currently covered by any form of insurance, the type(s) of insurance. The enumerator was instructed not to read the list to the client and note all types of insurance that apply.

Table 8. Enrollment of clients in PPPHI product (column percentages)

Variable	Among those enrolled in individual or family insurance products (N=273)	Among those unenrolled[11] (N=146)
Female	54%	55%
SES Quintile		
Quintile 1	22%	12%
Quintile 2	19%	23%
Quintile 3	22%	17%
Quintile 4	21%	20%
Quintile 5	17%	27%
MFB loan size		
<100,000 Naira	5%	6%
100,001 – 200,000 Naira	43%	16%
>200,000 Naira	52%	78%
Average loan size	328,849	442,848
(SD)	(129,648)	(295,700)
Average monthly HH income	94,082	119,405
(SD)	(129,648)	(130470)
Household member currently insured by any insurance product	54%	43%

4.4 Preventive Healthcare Utilization

Table 9 focuses on use of preventive health services by any member of the household in the prior year. The most common preventive health services reported were medical tests including blood pressure (46%), malaria diagnostic test (36%), blood test (32%) and urine test (22%). Approximately one-third of clients reported that at least one member of their household received a health check-up in the last 12 months. Sixteen percent of clients reported receiving an HIV test. Thirteen percent (13%) of clients stated that a woman in their household received a gynecological exam but almost none received a pap smear (1%). Other preventive health services including eye exams (7%) and dental exams (5%) also had low utilization rates.

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[11] Unenrolled only includes clients who definitively stated that they had not been enrolled in the PPPHI scheme (defined as having premium payments deducted from their savings account). The 45 individuals who were uncertain of their enrollment status were excluded the findings detailed in Table 8.

Table 9. Use of preventive health services by any household member

Variable	Percentage	N
Any household member received preventive health service in past 12 months		441
Eye exam	7%	
Hearing exam	1%	
Blood pressure test	46%	
Urine test	22%	
Blood test	32%	
Dental exam	5%	
Malaria diagnostic test	36%	
Dengue fever test	2%	
Pap smear	2%	
HIV test	16%	
Gynecological exam	13%	
Overall health check-up	34%	
Preventative health services for children (among clients with ≥1 child)		345
BCG vaccine (Under 1 year of age)	62%	
Measles vaccine (Under 2 years of age)	64%	
DPT Vaccine (Under 2 years of age)	50%	
Polio vaccine (Under 2 years of age)	64%	
Vitamin A supplements (Under 5 years of age)	81%	
Deworming medicine (Under 5 years of age)	78%	
Well-child visit/growth monitoring (Under 5 years of age)	59%	
Circumcision (male children under 1 year of age)	27%	

Among households with at least one child under one year of age, 61% reported that the child received the BCG vaccine to prevent childhood tuberculosis and meningitis. Among children under two years of age, 63% had received the measles vaccine, 50% had received the DPT vaccine, and 64% had received the polio vaccine. While the majority of clients reported having vaccinated their children with the main childhood vaccines, these rates are lower than the vaccination rates in the most recent DHS figures for Lagos State (DHS, 2013). This could be the result of challenges with recall. It could also be due to limitations within the health system, since these households are likely wealthier than those targeted for vaccination campaigns but poorer than those with access to health insurance through the NHIS. A majority of the clients' children under five had received Vitamin A supplements (81%), deworming medication (78%), and a well-child visit (59%).

4.5 Hospitalizations

Six percent of all females in the sample (11 clients) delivered a baby in the past year, all in a hospital (Table 10). Close to seven percent of all clients (29 individuals) reported a hospitalization for a health event other than a delivery in the last year; eight clients who delivered in the past year were hospitalized again for a different ailment. Among reported hospitalizations in the past year, 28% were for a delivery.

Table 10. Hospitalizations in the past year

Variable	Percentage	N
Percentage of female clients with hospital delivery in past year	6%	193
Percentage of all clients with a (non-delivery) hospitalization in past year	7%	446

4.6 Use of Maternal Health Services

Given the small number of clients who delivered in the past year (n=11), it is difficult to draw robust conclusions about maternal and newborn healthcare seeking behavior for this sample of clients. Among the clients who delivered in the past year, 82% delivered at a private clinic and two reported having a Caesarean section. In comparison, the 2013 DHS found that 56% of women in Lagos State deliver in a private health facility. All women were assisted by a skilled health provider compared to 87% of women assisted by a skilled provider in Lagos State (DHS, 2013). Two of the women reported receiving a blood transfusion for the delivery, and two reported receiving drugs to stop excessive bleeding. In addition, four women reported receiving drugs to prevent infection, and one woman reported receiving drugs to make contractions stronger. This evidence suggests that these particular clients have access to critical MNCH services during and following delivery. However, the small sample size and the potential difficulty in recalling which services were received at delivery makes it challenging to draw firm conclusions from these data. It is difficult to determine whether the clients currently have access to healthcare providers who are able to provide comprehensive MNCH benefits. Nearly all women who delivered in the past year reported receiving postnatal care provided by a healthcare provider (91%).

Table 11. Client deliveries within the last year

Variable	Percentage	N
Vaginal delivery	82%	11
Location of delivery		11
Public hospital	9%	
Private hospital	9%	
Private clinic	82%	
Assistance with delivery (multiple responses allowed)		11
Doctor	55%	
Nurse/midwife	64%	
Traditional birth attendant	9%	
Family member/friend	0%	
Healthcare provided during delivery		11
Blood transfusion	18%	
Drugs to stop bleeding	18%	
Drugs to prevent infection	36%	
Drugs to make contractions stronger	9%	
None	18%	
Postnatal care provided by healthcare provider	91%	11

Table 12 provides data on how clients financed their delivery care. Only half of all clients who had a delivery reported having incurred expenses for a doctor or nurse fee (n=5), for hospital room and board (n=5), and for treatment and medications (n=6). Approximately a third incurred expenses for transportation (n=4), and almost 20% incurred expense for lab tests or X-rays and 20% for room and board for a companion. While clients reported having incurred expenses for these different categories, fewer were able to provide expense amounts due to challenges with recall (common responses included 'I do not remember' or 'my husband paid the bill'). Based on the available data, it is difficult to ascertain the financial burden of paying for a delivery out-of-pocket. Clients either reported estimated total spending on the delivery or spending by expense category. Of the clients who reported total spending, the results show that average spending for a normal delivery was 52,702 Naira ($265). The operation

fee for a Caesarean section was 150,000 Naira ($754). All of the clients paid for the delivery out-of-pocket and/or used savings. No clients reported using health insurance, and common responses suggest that clients were not covered by a health insurance product that covered deliveries or did not know enough about health insurance. Nine clients (82%) reported that they were now enrolled in the PPPHI scheme but none were enrolled at the time of delivery.

Table 12. Financing of client deliveries in past year

Variable	Percentage	Mean Expenses (SD)	N
Expenses incurred for delivery			11
Doctor/nurse payment	46%	255,500 (15154)	
Hospital room and board	46%	--	
Operation fee	9%	150,000	
Treatment/medications	55%	--	
Lab tests/x-rays	18%	--	
Transportation	36%	1,164 (290)	
Room and board for companion	18%	--	
Average expenses incurred for normal delivery		52,702 (55,115)	5
Health insurance used to cover some costs of this delivery	0%		11
Why health insurance was not used			11
Does not have insurance	36%		
Does not know where could use insurance	27%		
Does not know how to use insurance	27%		
Treatment not covered by insurance	9%		
Savings/personal cash used to pay for all or part of the costs of the delivery	100%		11

All clients who delivered in the past year reported receiving antenatal care (ANC) (Table 13). While three clients stated that they had received 8 to 10 checkups during their pregnancy, most clients did not remember how many checkups they received. Most clients received ANC care at a private clinic (70%). During their pregnancy, clients report having received a blood pressure test (91%), fetal growth monitoring test (73%), urine test (82%), blood test (64%), and test for sexually transmitted infections (64%). Fewer clients received a fetal movement test (27%) or a strep B test (18%). All women received a tetanus toxoid injection, and all but one client received iron folate pills. To reduce exposure to malaria, 73% of clients received anti-malaria pills and 46% were given a bed net. These numbers are higher than the values reported by the DHS for access to antenatal care tests for Lagos state in 2013. In addition to lab tests and antenatal care services, the majority of clients (64%) had developed a birth plan.

Table 13. Client healthcare seeking behavior during pregnancy

Variable	Percentage	N
Received check-ups while pregnant	100%	11
Number of check-ups with a health provider		11
8–10 check-ups	27%	
Does not know	73%	

Variable	Percentage	N
Healthcare provider where antenatal care sought		10
Private clinic	70%	
Public hospital	20%	
Private hospital	10%	
Antenatal care lab tests received		11
Urine test	82%	
Blood test	64%	
Test for STIs	64%	
Strep B tests	18%	
Blood pressure	91%	
Fetal growth monitoring	73%	
Fetal movement (heartbeat)	27%	
Antenatal care services received		11
Iron folate pills	91%	
Anti-malaria pills	73%	
Tetanus toxoid injection	100%	
Bed net	46%	
HIV test	46%	
Birth plan	64%	

4.7 Use of Non-delivery Inpatient Health Services

Table 14 presents data for the 29 individuals hospitalized during the last year, excluding deliveries. Clients who were hospitalized in the past year were disproportionately female (84%). In addition, nearly one-third of all clients who were hospitalized in the past year were in the poorest quintile (29%) compared to 16% in the wealthiest quintile.

Aside from deliveries, the most common reason for hospitalization was malaria (41%). Another one-third of clients were hospitalized because of general aches and pains. Some of these particular hospitalizations were later diagnosed as being due other illnesses such as typhoid. Other conditions requiring hospitalization included diabetes (7%), hypertension (10%), and accident/injury (7%). Approximately 41% were hospitalized at a private hospital with an additional 17% hospitalized at a private clinic. Thirty-one percent were hospitalized at a public hospital.

Table 14. Client hospitalization within the last year

Variable	Mean (SD)	N
Main reason for admission		29
Diabetes	7%	
Malaria	41%	
Hypertension	10%	
Accident/injury	7%	
Other (aches and pains e.g. back ache)	35%	

Variable	Mean (SD)	N
Type of health facility visited		29
Public hospital	31%	
Private hospital	41%	
Private clinic	17%	
Other	10%	
Minutes traveled to reach facility	22 (18.8)	22

Table 15 reports how clients financed hospitalizations during the past year. Total expenses incurred for hospitalization equaled 103,458 Naira ($520) on average. This was equivalent to 96% of total reported monthly income.

Just three clients reported using some form of health insurance to cover these expenses. The most common reasons for not using insurance include not having insurance (22%), not knowing where insurance could be used (22%), and not having an insurance card (30%) suggesting that clients are either not insured or had not received a health insurance card allowing them to utilize the health benefits. All clients paid for all or part of the costs of hospitalization using out-of-pocket payments drawing from individual savings (38%), cash from family members (55%), loans (11%), and reduced spending on other things (7%).

Table 15. Financing of hospitalization in past year (Naira)

Variable	Percentage	Mean Expenses (SD)	N
Line item expenses reported for hospitalization			15
Doctor/nurse payment	41%	9,000 (10,148)	
Hospital room and board	50%	21,075 (19,811)	
Operation fee	11%	53,032 (121,124)	
Treatment/medications	62%	17,665 (28,006)	
Lab tests/x-rays	35%	628 (740)	
Transportation	52%	110,000 (127,279)	
Room and board for companion	14%	78,200 (79,490)	
Total expenses incurred for hospitalization		103,458 (110,572)	22
Health insurance used to cover some costs of hospitalization	14%		24
Why health insurance was not used			24
Does not have insurance	22%		
Does not know where could use insurance	22%		
Does not know how to use insurance	17%		
Did not receive insurance card	30%		
Provider does not accept health insurance for service provided	9%		

Variable	Percentage	Mean Expenses (SD)	N
Financing mechanisms used to pay for all or part of the costs of hospitalization[12]			29
Individual savings	38%		
Cash from family members	55%		
Loan from any source	11%		
Reduce spending on other things	7%		

4.8 Use of Outpatient Health Services

Table 16 reports reported outpatient service utilization in the past four weeks. Sixteen percent of all respondents reported seeking outpatient care in the past month. Of these visits, two-thirds were sick visits and one-third were well visits (e.g. a check-up, antenatal care, vaccinations). Individuals in the higher wealth quintiles were slightly more likely to seek outpatient care for sick visits compared to those in the poorest wealth quintile.

Table 16. Client outpatient seeking behavior in past 4 weeks

Variable	Total	Percentage Female	Percentage Enrolled
Total (N=77)	16%	68%	82%
Outpatient visits for illness (N=56)	12%	83%	87%
Outpatient visits for well visit (N=26)	7%	84%	87%

Table 17 shows that the most frequent reason for an outpatient visit was for malaria. Similar to health seeking behavior for inpatient care, one-third of the outpatient visits were for generalized aches and pains. Other reasons included diabetes (7%), hypertension (7%), and back pain (4%). Reasons for well visits included antenatal or postnatal care (11%), regular check-ups (17%) or immunizations (4%). Of the 84% of clients who sought care from a healthcare provider, approximately half visited a private hospital (47%) with an additional 12% seeking care from a private clinic. Approximately 29% of clients sought care from a public facility, while 12% visited a chemist or patent medicine dealer. Most clients who tried to self-medicate without consulting a healthcare provider (17%) used medication (63%), herbs (19%), or other traditional treatment (19%).

Table 17. Client outpatient health seeking behavior in past 4 weeks

Variable	Mean (SD)	N
Main reason for outpatient visit to address illness/injury		56
Diabetes	7%	
Malaria	50%	
Hypertension	7%	
Back pain	4%	
Other (general aches and pains)	32%	

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[12] Clients could list multiple financing mechanisms used to pay for all or part of the costs of hospitalization.

Variable	Mean (SD)	N
Main reason for outpatient visit for preventative services		26
Antenatal/postnatal care	35%	
Regular check-up	52%	
Immunizations	13%	
Type of health facility visited		75
Public hospital	13%	
Public primary health center	16%	
Private hospital	47%	
Private clinic	12%	
Chemist/patent medicine dealer	12%	
Minutes traveled to reach facility	22 (17.2)	75
Minutes waited to be seen by provider	20 (12.4)	60
Type of treatment taken without consulting a healthcare provider		27
Medication	63%	
Herbs	19%	
Other traditional treatment	19%	

As shown in Table 18, average total expenses incurred for outpatient visits totaled between 4,033 and 4,984 Naira ($20 - $25). Fifteen percent of clients used some form of health insurance. Other clients reported that they did not have health insurance (9%), did not know where they could use health insurance (14%), did not know how to use health insurance (10%) or could not use the health insurance at the healthcare provider for the treatment desired (17%). Similar to financing for MNCH and inpatient care, households used savings (52%) or paid out-of-pocket using cash (33%).

Table 18. Financing of outpatient care visit in past four weeks (Naira)

Variable	Percentage	Mean Expenses (SD)	N
Line item expenses incurred for outpatient care[13]			75
Doctor/nurse payment	32%	7,605 (25,119)	17
Treatment/medications	65%	4,062 (4,849)	40
Lab tests/x-rays	30%	1,743 (1,091)	16
Transportation	42%	426 (406)	22
Total expenses incurred for outpatient care		4,984 (532)	43
Health insurance used to cover some costs of outpatient care	15%		76

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[13] Some clients opted to respond about expenses for each individual category of expense while others responded about total expenditures. We use both sets of responses to estimate spending for outpatient visits.

Variable	Percentage	Mean Expenses (SD)	N
Why health insurance was not used			59
Does not have insurance	9%		
Does not know where could use insurance	14%		
Provider does not accept insurance	12%		
Does not know how to use insurance	10%		
Treatment not covered by insurance	7%		
No insurance card	42%		
Other	7%		
Source of financing used to pay for all or part of the costs of hospitalization			73
Savings	52%		
Cash	38%		
Reduce spending on other things	5%		
Loan from any source	4%		
Total amount paid for treatments taken without consulting a healthcare provider	--	1,033 (1,070)	20

4.9 Health Events among Other Household Members

While this study focuses on the health seeking behavior of clients, the health needs of household members are also of critical importance in mitigating the financial impact of ill health on a household. Results from baseline data suggest that over half of the clients surveyed had at least one family member who experienced a health event during one of the recall periods. As detailed in Table 19, nearly 7% of households had at least one delivery in the past year, 13% reported at least one family member was hospitalized overnight for an illness (non-delivery) or accident in the past year, and 30% of clients had at least one family member seek outpatient care in the past four weeks.

Table 19. Health seeking behavior of clients' household members (excluding client)

Variable	Percentage	N
Households with at least one member reporting a delivery in past year	7%	464
Households with at least one member hospitalized overnight in past year	13%	464
Households with at least one member seeking outpatient care in past four weeks	30%	464

4.10 Out-of-Pocket Expenditures

As shown in Table 20, the cost of financing one hospitalization for a non-MNCH service was approximately 96% of average monthly household income in this sample. For a normal delivery, expenses equaled approximately 59% of average monthly household income, while one patient who received a Caesarean section reported paying 150,000 Naira ($754) for operation fees alone. On average across the sample, clients' total annual health expenditure was 8,793 Naira ($44).

Table 20. Ratio of spending on one delivery or one hospitalization to average monthly household income

Variable	Mean Spending (Naira)	% of Average Monthly HH Income
One normal delivery (N=5)	52,702	59%
One hospitalization episode (N=13)	95,730	96%

Table 21 summarizes annual inpatient and outpatient health expenditures for the sample. Total annual health expenditure across this sample was 8,793 Naira, or $44 on average. It was 5,797 Naira ($29) for male clients and 11,292 Naira ($57) for female clients. Estimated annual average inpatient expenditure (delivery and non-delivery admissions) was 3,250 Naira ($16) for all clients and 1,707 Naira ($8.50) and 4,536 Naira ($23) for male and female clients, respectively. Estimated average health expenses for outpatient care over the course of one year were 5,543 Naira ($28) for the overall sample, and 4,089 Naira ($20.50) and 6,675 Naira ($33.50) for male and female clients, respectively.

Table 21. Cost of health insurance (individual coverage) relative to average total health expenditure for the study sample in the past year in Naira[14]

Variable	Total	Male	Female[15]
Average total health expenditure for study population (Naira)	8,793	5,797	11,292
Ratio of annual PPPHI premium to average annual health expenditure for study population	0.68	0.97	0.53
Average inpatient expenditure for study population (n=464) (Naira)	3,250	1,707	4,536
Ratio of PPPHI premium to average inpatient expenditure for study population	1.85	3.51	1.32
Average outpatient expenditure for study population (n=464) (Naira)	5,543	4,089	6,675
Ratio of PPPHI premium to average outpatient expenditure for study population	1.08	1.47	0.90

The individual premium charged for this micro health insurance product for one year of coverage was 6,000 Naira or $30. Overall, the premium for the individual health insurance product was only 68% of average annual total health expenditure. Women in this sample demonstrated a greater need for health insurance and would potentially receive greater benefit from the PPPHI product. For female clients, the premium for the individual health insurance product was 53% of the annual average total health expenditure (including deliveries). The premium was nearly twice (1.85 times) the average annual

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[14] Average total health expenditure for the study population in the past year was calculated by averaging the sum of the total inpatient health expenditure (cost of most recent admission multiplied by number of reported admissions in the past year) and total outpatient health expenditure (cost of most recent outpatient visit multiplied by number of outpatient visits in the past month multiplied by 12) across the sample.

[15] One female client was an outlier and removed from the sample. She reported one delivery, one non-delivery hospitalization, and four outpatient health events during the recall periods.

inpatient health expenditure and nearly equal (1.08) to annual outpatient health expenditure. Thus, an inpatient or outpatient-only health insurance product potentially offers less value to clients.

5.   DISCUSSION AND CONCLUSIONS

Below we discuss some of the main findings of the baseline study and highlight recommendations for practitioners in Nigeria and other LMICs, particularly as governments explore how to extend insurance coverage to urban, informal sectors workers. The findings highlighted in this report offer insights into the characteristics of the target population for micro health insurance. More research is needed to better understand how to overcome design challenges and deliver a health insurance product that meets their needs.

5.1 Client Demographics

The insurance pilot reviewed in this study showed promise in reaching the intended informal sector target population. More than ninety percent of respondents identified as informal sector workers who were excluded from access to other health insurance products in Nigeria. The baseline survey findings suggest that the MFB clients who were enrolled in the mandatory PPPHI product were of a higher income level and had greater access to healthcare services than anticipated at the outset of the study. Because the MFB decided to limit enrollment to clients with larger individual loans, clients were somewhat older, better educated, and reported higher socioeconomic status (defined by self-reported income and wealth index) on average than the clients with group loans who had been surveyed during the 2012 willingness-to-pay study.

While the study sample was somewhat better off than expected, they were an appropriate group among which to pilot test the product. Working with this group allowed the MFB and insurance partners the opportunity to make adjustments to the product and processes with less risk of unpaid premiums, overuse of health services, or loss of trust with less established clients. In addition, with education about the benefits of insurance and marketing of the PPPHI product, individual clients may have the greatest financial ability to purchase the family product, which could extend coverage to more individuals.

5.2 Health Seeking Behavior at Time of Insurance Enrollment

Close to ninety percent of clients surveyed self-identified as the head of the household and ninety percent reported that they were married with children, suggesting they would have a role in managing at least some of the household finances and making decisions regarding healthcare for themselves and their families.

While a review of MFB client data and the willingness-to-pay study conducted in 2012 suggests that approximately 90% of the MFB's clients are women, only 55% of respondents in this study were female. Again, this likely reflects the characteristics of those clients with larger, individual loans. Yet female respondents were substantially more likely to seek both inpatient and outpatient care during the recall periods defined in the study. Eleven women (approximately 6% of the female sample) reported a delivery in the past year, and 83% of the 29 clients who were hospitalized for a non-maternity condition were also female. Approximately 68% of clients who sought outpatient care were female, and all clients who received outpatient care more than once during the previous four weeks were women. While women in the lowest wealth quintiles were most likely to have delivered a baby in the past year, women in all wealth quintiles demonstrated a need for comprehensive (inpatient, outpatient, and maternity) health services.

It was not possible to evaluate the quality of care received from the clients' prior health service providers as compared to the healthcare offered by providers in the HMO's network. Clients were more likely to seek care from private providers than government providers in the prior year. For example, ten out of the eleven clients who delivered a baby in the past year did so in a private healthcare facility. Almost all of the women were assisted by a skilled health provider with 55% reporting assistance from a doctor and 64% reporting assistance from a nurse or midwife. All women reported using antenatal care—although most could not recall the number of visits—and almost all women (91%) reported receiving postnatal care by a skilled health provider. The majority (80%) of the women who reported using antenatal and postnatal care received these services at a private healthcare facility.

Aside from maternity care, the most common causes of hospitalization were severe malaria (41%) or other illnesses described as aches and pains and later diagnosed as an illness associated with hygiene or nutrition (e.g. typhoid). Nearly 60% of these clients were hospitalized in a private hospital or clinic. Similarly, most clients who sought outpatient care for a well visit or due to illness (half of which were due to malaria and the remaining due to general aches and pains (32%) associated with hygiene or poor nutrition) received care at a private health facility (60%). Just 17% of clients who were ill in the past month reported self-medicating without consulting a healthcare provider. This may suggest that while the costs associated with regular outpatient care or hospitalization were high (particularly a delivery or care requiring an operation -- one client reported the operation fee for a Caesarian section as 150,000 Naira ($753)), they were not significant enough for clients to forgo seeking healthcare.

Nearly all clients who reported health events stated that they financed their healthcare by paying out-of-pocket. More than 90 percent reported using a combination of household income or savings to finance inpatient care. In addition, approximately 11% also took out a loan and 7% reduced spending on other things. This finding in particular suggests that health insurance coverage could provide financial protection for at least a subset of these clients who may be reducing spending on other essential commodities to finance their healthcare needs. If individuals were covered by a health insurance product, they may have made different decisions regarding their health (such as seeking care from better quality providers) and seeking preventive services or earlier treatment, potentially reducing total expenses.

Estimated annual health expenditures per client were 8,793 Naira ($44). Female clients had substantially higher health expenditures, averaging 11,292 Naira ($57); this was approximately two times higher than the health expenditures reported by male clients (5,797 Naira [$29]). This finding implies that the PPPHI product potentially offered better value to women. While the annual premium was nearly equal to average estimated annual health expenditures for men, the ratio was 0.53 for women, representing significant savings. In reality, health expenditures of female clients may be even higher, since most clients who reported a delivery or other hospitalization were unable to recall how much was spent to cover their health expenses and often cited the fact that their husbands paid the bill as a reason for being unable to recall the amount. The findings also support perceived client demand for a comprehensive health insurance product (covering both inpatient and outpatient care) which had been reflected in the 2012 willingness to pay study.

5.3 Enrollment in PPPHI Product

A majority of clients (59%) in the study sample reported that they were enrolled in the health insurance scheme at the time of the study (defined as having the first premium payment deducted from their account, but not necessarily as receiving their benefit card) and an additional 9% reported they were uncertain of their enrollment status. Unexpectedly, lower-SES clients were more likely to be enrolled,

while higher-SES clients were less likely to be enrolled and less likely to be certain of their enrollment status at the time of the survey.

As the wealth index was correlated with average loan size, clients with smaller loans were also more likely to be enrolled in the PPPHI scheme; approximately half of the sampled clients enrolled in the PPPHI scheme had loans below 200,000 Naira ($1,004). While clients in the lowest wealth quintile may have the greatest need for health insurance coverage due to more limited resources to finance care out-of-pocket, they would also be most in need of loans to finance their businesses and may have been less able to forgo renewing their loan. The researchers heard anecdotally that some clients were threatening to leave the MFB to avoid enrolling in the mandatory health insurance scheme, despite their long-term relationship with the MFB. The MFB may have allowed higher-income individuals with larger loans to opt out rather than lose their most lucrative clients.

Just five percent of clients reported enrolling in the family health insurance product. Most of these clients reported uncertainty about who was covered by the scheme, suggesting confusion about the benefits provided. While individual coverage is an important starting point for protecting informal sector workers who are key contributors to their household incomes, family coverage can ensure access to priority services for vulnerable populations including pregnant women and children. The fact that few, if any, clients voluntarily enrolled in the family health insurance product suggests that clients did not perceive value in the family PPPHI product.

Familiarity with health insurance was correlated with whether a client was enrolled in health insurance. More education about the concept of insurance and marketing to increase awareness of the PPPHI product is necessary in this population. Limited understanding of and familiarity with health insurance undermined the potential of the PPPHI product to increase access to services and reduce the financial burden of illness on households.

5.4 Conclusions

The PPPHI scheme was designed specifically for urban, informal sector workers with a particular emphasis on the unique needs of women, who constitute a majority of microfinance institutions' clientele. The HMO and MFB partners in Lagos hoped to leverage the infrastructure of the MFB and the MFB loan officers' relationships with clients to deliver a comprehensive insurance benefit package. A willingness-to-pay study and other market research were conducted to design a benefit package that would offer value to these clients; this research confirmed that clients are most interested in purchasing coverage for maternity and outpatient care. The product was priced at a level clients could afford without dependence on subsidies, thereby promoting the sustainability of the scheme. Given fluctuations in clients' income, premiums were paid upfront by the MFB and clients could repay the MFB in installments without interest as they repaid their loans. To improve access to priority MNCH services, there were no waiting periods for maternity care. Clients gained access to the provider network of a private HMO serving formal sector workers.

This baseline survey confirmed that the MFB's clients were in need of improved financial protection. They had financed their health care in the prior year entirely through out-of-pocket payments; all respondents were using personal savings and most were relying on support from family and neighbors to finance needed health services. A single health event could be devastating to this group. On average, health expenditures associated with a delivery were equivalent to more than half of self-reported monthly household income, while costs associated with a hospitalization were nearly equal to self-reported monthly income. The PPPHI's pricing appeared to provide good value for money; the premium was approximately two-thirds of the estimated average yearly health expenditure across the sample and one-half of the estimated average annual total health expenditure for women.

However, survey findings indicated that respondents had poor understanding of the PPPHI insurance product, their enrollment status, and their entitlement to benefits. Despite the well-researched design of the product, challenges in its implementation have threatened the potential of the PPPHI. For instance, marketing could be improved by offering financial or in-kind incentives to loan officers to compensate them for time spent enrolling clients in the health insurance scheme and incentivize them to properly inform clients about the benefits of the PPPHI product. More education is needed for the HMO staff selling voluntary insurance, the loan officers enrolling clients, and the clients themselves. Every effort must be made to ensure clients are enrolled properly the first time and benefit cards are distributed to clients in a timely manner with clear instructions where and how the cards are to be used.

5.4.1   Future research

A growing body of literature suggests that using alternative distribution channels such as MFBs to deliver health insurance coverage to the uninsured may be particularly promising when government programs have limited outreach and infrastructure (Churchill and Matul, 2012). However, rigorous evaluations have underscored the complexity involved in developing successful partnerships (Banerjee et al., 2014, Hatt et al., 2009). Many of the implementation challenges identified during the initial PPPHI enrollment period are not unique to this scheme. To further investigate these challenges and identify potential solutions, in late 2014 the HFG project conducted qualitative research with stakeholders involved in the Lagos partnership, including implementing partners, clients, and healthcare providers. Findings from this research are detailed in a forthcoming publication.

There is a need for more rigorous evidence on the optimal design of health insurance schemes covering urban, informal sector workers and how best to implement them in resource-poor contexts. As urban populations continue to rapidly increase, additional research with these populations would allow stakeholders to better meet their unique needs as countries throughout the world strive to achieve UHC.

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