MILK Brief #22:
"Doing the Math" – Outpatient Health Insurance in Tanzania[1]

Studying the KNCU Health Plan in Moshi

In the foothills of Mt. Kilimanjaro, small-scale coffee farmers have long benefited from membership in the Kilimanjaro Native Cooperative Union (KNCU), a farmer-owned organization that offers access to affordable inputs and training opportunities while buying coffee at fair prices. Since April 2011, KNCU has also offered access to quality outpatient primary health care through the KNCU Health Plan, a health insurance scheme, in collaboration with MicroEnsure and with the support of PharmAccess and the Health Insurance Fund. In a country where user fees and low quality services deter many low-income individuals from seeking care (Haazen, 2011), lowering barriers to accessing health services for clients has tremendous potential value in improving both their health status and their financial wellbeing.

Historically, two major barriers have stood between rural low-income Tanzanians and their primary health care needs. The first is ***cost***: since 1993, government-run health facilities charge a user fee to patients. Although vulnerable populations are technically exempt from these fees, waivers are rarely held up in practice, and many studies have shown that even the poorest end up paying out of pocket.[2] Private and faith-based facilities charge even higher and more prohibitive fees. Formal insurance schemes are limited to public employees (NHIF) and formal private employees (NSSF and SHIB); as a result, most farmers cannot benefit from coverage. In addition to these cost barriers, studies have shown that ***quality issues*** such as doctor absenteeism, lack of available drugs, and other experiential issues discourage low-income individuals from attending local primary facilities. Dasai (2012) notes that primary care facilities may be preferable for patients, in that they are often lower cost and nearer to their homes. However, these facilities may offer poor quality and poor results, leading patients to eventually seek hospital care after a first attempt at a more local solution. This adds to overall costs and reduces the efficiency of care. It is no wonder that many people in rural Tanzania and other developing country contexts choose to bypass primary care altogether, instead going directly to hospitals if and when the illness worsens. This pattern has two negative implications for public health: first, delays in seeking care result in poorer health outcomes for individuals, and second, treatment is more expensive for individuals and for hospitals at the tertiary level.

A local dispensary in Rauya that participates in the KNCU Health Plan

The KNCU Health Plan, a collaborative effort of the multi-national microinsurance intermediary MicroEnsure, the Dutch NGO PharmAccess, and KNCU, responds to both of these challenges. First, the health insurance product lowers the **cost** of primary care

[1] This MILK Brief was prepared by Barbara Magnoni, Laura Budzyna, Danielle Sobol and Emily Zimmerman (April 2013)
[2] Mtei & Mulligan, 2007, citing Laterveer, Munga et al. 2004; Msuya, Jutting et al. 2004; Burns and Mantel 2006

PharmAccess, a Dutch non-profit organization, works to improve access to quality health care in Africa through private health insurance for low and middle-income groups.

PharmAccess subsidizes roughly 60% of KNCU Health Plan member premiums. They are simultaneously working to improve the quality of the facilities that are selected in the KNCU Health Plan through the SafeCare initiative and by funding comprehensive infrastructure improvements. These improvements include the redevelopment of facilities, the training of medical staff, and work to ensure sufficient supplies of medications. Finally, PharmAccess supports MicroEnsure on marketing, administrative systems, health intelligence, package design and optimization.

for patients, providing full coverage of a broad range of outpatient services on a cashless basis after the payment of a single annual premium. Second, PharmAccess, through the SafeCare initiative, works to improve the **quality** of the primary care facilities in the Moshi Rural district that are in the KNCU Health Plan network by offering clinical standards and a step-wise quality improvement program, and by providing funds and incentives for facilities to improve their infrastructure and maintain consistent stocks of medicine. Additionally, PharmAccess provides a premium subsidy for the insurance product, while KNCU provides the delivery channel.

Our Client Math work in India focused on inpatient coverage, [3] suggesting that health microinsurance can help reduce the direct costs of care and perhaps offer incentives for patients to access higher quality providers. A challenge in offering health microinsurance, however, is that it can either offer narrow coverage at affordable premiums or more broad coverage with costly premiums. Our studies in India looked at two products with relatively narrow coverage that did not include outpatient care, medications or other indirect costs, including follow up visits. To address the problem, the government of India has introduced a subsidized health microinsurance program (RSBY), which has gradually been expanding coverage beyond inpatient care to reach more people with broader health services. The experience suggests that offering subsidies may be a first step toward scaling up access to health insurance. However, subsidizing a program may not be enough. There is evidence that patients seek quality both in terms of convenience (waiting times and distances) and healthcare (infrastructure and medical attention) (McGuiness et al., forthcoming). Only a combination of quality and affordability would offer the value for clients to make such programs sustainable. It is with these experiences and lessons in mind that the KNCU Health Plan was developed and offers subsidized health coverage along with a combination of quality upgrades. This KNCU Health Plan offered the MILK project an opportunity to assess the value that a more comprehensive health coverage package may have to its insured clients. Without subsidy, such a broad, and thus more costly product, might price out the very patients it is aiming to support, leading them to instead patch together a set of care options inefficiently rather than buying and using health insurance.

Testing for malaria at a community-level health dispensary using modern inexpensive diagnostic tests keep patients from traveling farther to test for malaria.

This study analyzes the value of the KNCU Health Plan to clients. We explore the total costs of the illness, looking not only at the direct cost of care but transportation costs and opportunity costs given that these can contribute to the incentives to seek care and when. We examine financial savings, but we also explore how the combination of lower costs and improved service value influence clients' health-

[3] See "MILK Brief #11: Health Microinsurance in Maharashtra, India" and "MILK Brief #12: Doing the Math in Karnakata, India"

seeking behavior. We find that **the product offers significant cost savings for the insured**. We also see some evidence that by reducing costs and distances, **the coverage influences clients to seek care sooner** than uninsured respondents.

The KNCU Health Plan: How it Works

KNCU Health Plan members have cashless coverage up to **USD 307** (TZS 500,000) for outpatient care, making no out-of-pocket payments for facility service fees, laboratory tests, or medications. In addition to acute care for common diseases such as malaria, pneumonia and bronchitis, the plan also covers chronic disease management, maternity and delivery. It does not cover imaging (except for pregnant women) or hospitalization, all of which have user fees at public facilities.

The plan is sold to KNCU members on a voluntary basis, and relies on extensive awareness efforts by MicroEnsure to familiarize KNCU members with general concepts of insurance and details about the product's coverage. Each year, the annual premium is paid upfront. A premium of **USD 7.20** (TZS 12,000) covers one person, and a premium of **USD 12.00** (TZS 20,000) covers up to four people, with the option to add additional family members for **USD 3.00** (TZS 5,000) each. Member payments account for 40% of the cost of this insurance; PharmAccess subsidizes the remaining 60%.

Health facilities are paid a fixed capitated amount for each subscribed client. Clients are assigned to facilities to ensure that the closest facilities to their homes are used. This scheme intends to encourage treatment of most clients at the "dispensary" (primary facility) level. Capitation, in turn, limits facilities from overprescribing services or medications, since they must work with limited resources to treat KNCU Health Plan patients. In parallel, to support the use of primary care facilities, PharmAccess works to improve the quality through the SafeCare initiative, and funds improvements in facility quality, by improving basic infrastructure, investing in instruments, training facilities in health and hygiene protocols and making cosmetic improvements to clinics to make them more appealing to patients. As of the start of 2013, 14 clinics have been upgraded and 7 are in the process.

Methodology

In November 2012, the MILK research team traveled to Moshi, Tanzania to interview former patients about the cost and quality of a recent outpatient healthcare visit for a non-chronic condition. The patients interviewed had one of the following conditions: malaria, pneumonia, gastrointestinal problems (diarrheal disease, amoeba/parasites), typhoid, bronchitis, tuberculosis and urine infection. We targeted two groups: members of the KNCU Health Plan and individuals who had no health insurance at all. We excluded individuals who carried any other health insurance policy besides the KNCU Health Plan.

MILK researchers partnered with surveyors from the Tanzania Women Research Foundation (TAWREF) to identify and interview respondents. The team used two strategies to obtain the sample of KNCU Health Plan clients: first, MicroEnsure invited randomly selected clients who had made claims in the preceding three weeks to speak to us during an interview session, and second, we conducted voluntary patient exit interviews at KNCU network healthcare facilities. In order to reach uninsured respondents with similar qualities to the insured group, we conducted patient exit interviews at other local facilities.[4] In total, we conducted **65 interviews** using a smartphone-based

Client Math

Client Math uses in-depth interviews of low-income people (some with insurance and some without) who recently suffered an illness or medical need. We quantify the full cost of the health service as well as the financial response, exploring the role insurance played in helping clients deal with the financial shock. Additionally, we assess the other barriers to health access mentioned above, determining the extent to which the insurance may have improved health care access by reducing non-financial barriers.

[4] Insured respondents were generally found and interviewed at partner facilities (usually private, local dispensaries), and uninsured patients were generally found and interviewed at other local facilities (usually government-run hospitals). This difference by itself indicates that the possession of insurance has a relationship with facility choice and usage of primary vs. tertiary care facilities.

questionnaire at five dispensaries and four hospitals in the Moshi Rural district. To supplement the questionnaires, we also conducted **four focus groups** to inform the survey instrument and to enrich its findings. In parallel, we interviewed clinical officers at KNCU Health Plan partner facilities.

Who are the respondents?

The table below summarizes some of the main demographic and socioeconomic statistics of our sample. We observe no statistically significant differences in these figures between the insured and uninsured groups. Given that these two groups came from similar communities, we expected to see little difference. However, the lack of statistical significance might also be due to the small sample size.

Table 1: Socioeconomic Characteristics of Respondents

	Insured (n=31)	**Uninsured** (n=34)	**p**[5]
Age	49	43	0.161
% Women	58%	47%	0.375
Years of Education	7.4	8.3	0.263
Household Size	6.1	6.1	0.943
Monthly Individual Income	USD 91	USD 81	0.615
Monthly Household Income	USD 119	USD 139	0.487
Monthly Household Expenses	USD 130[6]	USD 167	0.318

The average age of 46 reflects the distinct and shifting demographics of the Moshi Rural region: seeking better-paying jobs, many young people leave the coffee farms to live in the cities of Moshi, Arusha, and Dar es Salaam, leaving behind parents and young children. As a result, 77% of insured and 62% of uninsured report having at least one family member who has migrated to a different region or country. Those who remain in the rural, coffee farming areas are typically older and more vulnerable to illness.

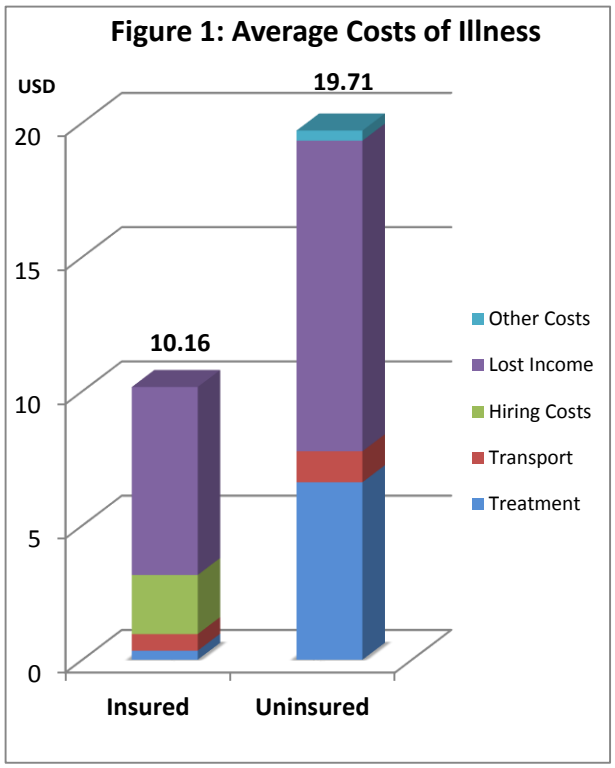
Livelihood Strategies. Farming represents the principal livelihood for the majority of the respondents (94% of insured and 76% of uninsured). Men and women in the same household typically divide the farm income based on the crop: men keep the profits from coffee and maize, while women keep the proceeds from bananas and beans. Many respondents also supplement their farming income with a side business: slightly over half of the respondents in each group (55% of insured and 59% of uninsured) earn income from something other than farming, usually trade or tourism. In addition, 23% of insured and 26% of uninsured respondents receive regular remittances from a family member outside of the region. The recent penetration of mobile money carrier mPesa in this community has made this type of transfer cheaper and simpler than ever before.

Financial Lives. As the microfinance market is not well developed in this region of Tanzania, formal borrowing is uncommon in both groups: only 6% of insured and 3% of uninsured had a current loan from a financial institution at the time of the interview. That said, 26% of insured respondents say they often borrow from Savings and Credit Cooperative Societies (SACCOS), compared to only 3% of uninsured. These SACCO groups function both as lending agencies and as solidarity groups: in focus group discussions, many SACCOS members asserted that the group would provide financial help if a member's family member became ill. Other types of informal borrowing were slightly more common in both groups: approximately 29% of respondents in each group report borrowing regularly from friends and family. In both groups, it is more common to have a savings account than a formal loan: 32% of insured and 29% of uninsured had a savings account.[7] No respondent had any other type of insurance, and none had had other health insurance before the KNCU Health Plan.

[5] A p-value below 0.05 indicates a statistically significant difference between the two groups.
[6] The fact that household expenses exceed household income reflects that fact that people may not have an accurate sense of what their entire household aggregate income is.
[7] Even our small sample reflected a wide variety of options for savings accounts, including the Nelson Mandela Savings Bank, the National Bank of Commerce, Uchumi Commercial Bank, CRDB Bank, Akiba Commercial Bank, Stanbic, and a range of local SACCOS.

How much did the illness cost?[8]

We used Client Math to measure the **direct costs** (see figure 1) **of treatment for communicable, short-term, non-chronic illness** such as malaria, pneumonia, bronchitis, or gastrointestinal infections. Direct costs include service fees, laboratory tests, scans, and medicine. These were virtually zero for the KNCU Health Plan members; in fact, **83.3% of KNCU Health Plan members paid no treatment costs.** The average treatment cost for Insured patients was **USD 0.34**, with a minimum cost of zero and a maximum cost of USD 4.[9] By contrast, all uninsured respondents paid out-of-pocket costs at the facility. The average treatment cost for uninsured patients was **USD 6.61,** with a minimum of USD 0.62 and a maximum cost of USD 22.53. Medication accounted for the most expensive portion of this cost.



Transport costs for KNCU Health Plan members were, on average, nearly half of those of the uninsured. KNCU members paid an average of **USD 0.62,** with a minimum of zero and a maximum of USD 6.16. In contrast, the uninsured paid an average of **USD 1.15** in transport costs, with a minimum cost of zero and a maximum of USD 9.24. It is noteworthy that over half of KNCU Health plan members paid no transport costs at all, presumably because their designated facility was within walking distance of their home. When asked where they might have gone had it not been for the insurance, only 6.5% noted that they would have gone to a closer facility, reflecting the program's ability to match insured patients up with near clinics. In total, 65% noted they would have gone to the same facility without insurance. The remainder, however noted that they would have chosen a cheaper facility or hospital (16%) or skipped care altogether (19.4%). This difference might explain some of the difference in transport cost between insured and uninsured respondents.

Interview with a respondent at a rural clinic in the Kilimanjaro area of Moshi, Tanzania

Lost income due to missed work often represents one of the largest components of a financial shock.[10] In our studies of inpatient care in India, we found lost income to represent the largest cost to microenterprise clients of Grameen Koota (MILK Brief #12), and a substantial, though lesser cost for the Indian farmers insured through a MicroEnsure product (MILK Brief #11). In the case of the KNCU Health Plan, more uninsured respondents missed work than did insured respondents, accounting for a higher average lost income among the uninsured. The uninsured lost an average of **USD 11.57** due to missed work, with a minimum loss of zero and a maximum loss of USD 59.40 while KNCU Health Plan

[8] In this analysis, we eliminated two extreme cases whose reported costs and financing amounts heavily skewed the averages in this small sample. One insured client financed USD 228 through asset sales and informal loans in spite of only reporting USD 23 in costs, perhaps because she perceived her illness to be much more severe than it was. One uninsured client reported USD 188 in costs, mostly comprised of several months of lost income, but only financed USD 8 of these costs. Neither case accurately reflected the type of illness this analysis hoped to capture: a short-term illness requiring relatively low costs.

[9] Four KNCU Health Plan members paid out-of-pocket costs for lab tests or for medicines obtained outside of the facility.

[10] We approximate total lost income by multiplying the number of days of work that the respondent missed by his or her typical daily earnings.

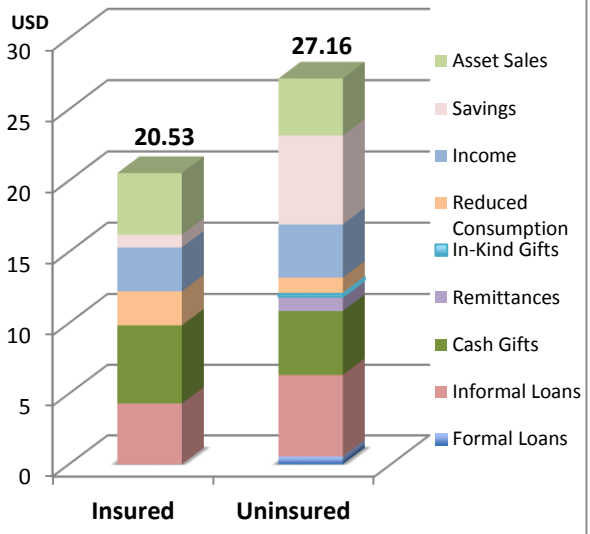
members lost an average of **USD 7.00,** with a minimum loss of zero and a maximum loss of USD 9.24. Opportunity costs also seemed to be slightly higher for uninsured respondents, who were slightly less likely to work in farming and reported higher daily wages on average than the insured.[11] **Hiring replacement labor** also factored in as an indirect cost. Three KNCU Health Plan members hired labor during their absence from work, paying an average of USD 22 in wages over the course of their illnesses, amounting to an average of **USD 2.20** in hiring costs over the whole insured group. None of the uninsured respondents incurred hiring costs, presumably because it was not a harvesting season and there was no need to hire labor at the time.

Lost income may also help to reveal information about health seeking behaviors, in particular with regard to ***how long clients wait before seeking care***. KNCU Health Plan clients reported waiting only **three days** between becoming ill and visiting a facility, while uninsured respondents waited an average of **five days**. This two-day gap is statistically significant. Our case studies below highlight some potential reasons for the delays in going to the doctor. In all cases, respondents cite concerns about costs as a reason for waiting (both insured and uninsured), though insured were more likely to act on their illness more quickly, perhaps with the expectation that having insurance, their costs would be lower. The fact that the insured were less likely to delay seeking care has many positive implications for cost savings for the health system and health outcomes for the insured population: early detection and treatment of disease can mean a reduction in severe cases across all respondents. Additionally, among those who did delay three days or more, fewer insured than uninsured reported waiting because of a concern about their ability to pay (39% vs. 71%).

How did they pay for it?

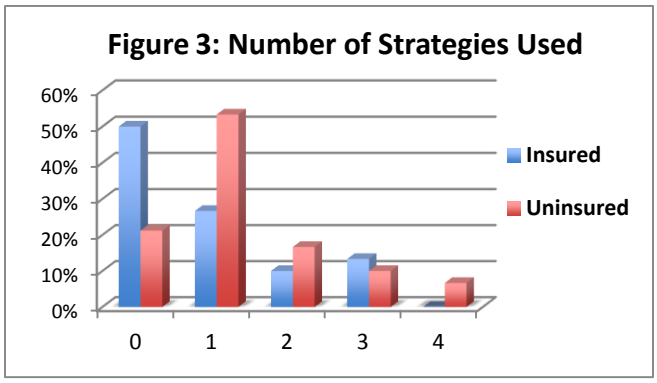
When considering the financing of the costs of illness, we held a focus group in the community to discuss how people typically manage the cost of a variety of shocks. The focus group discussions revealed that, in general, people preferred to **use their savings** and to **call upon friends and family** to deal with expensive events. However, the mechanisms that insured and uninsured respondents actually used for this much smaller, less expensive event varied from these stated preferences significantly, suggesting that these two sources were not always available or sufficient. Respondents often turned to other, much less efficient mechanisms. Figure 2 shows the average dollar amounts used of each strategy within each group. Overall, the uninsured financed an average **USD 27.16**, nearly USD 8 more than the cost of the illness. The insured financed less, totaling **USD 20.53**, but this still amounted to nearly USD 10 more than the cost of the illness.

Figure 2: Financing Strategies



Figures 1 and 2 illustrate three major takeaways. **First, uninsured respondents had to finance nearly USD 7 more than their insured counterparts**. In a region where the daily wage ranges between USD 3 and USD 6, this represents substantial amount that the insured did not have to raise. **Second, both groups' over-financing suggests that many of the financing mechanisms available to them are either inefficient or perhaps used for other purposes.** For instance, in our focus groups, participants reported that they often borrowed more than they needed so they could use the excess for income-generating activities.

[11] Opportunity costs vary not only by average income but also by job type; for instance, missing one day of work may have a more direct impact on a microentrepreneur's income than on a farmer's. However, although the product targets farmers and not microentrepreneurs, it is clear that the insured farmers in the sample did not escape these indirect costs.



Third, while on average (Figure 2), the insured tightened consumption more and the uninsured used more savings to finance costs, **the KNCU Health Plan members used fewer strategies than the uninsured** (Figure 3), presumably because their financing needs were lower. The uninsured used an average of **1.3** strategies, and 53% used only a single strategy. The insured, whose costs were lower, used an average of **0.9** strategies: 27% used 2 strategies (including insurance), while 50% report needing no mechanism other than the insurance. This suggests value for insured respondents who needed to resort to fewer mechanisms, even though some (as illustrated in the case studies below) clearly used inefficient mechanisms such as asset sales or may have borrowed larger amounts to cover other needs.

We explored how respondents felt about using various mechanisms in focus group discussions, where in general, participants reported that they value a feeling of self-reliance in solving the financial problem. As such, **savings** was a highly favored mechanism by both insured and uninsured respondents. Survey respondents also reported that savings were one of the fastest and easiest ways to come up with funds. In a community where saving is common (particularly through SACCOS), the preference of using savings over borrowing is also tied to the fact that these are available for use.

Family and friends, through either gifts or loans were also seen as a preferred resource, in particular over formal loans. In addition, many clients reported an aversion to accruing debt and would prefer not to borrow if they could avoid it. SACCO members were also hesitant to **borrow formally,** reporting instead that fellow SACCO members would rally to help in a time of crisis. Respondents said that calling upon their social networks is one of the fastest ways to come up with funds; however, the possibility that family and friends may not be in a position to help made it a less reliable and therefore less available strategy. This is supported by our findings (Table 2) that only 20% of the insured and 15% of the uninsured used gifts to pay for their illness and 27% of the uninsured and 13.3% of the insured borrowed informally from friends and family. While the cost of the event itself was low, and some family and community may have the liquidity to help, the lack of reliance on this suggests that there are some social costs to leaning on friends and family. One is the perception of not being self-reliant, a characteristic that was repeatedly noted in focus groups as important. Another possible reason that friends and family may not be available could be that the type of event, while inexpensive, can be frequent. Doctors in Moshi noted that an individual might contract malaria one or two times annually for example. If all six members of the respondent's household were to have malaria at some point in the year, this could mean leaning on friends and family 6 or up to 12 times in one year. The burden of this cost would be significant in this case.

Table 2: Percentage of Respondents Who Received Support of Friends and Family

	Insured	Uninsured
Informal Loans	13.3%	27.3%
Gifts	20.0%	15.2%

Selling animals was seen as undesirable as well. Though this strategy was avoided in most cases - only four of each of the insured and uninsured respondents sold animals - animals were the most commonly sold asset (followed by crops). Table 3 highlights that asset sales, in particular when animals were sold can be extremely inefficient, and rarely match up with the financing needs of a relatively small shock. In the case of animal sales, it appears to lead to unnecessary over-financing at higher rates then in the case of selling smaller assets. Additionally, focus group discussants said that while this strategy was a way for a person to be self-reliant in dealing with a shock, they also noted that they might be forced to sell an animal at a give-away price and replace it later it at a higher cost, explaining perhaps some of the over-financing we found. If they were not able to replace the animal, they would lose any income-generating potential it had, and would also lose the future economic benefit of the animal's offspring. Finally, they reported that selling assets to finance a shock feels degrading.

Table 3: % cost financed by asset sales (TZS)

	Insured			Uninsured	
1	Asset Sales (animal):	200,000	1	Asset Sales (corn):	15,000
	Total Cost:	126,000		Total Cost:	36,500
	% Financed by asset sale:	**159%**		% Financed by asset sale:	**41%**
2	Asset Sale (animal):	20,000	2	Asset Sale (animal):	400,000
	Total Cost:	55,000		Total Cost:	31,650
	% Financed by asset sale:	**36%**		% Financed by asset sale:	**1264%**
3	Asset Sales (animal):	35,000	3	Asset Sales (seeds):	80,000
	Total Cost:	39,000		Total Cost:	57,500
	% Financed by asset sale:	**90%**		% Financed by asset sale:	**139%**
4	Asset Sales (Bananas):	10,000	4	Asset Sales (Bananas):	2,000
	Total Cost:	0		Total Cost:	1,500
	% Financed by asset sale:	**Financed 10,000, cost = 0**		% Financed by asset sale:	**133%**

Respondents had various strategies available to them, but access to these strategies varied, with some respondents turned to "easier" strategies such as using income or savings, while others resorted to more difficult strategies such as reducing consumption or selling assets. Overall, the difference between insured and uninsured respondents in selecting a complementary financing mechanism to insurance was not great, although the difference in the cost of the illness was substantial. However, the KNCU Health Plan has added benefits in the service value it brings to clients. None of the alternative strategies brought additional value in reducing non-financial barriers to healthcare, as we discuss below.

Service Value

Non-financial components of value are critical to understanding the fuller picture in health microinsurance. In particular, some studies reveal that insurance may actually increase the cost of health service for patients (Wagstaff, 2007), but that these same products may still be valuable by offering clients better quality health services or the possibility to access services that were otherwise out of reach. In light of the emphasis that the KNCU Health Plan makes on improving quality as a complementary and parallel effort to offering a subsidy for a comprehensive outpatient health insurance package, we consider some of the components of the value of service to clients.[12]

- ***Bridging Information Gaps.*** MicroEnsure's high-touch outreach strategy of household visits and community sensitization programs connects the client to the insurer and health facilities. 61% of clients report that they first heard of the product when an agent visited their house, and another 29% at a Health Plan day. A customer hotline invites clients to call MicroEnsure at any time to ask questions or report difficulties. KNCU Health Plan flyers are posted prominently at health facilities and the primary societies where KNCU members meet, and radio advertisements frequently air on local stations. In a community where health insurance is typically restricted to government employees and few low-income people have had any direct experience with it, bridging information gaps about insurance is key to the plan's service value.

An insured child is diagnosed with pneumonia on a recent visit to a clinic in Rauya

- ***Reducing Distances.*** Clients are assigned to the facility in the KNCU Health Plan network that is nearest their home. Patients have access to cashless care in facilities in their neighborhoods, rather than traveling to seek cheaper care in more far-flung

[12] Because PharmAccess is improving health facilities used by KNCU Health Plan members as well as uninsured patients, this also improves access to others in the community who are uninsured.

facilities. In the context of Moshi Rural, our interviews with providers revealed that many uninsured patients often traveled long distances to attend facilities that were cheaper, such as Kilema Hospital. This benefit can be seen in the calculation above of the transportation cost, which was lower for the insured, and may also have contributed to the tendency of the insured to seek care sooner and thus experienced better healthcare outcomes.

- ***Improving Quality.*** We asked clients to rate their experience at the health facility on a three-point scale from poor to good on a number of measures, including the provider's performance and the availability of medicine. 77% of KNCU Health Plan members awarded a "good" rating to the thoroughness of the examination, 81% gave the same rating to the cleanliness of the facility, and 68% to the availability of equipment and medicine (though 100% of KNCU Health Plan clients were able to fill prescriptions at the facility, compared to 88% of uninsured). Our visits to clinics found that overall they were well-maintained and clean. Even the smaller, local dispensaries had basic equipment and infrastructure to handle common illnesses and were instructed in basic health protocols, including those for prenatal care. The improvements to facilities made by PharmAccess likely contributed to clients' positive perceptions.

- ***Courtesy.*** During our visits and interviews, we observed a positive rapport between patients and providers, many of whom had been practicing in the same community for many years. 68% of KNCU Health Plan clients ranked the courtesy of the healthcare providers at their designated facility as "good." In spite of fears that facilities might discriminate against insured clients, 80% of KNCU Health Plan members reported that they received equal treatment to uninsured patients, and 10% reported that they were treated even better than the uninsured patients.

A Closer Look at Select Respondents

The analysis above explains aggregate responses from our interviews, but averages tend to obscure the diversity of experiences. These individual stories add nuance to the trends highlighted above.

Insured Respondents

Joyce is a 33-year-old KNCU member who farms coffee, bananas, maize, beans, and pumpkins and raises livestock. She runs a small trade business as well. She lives with 2 children and 3 other adults, and all of the adults in her household are covered by the KNCU Health Plan. Joyce reports individual earnings of USD 117 a month, which covers roughly 80% of her monthly expenses.

When Joyce developed a severe fever and cough, she was unable to work or accomplish her normal tasks. She waited 2 days before going to Lole Dispensary. When we asked her why she waited, she said that she didn't think the symptoms were serious and was also somewhat concerned about the costs associated with going to the doctor, even though she was insured.

When she did go to her assigned medical provider, Joyce was diagnosed with malaria. She paid USD 1.80 for medicine[13] and USD 1.20 in transport costs to and from the dispensary. In total, throughout her illness, she missed 5 days of work, incurring a total opportunity cost of USD 30.00. To finance these costs, Joyce used her income, received informal loans from family and friends, and sold an animal for USD 12.00. She made up all of her modest direct costs and most of her opportunity costs this way.

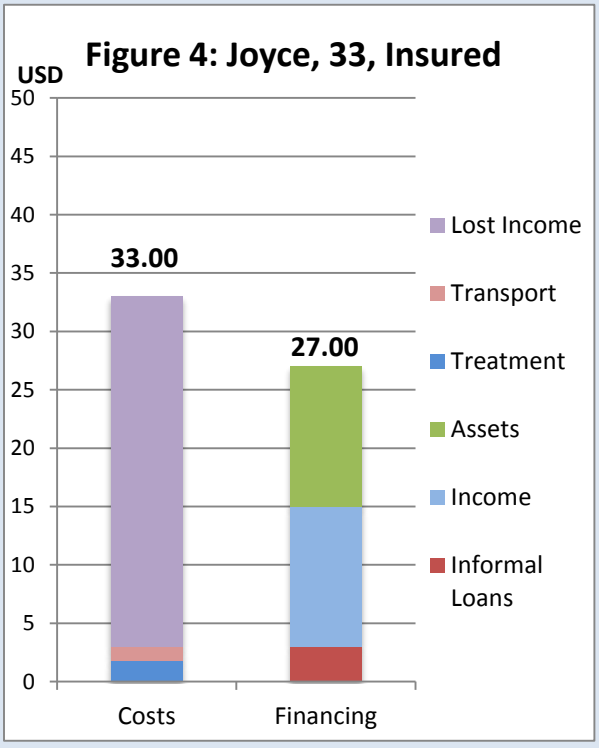
Joyce told us that if she had not had health insurance, she would have visited a cheaper facility. She likes the KNCU Health Plan because she does not have to worry about having some place to go if she gets sick. Although she experienced long wait times and was asked for papers that she did not have, Joyce feels that she was treated better because she was an insured patient. She plans to enroll herself and her family members in the plan again next year.

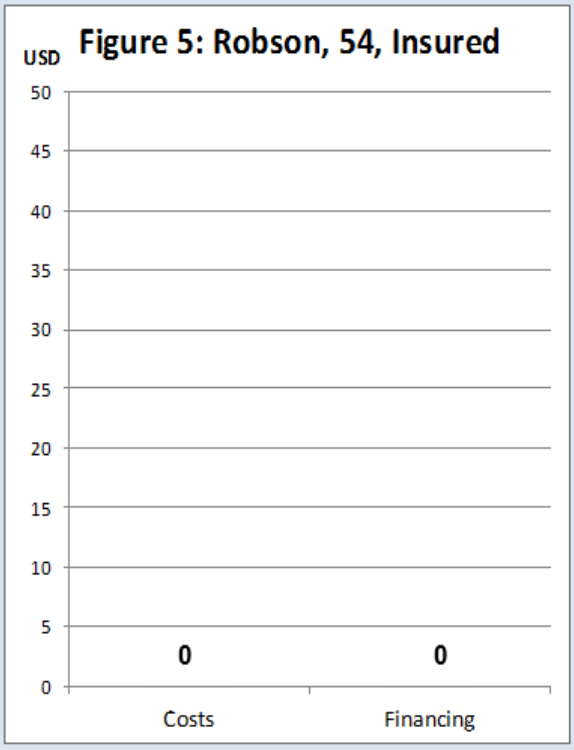
[13] Although the KNCU Health plan covers drugs bought at the clinic, some clients, such as Joyce, bought medicine outside of the clinic.

Robson is a 54-year-old KNCU member who farms coffee and maize and works in a mortuary as a second source of income. He and the other four members of his household (consisting of 2 adults and 2 children) are enrolled in the KNCU Health Plan. Robson reports a monthly income of USD 102, which covers approximately two thirds of his household's monthly expenses. Robson recently fell ill with a high fever. Though he felt that his symptoms were somewhat severe and was concerned that he might die, Robson waited four days before going to the Uuwo Facility, responding in our closed-end questionnaire that he was concerned about the cost of the visit. During this time he tried home remedies. While we cannot clearly piece apart whether he was ill informed about the health coverage or perhaps did not trust the information explained about the coverage, it suggests that he might have benefitted from being better informed by the program.

When he visited the health facility, Robson was diagnosed with malaria and typhoid**. The KNCU Health Plan covered all of the costs of his visit**, including a lab test and medicine. In fact, the total cost of Robson's illness was zero: he incurred no transport costs as he had walked to the facility, and though he was not able to work for 3 days, he did not lose any income from this missed work.[14]

Robson told us that without insurance, he would not have visited a health facility at all for this illness as he estimated that the costs would have been roughly USD 14. A doctor explained that the KNCU Health Plan saves him money and that the premium is affordable, and he plans to re-enroll his entire family. Although the medicine prescribed at his most recent visit *was* available, Robson voiced the common complaint that availability of medicines should be improved. Despite being made to wait, he rated the facility itself and the service that he received as good, and felt that he was treated the same as the uninsured patients.





Uninsured Respondents

Athman is a 29-year-old single man who lives in a household of 8 adults and 2 children. He does not own his land, but works as a day laborer farming bananas, maize, beans, groundnuts, and sorghum. His household's income, averaging **USD 147** per month, comes solely from farming. Athman does not have any health insurance coverage. He recently experienced fever, muscle aches and stomachaches.

[14] As a farmer, his opportunity cost may have been lower than if he ran a business, like Joyce.

Although these symptoms were severe enough to make it difficult for him to work and to go about his normal activities, **he waited 10 days before visiting a doctor because he was concerned about his ability to pay**. During this time he bought medicines and tried to treat himself.

Athman finally went to Kilema Hospital, where he was diagnosed with an amoebic infection. He chose Kilema because it was cheap and he knew that he could get additional treatments there if he needed them, though he told us that at the facility he was made to feel embarrassed and felt that the reception staff was rude. He paid USD 11.10 for the consultation, laboratory tests, and medicine, and an additional USD 0.60 for transport to the hospital. Athman also missed 6 days of work, resulting in total lost income of USD 18, and bringing the total cost of his illness to USD 31.80. He planned to cover these costs through loans and gifts from family and friends and is also planning to cut spending on food (including eating fewer meals), other health needs, and transport.

Athman said that he would consider purchasing health insurance in the future, but did not think that it was available to him as he was not a member of a business cooperative.

Rogate is a 33-year-old man who farms coffee, bananas and maize, as well as works as a day laborer in manufacturing and transportation jobs. He lives in a household with 5 adults and 4 children, and reports an income of USD 150 per month, which sufficiently covers all of his expenses and leaves him with about USD 9 extra each month. Rogate went to Machame Hospital immediately after he experienced somewhat severe chest pains and shortness of breath accompanied by fever, cough and feelings of faintness. He chose Machame Hospital because he had received good services there in the past and because he could get labs and other services there if he needed them.

Rogate was diagnosed with bronchitis, and paid a total of USD 16.50 on doctor's fees, x-rays, and medicines, as well as an additional USD 6.00 on transport. Additionally, Rogate missed 2 days of work, resulting in USD 12.00 in lost income and bringing the total cost of his illness to USD 34.50.

The health care cost him more than he expected, and he used USD 22.50 of his income and sold USD 22.50 worth of agricultural seed in order to pay for the care. At the facility he felt that he was treated the same as insured patients, and felt that the service was generally good. He says that he would consider purchasing health insurance in the future because it could help him to save money and avoid borrowing, but he was not sure that he trusted insurance companies and was concerned that it would cover all of his needs or be accepted everywhere. He suggested that premiums be lowered to make it easier to join.

Figure 6: Athman, 29, Uninsured

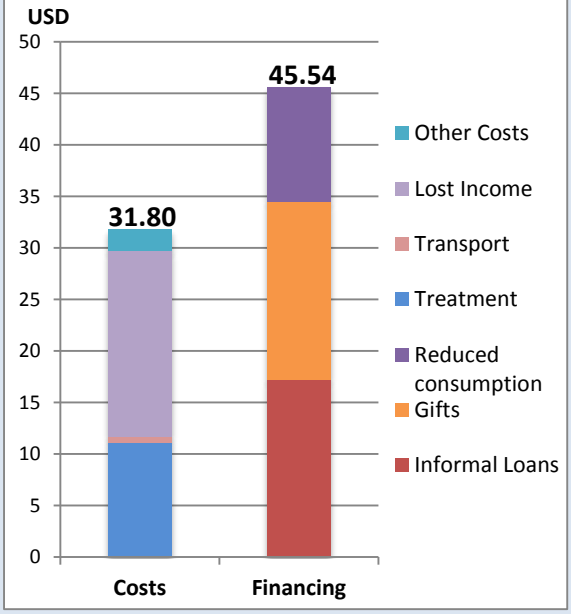
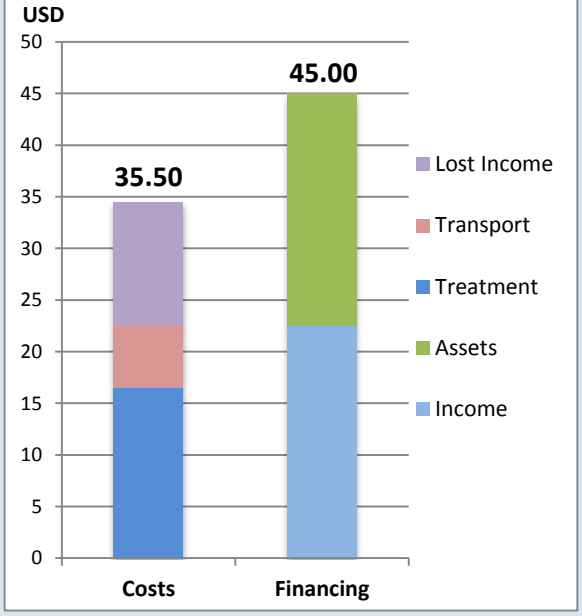


Figure 7: Rogate, 33, Uninsured



Conclusions

The KNCU Health Plan offers *financial value* by eliminating a substantial portion of the direct and indirect costs of an acute illness and helping the insured to use fewer or no other financing strategies. Because it is a cashless product**,** members pay no out-of-pocket costs for covered services. By eliminating these direct costs altogether, the KNCU Health Plan provides irrefutable cost savings to its members. While the product is useful, it does not mitigate other costs related to the illness, such as transport to facility and lost income, so there were still minimal costs that the insured patients needed to finance themselves.

A clinic near Moshi in Lole where a sign is being posted identifying the clinic as a KNCU Health Plan provider

Despite the benefits of the product, *both insured and uninsured groups still seemed to finance more than their costs.*[15] We found a marginally contributing factor to be that three patients may have misperceived the cost of illness, perhaps expecting to incur greater costs than they actually did. More importantly, this suggests great *inefficiencies* in some of the other financing mechanisms available to low-income people in rural Tanzania.

Nonetheless, KNCU Health Plan members who have used the product overwhelmingly perceive it as inexpensive and cost saving. Of the 31 KNCU Health Plan members interviewed, 43% report the price as "reasonable," 17% call it "cheap," and 22% call it "very cheap." They recognize the cost saving aspect as the product's main perk: when asked what they like most about the coverage, 55% commented, without prompting, that it helps them to save money on healthcare. We found that a few patients waited a day or more to get treatment partly due to cost concerns, this suggests that some clients may not fully understand the value that this offers them until after they have used it.

While the residents of Moshi Rural have access to funding in a time of need, most notably personal savings, family, and friends, these are not always available and when they are, they remain limited resources. Insurance allows clients to preserve those strategies for other needs.

In addition to financial value, service quality is high and well perceived by insured patients. When asked what they like about the product, 48% of the insured reported, without prompting, that they are now more likely to seek care. To the same question, 26% of insured reported that they are less worried or stressed than they were before the insurance.

The KNCU Health Plan offers complementary components that lower barriers and improve service value to clients. These components set the product apart from other financing strategies. By providing health information, reducing distances to clinics, improving quality of care, and strengthening relationships between clients and health workers, the plan systematically reduces many non-financial barriers to healthcare. By breaking down these barriers, the product makes it easier for clients to seek care and gives clients an avenue for feedback, which leads to even further improvements in value. For instance, many clients have suggested that the product include optional hospitalization coverage for a higher premium. Client satisfaction is high: overall, 90% of insured respondents said they would recommend the product, and 94% plan to re-enroll next year.

[15] Costs refer to treatment costs (doctor's fees, lab fees, medicine fees, and imaging fees), transport costs, costs of missing work and/or hiring someone to replace the patient, and any additional costs incurred.

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Microinsurance Learning and Knowledge (MILK) is a project of the MicroInsurance Centre that is working collaboratively to understand client value and the business case in microinsurance. Barbara Magnoni leads the client value effort and Rick Koven leads the effort on the business case. For more information contact Michael J. McCord, the project director, at mjmccord@microinsurancecentre.org.