

Community-Based Health Insurance in Rural Tanzania: A Historical Health-Systems Case Study of Low Enrolment in Newala District Council

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Abstract

Community-based health insurance (CBHI) has been promoted in low- and middle-income countries as a mechanism for prepayment, risk pooling and improved financial protection. However, establishing a formal prepayment mechanism does not necessarily result in broad population enrolment. This study retrospectively reconstructs the Community Health Fund (CHF) experience in Newala District Council, Tanzania, to examine why enrolment remained low despite the existence of a formal community-based health-financing mechanism. The study presents a historical health-systems case study of the CHF experience during the 2013 implementation period. The reconstruction draws on contemporaneous evidence from one hospital, two health centres and six dispensaries, together with district and facility documentation. Data were collected through structured interviews incorporating open-ended questions, observation and documentary review. Of 347 sampled potential clients, 301 participated, giving an 87% response rate. Quantitative data were summarized using frequencies and percentages, while qualitative information was analysed thematically. Historical CHF records indicated that 2,105 households were enrolled in 2013, representing approximately 4% of an estimated 48,268 target households. Among the 301 study participants, 31 (10.3%) were CHF members and 270 (89.7%) were non-members. Financial barriers were prominent: 243 (81%) reported challenges paying for health care, while 63 (21%) reported that they could not afford the Tsh 10,000 CHF contribution even through instalments. Knowledge of the benefit package was limited, with 292 (97%) respondents reporting that they did not know its full extent. Respondents and facility assessments also identified shortages of staff, medicines and supplies, inadequate laboratory capacity and concerns regarding management. The Newala case suggests that formal establishment of community-based health insurance was insufficient to generate broad rural enrolment. Affordability, perceived value, service reliability and institutional confidence interacted within the wider health system to shape the attractiveness and feasibility of membership. The case highlights the importance of aligning health-financing mechanisms with household economic circumstances, health-service readiness, communication and accountable management.

Keywords: Community Health Fund; community-based health insurance; health financing; health systems; rural health; Tanzania; Newala; historical case study

Key Messages

- Formal establishment of a community-based prepayment mechanism did not translate into broad enrolment in rural Newala District.
- Low enrolment occurred in a setting where households faced affordability constraints and limited understanding of CHF benefits.
- Health-service shortages and concerns about management and accountability may have reduced the perceived value and credibility of prepayment.
- Community-based health insurance requires alignment between financing design, household capacity to pay, reliable service delivery, effective communication and institutional accountability.

1. Introduction**1.1 Community-based health insurance and rural financial protection**

Direct payment for health services can create financial barriers to care, particularly among households with limited and irregular incomes. Prepayment and risk-pooling mechanisms are intended to spread the financial risk of illness across households and time and to reduce reliance on payment at the point of service [1–4].

Community-based health insurance has therefore been promoted as one approach to extending financial protection to populations outside formal employment, particularly in rural areas of low-income countries [5–7]. However, the existence of an insurance scheme does not necessarily guarantee participation. Evidence from community-based insurance programmes indicates that affordability, understanding of insurance, perceived benefits, quality of health services and confidence in scheme administration may influence enrolment and continued participation [5–9].

Community-based health insurance should consequently be considered not only as a financing intervention but also as part of the wider health system. Households make enrolment decisions within an environment shaped by income, service availability, health-care quality, information and institutional trust.

1.2 The Community Health Fund in Tanzania

The Community Health Fund was established in Tanzania as a voluntary community-based prepayment mechanism intended to improve access to health services and reduce reliance on payment at the point of illness [10,11]. The scheme was particularly relevant to rural households and was implemented through decentralized district structures.

Evidence from Tanzania has shown that implementation of the CHF was affected by interacting challenges, including inability to pay contributions, poor quality of care, limited understanding of the rationale for insurance and lack of confidence in scheme management [10]. Other studies have similarly highlighted the importance of household willingness and ability to pay, service availability and the perceived value of insurance [8,9,12].

The wider Tanzanian health-financing environment also included user fees, exemptions and waivers. These arrangements influenced how households experienced the costs of seeking health care and therefore formed part of the environment in which CHF operated [13,14].

1.3 The historical Newala case

Newala District Council provides an important historical case for examining why formal establishment of community-based health insurance did not translate into broad enrolment.

Historical district records indicated that CHF had been implemented in the district but that coverage remained relatively low. In 2013, 2,105 households were reported as enrolled compared with an estimated 48,268 target households, representing approximately 4% coverage [15–19].

Historical records also indicated fluctuations in CHF coverage over time, including a reported maximum of 15% in 2008 and an average of 6.7% over the preceding five years [15–19]. These figures raise an important health-systems question:

Why did a formally established community-based prepayment mechanism fail to translate into broad rural enrolment in Newala District Council?

1.4 Study rationale and objective

The purpose of this historical reconstruction was not to estimate statistically independent determinants of CHF membership. Rather, the study sought to explain how several conditions operating within the district health system interacted to constrain enrolment.

The objective was to retrospectively reconstruct and explain the factors associated with low CHF enrolment in Newala District Council during the 2013 implementation period, with particular attention to:

1. household affordability;
2. knowledge and perceived value of CHF membership;
3. availability and quality of health services; and
4. confidence in management and accountability.

2. Methods

2.1 Historical health-systems case-study design

The study uses a retrospective historical health-systems case-study design. The original investigation generated contemporaneous evidence through interviews, observation and documentary review. The present article retrospectively organizes and interprets that evidence to explain the conditions surrounding low CHF enrolment.

Case-study methodology is appropriate where a complex intervention is examined within its real-world institutional and social setting [20,21]. The present article should therefore be understood as a historical reconstruction of the 2013 CHF experience, rather than as a contemporary assessment of CHF performance.

2.2 Study setting

The study was conducted in Newala District Council in Mtwara Region, Tanzania Mainland. The health-service network considered in the investigation comprised one hospital, two health centres and six dispensaries. The district was selected because CHF had been formally established but historical records indicated persistently low enrolment.

2.3 Historical sources

The historical reconstruction used several sources of evidence:

- interviews with potential and existing CHF clients;
- direct observation of health facilities;
- district CHF records;
- council technical and financial reports;
- council comprehensive health plans;
- facility information;

- staffing and service-readiness records; and
- CHF policy and regulatory documents [15–19,22,23].

The documentary sources included the Newala District Council CHF reports for 2009–2013, the Council Comprehensive Health Plans, the Newala District Socio-economic Profile, the CHF By-Laws and the CHF Instrument for Newala District Council [15–19,22–24].

2.4 Sampling and participants

The investigation included one hospital, two health centres and six dispensaries. A total of 347 potential clients were sampled for interview. Of these, 301 participated, resulting in an 87% response rate. The participants included both CHF members and non-members, allowing the investigation to capture experiences and perceptions among households with different relationships to the scheme.

2.5 Data collection

Data were collected through structured interviews incorporating open-ended questions, direct observation and documentary review.

The interviews examined:

- experience of paying for health care;
- ability to pay the CHF contribution;
- knowledge of CHF benefits;
- perceptions of health-service quality;
- experiences with medicines and supplies;
- perceptions of health-service management; and
- views concerning CHF implementation.

Observation was used to assess facility conditions, staffing, laboratory capacity and availability of medicines and supplies. Documentary review was used to examine CHF implementation, enrolment, supervision, reporting and other aspects of district administration.

2.6 Data analysis

Quantitative information was summarized using frequencies and percentages. The analysis was descriptive and did not use multivariable modelling. Qualitative information from open-ended questions, observations and documents was organized thematically. The interpretation was subsequently structured around four interacting domains:

1. affordability;
2. knowledge and perceived value;
3. service availability and quality; and
4. trust and management.

The analysis therefore focuses on interacting factors rather than claiming statistically independent causal determinants.

2.7 Historical interpretation and triangulation

The analysis distinguished among:

- documented historical facts;
- respondent perceptions and reported experiences; and
- researcher interpretation.

This distinction was particularly important for management findings. Respondents' beliefs that funds were squandered or that managers protected underperforming providers were treated as **perceptions**, rather than independently verified evidence of financial misconduct. Similarly, indications of adverse

selection were interpreted cautiously because the available evidence did not permit the extent of adverse selection to be quantified.

The interpretation also sought to triangulate evidence across interviews, facility observations and documentary sources. Findings were given greater interpretive weight where different sources pointed to the same underlying constraint.

2.8 Ethical considerations

Participants were informed about the purpose of the study, the voluntary nature of participation, confidentiality procedures and their right to decline participation. Written informed consent was obtained. The original documentation indicates approval through relevant district and academic structures. The available documentation does not identify a named institutional ethics committee or approval number. The author should verify and insert the exact ethics committee, approval number and approval date, if available, before submission.

2.9 Reflexivity

The author planned, implemented and reported the original 2013 study, Community Health Fund in Newala District Council: Trends and Strategies for Further Extension, and is also the author of this manuscript. This familiarity with the study setting may have influenced data interpretation and reporting. To reduce potential bias, the analysis distinguishes documented evidence from participants' perceptions and the author's interpretation. Findings are therefore presented cautiously, particularly where documentary evidence was limited, and are not interpreted as evidence of current CHF performance.

3. Results

3.1 Historical extent of CHF enrolment and study participation

Historical district records indicated that 2,105 households were enrolled in CHF in 2013. Against an estimated 48,268 target households, this represented approximately 4% coverage [15–19]. The historical records also indicated substantial variation in coverage. CHF coverage was reported to have reached 15% in 2008, while the average reported coverage over the preceding five years was 6.7% [15–19].

Among the 301 study participants, 31 (10.3%) were CHF members and 270 (89.7%) were non-members.

Table 1. CHF membership among study participants

CHF status	Number	Percentage
CHF members	31	10.3
Non-members	270	89.7
Total	301	100.0

The low proportion of CHF members among participants was consistent with the low level of district-level enrolment documented in the historical records.

3.2 Affordability constrained participation

Financial difficulty was a prominent feature of respondents' experiences. Overall, 243 (81%) reported challenges paying for health care. Among these 243 respondents:

- 189 (78%) reported inability to pay;
- 129 (53%) reported high transport costs;
- 110 (45%) reported tipping health-care providers; and

- 103 (42%) reported costs associated with unavailable medicines or supplies.

Respondents also described several coping strategies. Among those reporting payment challenges:

- 241 (99%) reported selling assets;
- 179 (74%) relied on relatives;
- 107 (44%) borrowed money;
- 99 (41%) used traditional medicines;
- 76 (31%) used self-medication; and
- 33 (14%) reported receiving no care.

Ability to pay the CHF contribution was also limited. Of the 301 respondents, 81 (27%) reported that they could pay the Tsh 10,000 contribution in one instalment. A further 157 (52%) reported that they could pay in two instalments, while 63 (21%) could not afford the contribution even through instalments. These findings indicate that the formal availability of prepayment did not necessarily mean that the mechanism was financially accessible to rural households.

3.3 Limited knowledge weakened perceived value

Knowledge of the CHF benefit package was limited.

A total of 292 (97%) respondents reported that they did not know the full extent of CHF benefits. Under the formal scheme arrangement, a Tsh 10,000 contribution entitled the principal member, spouse and up to four children aged 18 years or below to specified services at public facilities within the district for one year. The membership card could also be used elsewhere under the applicable scheme arrangements [22,23].

The gap between the formal benefit package and respondents' reported knowledge suggests that the perceived value of membership may have been lower than the value intended by the scheme design. Previous evidence from Tanzania has similarly shown that limited understanding of community-based health insurance can discourage participation [10].

3.4 Weak service capacity reduced the practical value of membership

Respondents reported substantial constraints in health-service delivery. Reported concerns included:

- staff shortages;
- inadequate provider support;
- shortages of medicines and medical supplies; and
- inadequate laboratory coverage.

The facility assessment provided further evidence of constrained service capacity. Across the nine facilities, 246 staff were available against a stated requirement of 681, equivalent to approximately 36% of required staffing.

All nine facilities were reported to have inadequate laboratory services. Only three functional microscopes were available, while routine tests were constrained by shortages of reagents, equipment and other supplies.

These findings are important because the value of health insurance depends not only on financial coverage but also on whether insured households can obtain appropriate and reliable services when they seek care.

Previous research has similarly emphasized the relationship between health-service quality and participation in community-based insurance [8–10].

3.5 Trust and management weakened confidence

Concerns regarding health-service management were widespread. All 301 respondents reported doubts

about health-service management. Among respondents:

- 240 (80%) believed that managers squandered health funds;
- 237 (79%) considered managers insufficiently committed; and
- 121 (40%) believed that managers protected underperforming providers.

These findings represent respondent perceptions and should not be interpreted as independently verified evidence of financial misappropriation or managerial misconduct. Observation and documentary review also identified implementation weaknesses. These included limited CHMT supervision, lack of CHF-specific supervision in the nine facilities by the end of the third quarter, inconsistencies in user-fee policy, weak records and limited technical support [18,19]. The importance of implementation and management is consistent with previous analysis of CHF implementation in Tanzania [10].

3.6 Interacting health-systems constraints

The findings suggest that low enrolment cannot be adequately explained by a single constraint. Households with limited financial resources faced difficulty paying the contribution. At the same time, limited knowledge of the benefit package reduced their ability to assess the value of membership.

The expected value of membership was also influenced by service availability. Staff shortages, medicine and supply shortages and inadequate laboratory capacity could reduce the practical value of having insurance coverage. Finally, concerns about management and limited implementation support could weaken confidence in the scheme. The historical evidence therefore indicates an interaction among four dimensions: **affordability** → **perceived value** → **service reliability** → **institutional confidence**

These dimensions were embedded within the wider district health system.

4. Discussion

4.1 Principal historical finding

The principal finding of this historical reconstruction is that formal establishment of CHF did not automatically create conditions for broad rural enrolment. The Newala experience indicates that households encountered a combination of financial, informational, service-delivery and institutional constraints.

This finding is consistent with earlier evidence that community-based health insurance performance depends on more than the existence of a financing mechanism. Affordability, perceived benefits, service quality and institutional factors can influence participation [5–10].

The contribution of the Newala case is therefore to illustrate how these constraints could operate simultaneously within a rural district health system. Rather than identifying a single determinant of membership, the case points to a mismatch between the formal insurance mechanism and the health-system conditions required to make prepayment sufficiently affordable, understandable, useful and trustworthy to rural households.

4.2 Affordability and rural household economic circumstances

The ability to pay the CHF contribution was uneven. While 81 (27%) respondents reported that they could pay Tsh 10,000 in one instalment and 157 (52%) could pay in two instalments, 63 (21%) could not afford the contribution even through instalments.

This is important in the context of voluntary insurance because households must pay before they know whether illness will occur. The problem was not limited to the CHF contribution itself. Respondents also identified transport costs, tipping providers and expenditure on medicines and supplies when these were unavailable.

Previous Tanzanian evidence has demonstrated that user fees and other direct costs can create financial barriers to health-care access [13,14]. The Newala findings indicate that these financial pressures existed alongside the CHF contribution.

Consequently, the affordability of insurance cannot be considered independently from the broader cost of obtaining health care. Where households already face substantial direct and indirect costs, an additional prepayment contribution may compete with immediate household needs.

4.3 Perceived value and service quality

The limited knowledge of CHF benefits may have reduced perceived value. Insurance is an intangible product: households pay in advance for protection against an uncertain future event. If the benefits are not understood, the contribution may be perceived as an immediate cost rather than as protection against future health expenditure [5,6].

Service quality further influences perceived value. In Newala, staffing, laboratory capacity, medicines and supplies were constrained. Previous studies of community-based insurance have shown that poor-quality services can reduce willingness to enrol or remain enrolled [8–10].

Thus, increasing enrolment without improving service capacity may create a mismatch between the financial promise of insurance and the services that members actually experience. The historical case therefore suggests that demand for insurance is partly produced by the quality and reliability of the service system to which insurance provides access. A nominally comprehensive benefit package may have limited attractiveness when households expect that they will still need to purchase medicines elsewhere, travel long distances or face unavailable diagnostic services.

4.4 Trust, management and institutional legitimacy

Trust is particularly important for voluntary prepayment. Households must believe that contributions will be managed appropriately and that membership will provide the promised protection. The widespread concerns reported by Newala respondents therefore represent an important institutional dimension of low enrolment.

However, these findings should not be interpreted as proof of actual financial mismanagement. They demonstrate that a substantial proportion of respondents lacked confidence in health-service management.

This interpretation is consistent with previous Tanzanian evidence identifying trust and implementation arrangements as important aspects of CHF performance [10].

The documentary and observational findings provide additional context for these perceptions, including limited supervision, weak records and limited technical support [18,19]. Together, these findings suggest that institutional credibility was part of the environment in which households evaluated whether to join the scheme.

4.5 The health-systems interaction

The Newala case suggests that affordability, knowledge, service quality and trust reinforced one another. A household with limited resources may be reluctant to pay for insurance if the benefits are unclear. The same household may be even less willing to enrol if health facilities lack medicines, staff or diagnostic capacity.

Similarly, even an affordable and useful benefit package may attract limited participation if households lack confidence in the institutions administering the scheme. The resulting problem is therefore not simply a question of whether the premium was too high or whether households lacked knowledge.

Rather, the insurance mechanism operated within a health system in which several supporting conditions were simultaneously weak.

This interaction provides the central health-systems lesson from the Newala case. Prepayment creates financial protection only when the financial mechanism, service delivery system and institutional arrangements are sufficiently aligned for households to perceive membership as both feasible and worthwhile.

4.6 Adverse selection and moral hazard

The historical evidence contained indications that membership could be influenced by perceived health needs, raising the possibility of adverse selection. However, the available data do not allow the magnitude of adverse selection to be established. Likewise, the study did not generate sufficient evidence to demonstrate moral hazard. These concepts are relevant to the theoretical understanding of voluntary insurance [5,6], but they should not be presented as established empirical findings of the Newala case.

4.7 Policy and health-systems implications

The historical Newala experience has several implications for the design and implementation of community-based health insurance. First, affordability should be treated as a health-financing design issue rather than simply a household willingness-to-pay issue. Contribution schedules need to reflect the economic circumstances of rural households, particularly where income is seasonal or irregular. Flexible payment arrangements may reduce the immediate financial barrier, but flexibility alone may be insufficient for households that cannot afford the total contribution.

Second, expansion of insurance coverage should be accompanied by improvements in health-service readiness. Staffing, medicines, supplies, laboratory services and provider support are not separate from insurance performance. They contribute directly to whether households perceive membership as valuable.

Third, communication about benefits should be treated as a core component of insurance implementation. Communities need clear information about who is covered, which services are included, where members can obtain care, the duration of membership, referral arrangements and procedures for using membership cards.

Fourth, transparent management and accountability are important for institutional confidence. Monitoring should include membership, revenue, expenditure, service quality and implementation performance. Community members should have mechanisms through which they can obtain information, provide feedback and participate in accountability processes.

Fifth, exemptions, waivers or publicly financed alternatives remain important for households that cannot afford voluntary contributions. Poor households may remain excluded from contributory mechanisms even where contribution schedules are made more flexible [13].

Finally, community participation should extend beyond recruitment. Participation in scheme governance, communication, feedback and accountability may help align the formal design of insurance with community expectations and local health-service realities.

4.8 Implications beyond the Newala case

The Newala experience demonstrates a broader principle concerning health-financing reform. A formal financing mechanism requires an enabling environment. Household affordability, understanding of benefits, health-service readiness and institutional accountability must operate together if insurance is to become attractive to a large proportion of the population.

The case therefore contributes to the understanding of community-based health insurance by showing how a formal scheme can remain poorly subscribed when its financial, service-delivery and institutional components are not sufficiently aligned.

Although the evidence is historical and district-specific, the underlying lesson is relevant to other settings where voluntary community-based insurance is introduced among populations outside formal employment. Insurance design cannot be separated from the health system through which its promised benefits are delivered.

5. Strengths and Limitations

A major strength of the study is its use of multiple historical sources, including interviews, observation and documentary evidence. The study also considered the problem across several levels of the health system, including households, health facilities and district management. The combination of contemporaneous participant evidence and documentary information provides a richer account than reliance on enrolment statistics alone.

However, several limitations should be acknowledged. First, the evidence concerns the 2013 implementation period and should not be interpreted as describing current CHF performance. Second, the study was conducted in one district and does not provide statistically generalizable estimates for Tanzania as a whole.

Third, the quantitative analysis was descriptive and no multivariable modelling was undertaken. The study therefore identifies interacting factors and historically plausible explanations rather than statistically independent causal determinants. Fourth, some management findings represent respondents' perceptions and were not independently verified.

Fifth, the present manuscript deliberately does not reproduce the corresponding percentages where their denominators cannot be independently established from the available material. Finally, the present article is a retrospective reconstruction. Its interpretation therefore depends on the completeness and quality of the surviving contemporaneous records.

6. Conclusion

The historical Newala case demonstrates that the formal establishment of community-based health insurance did not automatically translate into broad rural enrolment. Low enrolment occurred within a wider health-system environment characterized by household affordability constraints, limited knowledge of insurance benefits, weaknesses in health-service capacity and concerns about management and accountability.

These factors appear to have interacted rather than operated independently. Households needed to be able to afford the contribution, understand the benefits of membership, believe that services would be available and useful when required, and have confidence in the institutions managing the scheme. The central lesson from the Newala case is therefore that a formal prepayment mechanism is necessary but insufficient for broad rural enrolment.

Community-based health insurance is more likely to become attractive when financing arrangements are aligned with household economic circumstances, benefits are clearly communicated, services are reliable and institutions are accountable. Although the empirical evidence reconstructed here relates to 2013, the historical case illustrates a broader health-systems principle: health-financing reforms are

implemented through the social, economic, service-delivery and institutional environments in which people make decisions about health care.

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