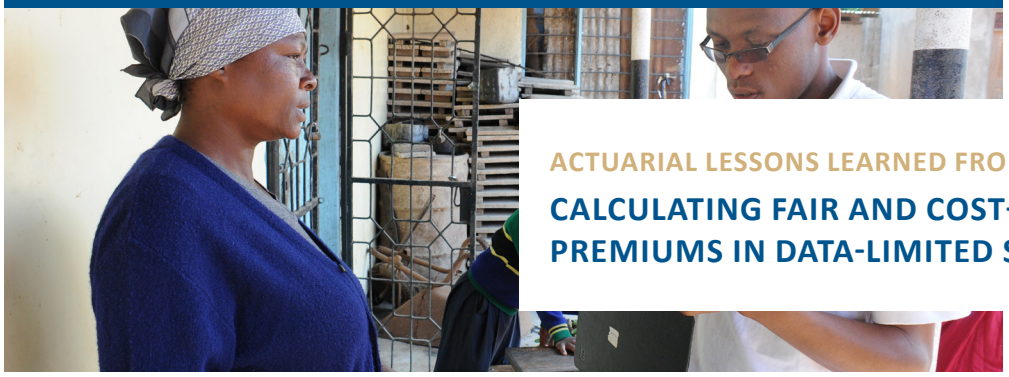
LEARNING & ANALYSIS BRIEF



PharmAccess FOUNDATION

ACTUARIAL LESSONS LEARNED FROM THE ICHF

CALCULATING FAIR AND COST-EFFICIENT HEALTH INSURANCE PREMIUMS IN DATA-LIMITED SETTINGS

This brief illustrates the actuarial considerations behind calculating a health insurance premium in Northern Tanzania and dealing with the data limitations in this setting. As this was a new program and no data was available yet, initial calculations were largely based on data from comparable programs and target group studies. As the insurance program expands over time and utilization data are collected, assumptions can be evaluated and adjusted to ensure the sustainability of the program.

Effective health insurance premiums rely on a delicate balance. On the one hand, they must be affordable for people with low incomes. On the other hand, the premium should be sufficient to cover the operational costs of the insurer and the healthcare provider. If a healthcare package is not accurately priced, the insurer or the healthcare providers risk incurring a financial loss. To prevent this, providers may attempt to mitigate costs by lowering the level of quality of services provided, e.g. by prescribing less drugs or performing less laboratory tests. Healthcare providers may also charge additional payments (co-payments) on top of the reimbursement fees that they already receive from the insurer. This could potentially result in decreased patient satisfaction, affecting willingness to re-enroll in the insurance program. Thus, unfairly or poorly priced premiums and reimbursement rates can significantly impact the success of an entire health plan.

When it comes to implementing health insurance programs in sub-Saharan Africa, how can we ensure the calculation of fair and cost-efficient premiums? How do we deal with actuarial limitations imposed by missing or incomplete data?

Data-limited setting

In Tanzania 85% of the population is uninsured for health. In June 2013, 6.6% of the population was enrolled in the National Health Insurance Fund (NHIF) and 7.2% in the Community Health Fund (CHF). An additional 1% was enrolled in other health insurance schemes. In November 2014, the improved Community Health Fund (iCHF) was launched in the Kilimanjaro region with the aim to increase access to quality healthcare for people in the informal sector, mostly rural and low-income groups. iCHF is a voluntary, district-owned health insurance scheme, built on a strong partnership between NHIF, the district councils (local government) who are the legal owners of CHF, public and private healthcare facilities and PharmAccess. PharmAccess provides actuarial expertise, technical assistance and funding for support on administration, quality improvement and marketing. As there were no claims or utilization data available before inception of the iCHF program, different data sources were used to overcome these limitations and calculate the premium. This included data from similar insurance programs, utilization data from the public health system in the participating districts in Tanzania, target group studies and demographic data. By August 2016, there were 96319 enrollees in the iCHF program. With the amount of data collected on these enrollees, actuarial assumptions can now be evaluated and the premium can be adjusted if necessary. This brief describes the evaluation of the most important (high-level) actuarial assumptions in the premium calculation.

Price differentiation

As the administrator of iCHF, NHIF reimburses both public and private healthcare facilities per enrolled household. In Tanzania, the government covers certain fixed costs for public providers, such as rent, salaries or maintenance. To account for this difference, iCHF's capitation fee for private providers is 50% higher than that for public providers. This has implications for the height of the premium: the more patients enrolled at private facilities, the higher the costs for the program. Based on an expert opinion, the initial iCHF premium calculation assumed that 60% of utilization of healthcare services in the region occurs at public facilities. This contributed to a relatively low premium. However, iCHF program data showed that the role of the private sector is actually much greater: 70% of utilization occured at private facilities. In order to cover the ensuing higher costs, the premium should be higher.

Claim ratio

Is the amount available to cover medical costs sufficient to cover the incurred claims? According to the initial premium expense breakdown for the iCHF program, 66% of the premium collected was

ICHF FACTS

iCHF is a voluntary, district-owned health insurance scheme that aims to increase access to quality healthcare for people in the informal sector in Northern Tanzania.

Active in
7 districts in
2 regions
of Kilimanjaro

96,319 people
enrolled in August 2016
Package covers outpatient, inpatient & surgery

27% of enrollees used care in the past year

230 private and public clinics

average yearly premium per household is **USD 26,**
50% of which is subsidized

Enrolment target
300,000 people in 2018

Data up to August 2016

reserved for medical claims. Program data now reveal that the premium should be slightly higher in order to cover the accumulated costs.

Utilization of services

An important element in the premium calculation is the expected number of annual healthcare provider visits per individual. Higher utilization rates should correspond to higher premiums. In instances where the utilization is higher than expected, some healthcare providers may introduce cash co-payments in order to cover their extra costs. This could pose a threat to the sustainability of the program as it would raise costs for enrollees. Fig. 3 shows that utilization increased in the first couple of months after the inception of the iCHF and then subsequently stabilized to just under 1.5 visits per individual annually. This is just under the assumed average of 2.0 visits per individual annually, suggesting the premium is high enough to cover utilization costs (not taking into account the claim costs).

Household size

The iCHF insurance product is a family product covering one main family member, a spouse and up to four children under the age of 18. The premium calculation was based on target group studies, demographic data and the assumption that the size of the average enrolled household is 4.1 people. Fig. 4 shows how the size of enrolled households has evolved over time. As the actual enrolled household size is slightly higher than expected (4.3), the level of the capitation fee, covering one family, may be increased (also depends on claim value and utilization).

Figure 1: **Share of public and private/faith-based providers in the provision of healthcare services.**

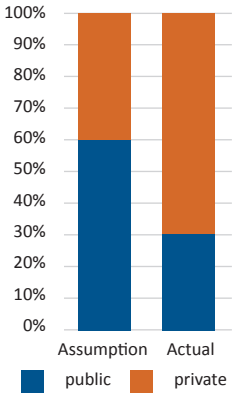
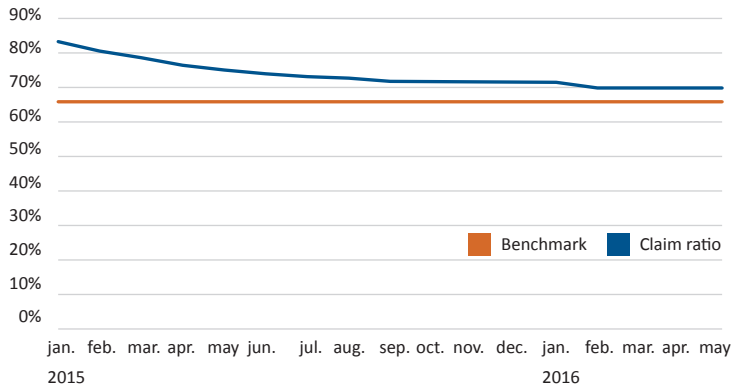


Figure 2 **Estimated and actual amount of claim reimbursements as percentage of total premium collected.**



TAKE HOME MESSAGES

- When calculating a health insurance premium in a data-restricted setting, other sources of data can provide an effective alternative. Despite data limitations in the design phase of iCHF, program data show that the premium was fairly accurately calculated. Where the assumptions were less accurate, the program can now draw on a detailed data set in order to adjust the premium where necessary. This was done in 2016.
- As medical costs, household size, and utilization of the service package change over time, it is important to actuarially review the package annually. This ensures that the premium amount remains fair and cost-efficient.
- In the rural districts where iCHF is active, public healthcare providers vastly outnumber private ones. Yet 70% of enrollees opted for private care, indicating the important role of the private sector.

Figure 3 **Annualized number of visits to a healthcare provider per individual.**

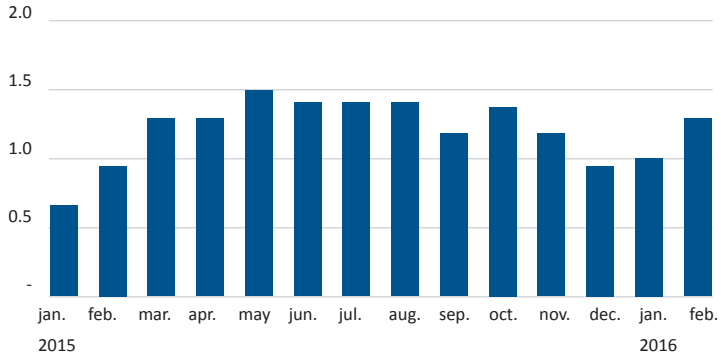
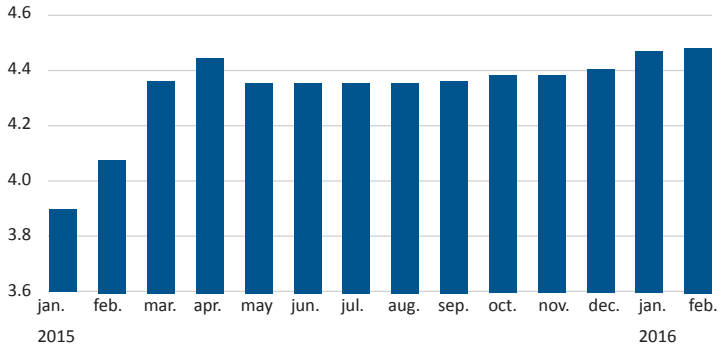


Figure 4 **Average number of people per household enrolled in iCHF.**



AUTHORS

For more information on this topic, please contact the author,
Diederik van Eck d.vaneck@pharmaccess.org

AFFILIATIONS

PharmAccess Foundation