HEALTH SECTOR FINANCING REFORM/
HEALTH FINANCE AND GOVERNANCE (HSFR/HFG) PROJECT

COMMUNITY-BASED HEALTH INSURANCE PROGRAM IN ETHIOPIA: ASSESSING INSTITUTIONAL AND FINANCIAL SUSTAINABILITY

The Health Finance and Governance Project

USAID's Health Finance and Governance (HFG) project helps to improve health in developing countries by expanding people's access to health care. Led by Abt Associates, the project team works with partner countries to increase their domestic resources for health, manage those precious resources more effectively, and make wise purchasing decisions. As a result, this six-year, $209 million global project increases the use of both primary and priority health services, including HIV/AIDS, tuberculosis, malaria, and reproductive health services. Designed to fundamentally strengthen health systems, HFG supports countries as they navigate the economic transitions needed to achieve universal health care.

COMMUNITY-BASED HEALTH INSURANCE PROGRAM IN ETHIOPIA: ASSESSING INSTITUTIONAL AND FINANCIAL SUSTAINABILITY

CONTENTS

ACRONYMS

CBHI	Community-Based Health Insurance
CBOs	Community-Based (non-governmental) Organizations
EHIA	Ethiopian Health Insurance Agency
ETB	Ethiopian Birr
GoE	Government of Ethiopia
HC	Health Center
HSTP	Health Sector Transformation Plan
KII	Key Informant Interview
SNNP	Southern Nations, Nationalities, and Peoples

ACKNOWLEDGMENTS

1. INTRODUCTION

1.1 Background

As part of its strategy to achieve universal health coverage, the Government of Ethiopia (GoE) has been focusing on piloting and expanding community-based health insurance (CBHI). The CBHI program aims to cover citizens in the rural and informal sector, estimated to be 85% of the Ethiopian population. The initial pilot of the CBHI program included 13 woredas in Amhara, Oromia, Southern Nations, Nationalities, and Peoples (SNNP), and Tigray regions. A 2015 evaluation assessed the pilot's impact on utilization, quality, and protection of beneficiaries from financial impoverishment due to health expenditures. Positive findings from this evaluation informed the GoE's decision to design and implement a national scale-up initiative.[1] Between 2016 and 2017, the CBHI program expanded schemes to 374 woredas in Ethiopia. As of July 2017, 271 of the schemes were operational (those not yet operational were still in the startup phase). Of these operating schemes, 24% (66) have been functioning for more than two years. Of these 66 schemes, 35 (53%) had enrolled less than 40% of eligible households in CBHI in 2016, while 10 (16%) had enrolled 60% or more of eligible households. Overall, in 2016 there were about 0.67 visits to a health center per beneficiary (3.09 visits per enrolled household), and 0.08 visits to a hospital per beneficiary (0.36 visits per enrolled household).[2]

The GoE is working on increasing the number of woredas with CBHI schemes to achieve the Health Sector Transformation Plan 80-80 target by 2020, which calls for 80% of woredas with a CBHI scheme enrolling at least 80% of eligible households[3]. However, besides the 2015 evaluation of the pilot schemes, there has not been a formal assessment to measure CBHI program performance and sustainability, which can be affected by a number of interlinked challenges. These include factors related to financial solvency, institutional viability, and the relationships between the CBHI scheme and government, community, and health organizations.

1.2 Study objectives

This study has two broad objectives. The first objective was to assess the financial sustainability of CBHI schemes, focusing on schemes that have been operational for more than two years. The first component provides quantitative descriptions of enrollment, utilization, and financial solvency of CBHI schemes over time.

The second objective of the assessment was to provide in-depth descriptions of institutional structures, human resource capacity, engagement and commitment of key stakeholders, and community and member engagement by CBHI schemes that drive or constrain sustainability of CBHI schemes.

1.3 Research questions

The primary research question for the financial assessment of this work is: Are CBHI schemes financially sustainable (both with and without the government subsidy, and a comparison of the two) in the short

---

[1] Ethiopian Health Insurance Agency. May 2015. Evaluation of Community-Based Health Insurance Pilot Schemes in Ethiopia: Final Report. Addis Ababa, Ethiopia.
[2] The average household size is 4.6 as per Demographic and Health Survey (DHS) 2016.
[3] Ministry of Health, Federal Democratic Republic of Ethiopia. October 2015. Health Sector Transformation Plan: 106.

to medium (five to seven year) timeframe? To address this research question, we identified the following more specific research questions:

1. Is there an association between the enrollment ratio and the length of time a CBHI scheme has been operational?

2. Is there an association between the length of time a CBHI scheme has been operational and the utilization rates of enrolled households?

   a. Is there an association between utilization and the percentage of eligible households enrolled (i.e., the enrollment ratio) in a CBHI scheme?

3. How do financial inflows and outflows change over time?

4. Is there a 'threshold' enrollment ratio at which CBHI schemes appear to become financially sustainable?

   a. How has financial solvency (financial performance) behaved over time?

   b. What would be the level of subsidy required to make schemes financially solvent year to year?

The other major research question of the assessment (assessing institutional sustainability) is to identify key factors that drive or constrain the sustainability of CBHI schemes. More specific research questions include:

Structure

1. How has the location of the CBHI scheme management office (woreda health office versus woreda administration office) enabled or constrained performance?

2. How does the CBHI regulatory framework work, and what changes can be made to improve the enabling environment?

Human Resources

1. How have the experience, education, and number and make up of CBHI scheme staff facilitated or constrained performance?

Engagement / Commitment of Key Stakeholders

1. How has the engagement and / or commitment of CBHI scheme management staff facilitated or constrained performance?

2. How has the engagement and / or commitment of CBHI scheme kebele level mobilizers facilitated or constrained enrollment / retention?

3. How has local government engagement with and / or commitment to CBHI scheme activities facilitated or constrained performance?

4. How has local community leader engagement with and / or commitment to CBHI scheme activities facilitated or constrained performance?

5. How have positive or negative incentives been used to drive CBHI performance?

Community / Member Engagement

1. How do CBHI schemes engage communities to address complaints, identify problems, and collect feedback to improve performance?

2. How have mechanisms for complaints / dispute resolution facilitated or constrained CBHI enrollment and retention?

3. What organizational structures and / or management practices exist to engage the community?

4. What organizational structures and / or management practices exist to engage CBHI members?

5. How has government commitment, political will, and adherence to the existing regulatory framework facilitated or constrained CBHI performance?

2. STUDY DESIGN AND METHODOLOGY

This study was a mixed methods sequential explanatory study, and incorporated desk reviews, analysis of secondary data, and semi-structured key-informant interviews (KII) with stakeholders. We conducted the study in a limited subset of CBHI schemes in operation for over two years, stratified according to different levels of enrollment ratios (less than 25%, 25%-less than 50%, and 50% or greater). Please see Annex A for a list of schemes included in the study.

2.1   Subjects and sampling

Study population: The study population for financial data collection consisted of the 66 CBHI schemes that have been in operation for more than two years. For the qualitative data, the study population was the staff of the 66 schemes, along with other identified scheme stakeholders. Stakeholders included staff at the Ethiopian Health Insurance Agency, regional health bureaus and woreda health offices, members of the board of directors of CBHI schemes, health extension workers (who are employed by the government), and community-based (non-governmental) organizations that have supported CBHI expansion.

Study location: We conducted the study in four regions of Ethiopia that have CBHI schemes that have been in operation for more than two years.

Sampling and sampling strategy: We selected individual schemes using a mixed purposive and random selection approach. To ensure regional representativeness, all four eligible regions were included in the study. In SNNP and Tigray, we included all eligible schemes in the study because only three schemes in each region had been operational for more than two years. In Amhara and Oromia, we included a total of 18 schemes (nine from each region). In these two regions, we intended to select three schemes from each of the enrollment ratio strata (for a total of nine schemes in each region). However, not all strata had three eligible schemes, so schemes from other strata were included as replacements (Annex A).

For the qualitative sample, we used a maximum variation approach to select woredas in the sample with the highest and lowest enrollment ratios, as well as those nearest the median across all 66 schemes included in the sample frame (Annex A). In total, KIIs were conducted in six CBHI schemes across the four regions, resulting in 30 KIIs from seven different organizations / cadre in each woreda (Annex B).

2.2   Data collection and analysis

We measured financial sustainability quantitatively through an analysis of client databases from all 24 CBHI schemes included in the study. Trained data collectors extracted secondary data from the CBHI schemes' routine reporting systems and financial reports, based on a standard Microsoft Excel extraction tool (Annex C1). Quantitative data analyses were done in Microsoft Excel and Stata MP 12.0. The analyses intend to describe associations and trends; causal analyses are not undertaken. We calculated averages using survey weights, with the survey weight equal to the inverse of the probability of the inclusion of each CBHI scheme in the study. Averages are calculated for each scheme, for each region (where appropriate), and for all the schemes. We assessed trends between two variables using locally weighted sum of squares regression using running-line least squares (hereafter "local regression")

to visually assess the associations between two variables. Local regressions provide visual associations, but do not provide statistical tests or measures of associations between two variables. Thus, we perform statistical tests using fixed-effect regressions, including fixed effects for year and each scheme. For the analyses, 'year' refers to the number of years a scheme has been in operation. For example, if one scheme started operations in 2015, while another started operations in 2014, 2015 is considered 'year 1' (first year of operation) for the former while 2014 is considered 'year 1' for the latter. A p-value of less than 0.05 is considered statistically significant. Financial models were also constructed; the methods for the construction of these models are described immediately before presenting the results for the models.

In general, we use households as the unit of analysis for calculations because CBHI schemes enroll households. The list below provides the definitions of terms and indicators used in these analyses:

- **Enrollment ratio**: The number of member households in a scheme divided by the total number of households eligible for enrollment in a CBHI scheme.

- **Renewals**: Households that have ever previously been enrolled in a CBHI scheme. For example, a household that was enrolled in the first year of operation, not enrolled in the second year of operation, and enrolled again in the third year of operation would be considered a 'renewal' for these analyses, based on the definition used by CBHI schemes. Note that this may overstate the number of renewals compared to other studies that define renewals on a year-on-year basis. We calculate the proportion of renewed households as the number of renewed household divided by the number of enrolled households.

- **Outpatient visits per enrolled household**: The number of outpatient visits by members of enrolled households divided by the number of households enrolled in the CBHI scheme. This includes all outpatient visits, regardless of the type of facility.

- **Inpatient visits per enrolled household**: The number of inpatient visits by members of enrolled households divided by the number of households enrolled in the CBHI scheme.

- **Contributions from the paying members:** The amount of money collected from paying enrolled households. Presented both in total and the amount of contributions from the community per enrolled household.

- **Targeted subsidies**: Money received by CBHI scheme(s) from the woreda and regional governments for indigent households enrolled in the scheme.

- **General subsidies**: Money received by CBHI scheme(s) from the federal government.

- **Payments**: Money paid by the CBHI scheme to health facilities for user fees and to households (for out-of-pocket expenses). Payments are also calculated according to the type of visit and per enrolled household.

- **Balance**: Revenue (either in total or by type/ source of revenue) minus payments. A positive balance indicates a surplus, while a negative balance implies a deficit.

- **Staff turnover**: The number of staff leaving a scheme in a given year divided by the number of staff employed by the scheme at the beginning of the year.

For the qualitative analysis, data collectors gather primary data based on a semi-structured interview guide (Annex C2). Interviews were conducted in Amharic and other local languages in use. Interview data was recorded, transcribed and translated, coded, and then analyzed using NVivo 12.0.

3. RESULTS

Quantitative data were available from 23 of the 24 schemes included in the sample. Financial records at one scheme in Amhara were not available because they were under the custody of auditor for financial auditing and investigation at the time of data collection.

3.1 Enrollment ratio and the length of time a CBHI scheme has been operational

Highlights:

- The enrollment ratio increased, on average, the longer schemes were in operation.

- Schemes with higher enrollment ratios (compared to other schemes) in the first year of operation also tended, with some exceptions, to have relatively higher enrollment ratios in the latest year of operation.

Of the 23 CBHI schemes included in the sample, four (Adea Berga, Boset, Digelu Tijo, and Siraro) had been in operation for three years, five (Adea, Burie, Hidhebu Abote, Kewot, and Woreta) had been in operation for four years, five (Aleltu, Dangila, Dewa Cheffa, Sekota Town Administration, and Worebabo) had been in operation for five years, four (Ahferom, Kilte-Awlaelo, Kuyu, and Tahtay-Adiyabo) had been in operation for six years, and five (Damboya, Damot Woyde, Gimbichu, South Achefer, and Yirgalem Town) had been in operation for seven years.

Between the first year of operation and the last year that data were available, 16 of the 23 schemes (74%)[4] saw a net increase in the enrollment ratio. Between the first year of operation and the last year that data were available, the average increase in the enrollment ratio for the 23 schemes was nine percentage points from 27% to 36% (Table 1). Note that after the second year of operation, the enrollment ratio is a function of two things: the number of newly enrolled households for that period, plus households that have renewed their enrollment for the second (or more) time. Two of the schemes (Damot Woyde and Kilte-Awlaelo) included in the sample had an enrollment ratio greater than 50% in the first year of operation, while seven schemes (Dewa Cheffa, Kewot, South Achefer, Gimbichu, Damot Woyde, Kilte-Awlaelo, and Tahtay-Adiyabo) had an enrollment ratio greater than 50% in the last year that data were available. The second year of operation had the greatest variability in terms of change in enrollment ratio (range: -45% to 39%). There was less extreme 'negative' change in years three through five, although a few schemes had a positive increase in the enrollment ratio year-on-year of greater than 20 percentage points.

---

[4] Averages and percentages for results across the schemes are presented using sampling weight adjustments unless otherwise noted.

Table 1: Enrollment ratios of sampled CBHI schemes in first and latest year of operation

Region	Woreda[1]	Years of operation at time of study	Enrollment ratio[3] (percentage of eligible households enrolled in CBHI)		Percentage point change from previous year[4] (enrollment ratio in year minus enrollment ratio in the previous year)					
			1st year	Last year available	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Oromia	**Boset**	3	14%	13%	1%	-3%				
SNNP	Yirgalem Town	7	26%	16%	-7%	2%	3%	1%	-15%	5%
Amhara	**Sekota Town Administration**	5	28%	18%	-7%	-6%	4%	-2%		
Oromia	Digelu Tijo	3	18%	18%	-8%	8%				
Oromia	Adea Berga	3	23%	18%	3%	-8%				
Amhara	Woreta	4	20%	23%	1%	-3%	5%			
SNNP	Damboya	7	27%	26%	12%	-4%	-9%	3%	-4%	1%
Oromia	Kuyu	6	19%	29%	-9%	0%	11%	-2%	10%	
Oromia	Hidhebu Abote	4	19%	29%	23%	-7%	-6%			
Amhara	Worebabo	5	51%	29%	-45%	25%	12%	-14%		
Oromia	Siraro	3	29%	34%	1%	3%				
Amhara	Burie	4	21%	34%	3%	12%	-1%			
Oromia	Aleltu	5	21%	38%	15%	9%	9%	-16%		
Oromia	Adea	4	18%	40%	18%	4%	0%			
Amhara	Dangila	5	23%	41%	-1%	-1%	16%	4%		
Tigray	Ahferom	6	45%	45%	-29%	4%	2%	6%	18%	
Amhara	Dewa Cheffa	5	18%	53%	27%	11%	-2%	-1%		
Amhara	Kewot	4	44%	55%	-31%	41%	1%			
Amhara	South Achefer	7	30%	58%	29%	-14%	-7%	5%	6%	9%
Oromia	**Gimbichu**	7	11%	60%	39%	1%	0%	3%	4%	1%
SNNP	**Damot Woyde**	7	50%	60%	-4%	4%	-2%	0%	10%	2%
Tigray	Kilte-Awlaelo	6	54%	68%	-17%	2%	3%	34%	-9%	
Tigray	**Tahtay-Adiyabo**	6	27%	77%	-1%	-3%	5%	13%	36%	
Weighted Average[2]		4.6	27%	36%	0%	5%	3%	0%	7%	6%

[1]Woredas in boldface indicate in-depth qualitative data were collected at that woreda; woredas are ordered by the enrollment ratio in the last year that data were available.
[2]Averages are weighted to reflect the sample design.
[3]Enrollment ratio calculated based on the number of households enrolled divided by the total households eligible to enroll in CBHI. Shading indicates the enrollment ratio was below the average of the sample.
[4]Yr: Year; data presented may not sum to totals due to rounding. Shaded areas in 'change from previous year' denote a negative change in the enrollment ratio compared to the previous year.

Eight of the 14 (57%) schemes that had lower than average enrollment in the first year of operation also had lower than average enrollment in the latest year of operation. Four (Damboya, Sekota Town Administration, Siraro, and Worebabo) of the nine (44%) schemes that had above average enrollment in the first year of operation had lower than average enrollment in the latest year of operation. Three schemes (Adea, Gimbichu, and Siraro) never had a year-on-year decrease in the enrollment ratio.

Overall, the enrollment ratio increased, on average, the longer schemes were in operation; the majority of schemes were able to increase the enrollment ratio year-on-year, even after several years of operation. In the third through seventh year of operation, over 60% of CBHI schemes had a year-on-year increase in the enrollment ratio (Table 2).

Table 2: Average enrollment ratio and average change in enrollment ratio by year of operation

Year of operation	Weighted mean enrollment ratio	p-value (compared to Year 1)	Number of schemes with higher enrollment ratio than previous year	Percentage of schemes with higher enrollment ratio than previous year
1	27%	reference	N/A	N/A
2	26%	0.94	12	52%
3	32%	0.25	14	61%
4	39%	0.007**	13	68%
5	39%	0.08	9	64%
6	46%	0.005**	6	67%
7	50%	0.008**	5	100%

P-values calculated controlling for CBHI-scheme specific fixed effects; **indicates a p-value of less than 0.01 when compared against reference; N/A: Not Applicable

Schemes that had a higher enrollment ratio in the first year of operation also tended to have higher enrollment ratios in the latest year of operation. As discussed below, schemes with a higher enrollment ratio in the first year of operation maintained similar renewals as a percentage of enrolled households as schemes with a lower enrollment ratio in the first year of operation, suggesting that schemes with a higher enrollment ratio in the first year of operation were able to retain enrolled households. Four (Ahferom, Damot Woyde, Kewot, and Kilte-Awlaelo) of the five schemes that had an enrollment ratio greater than 40% in the first year of operation also had an enrollment ratio over 40% in the last year of operation. However, one scheme (Worebabo) with an enrollment ratio of over 50% in the first year of operation had an enrollment ratio of 29% after four years of operation (the latest year available), while one scheme (Tahtay-Adiyabo) with an enrollment ratio of 27% in the first year of operation had an enrollment ratio of 77% in its sixth year of operation (the latest year available). While having a high enrollment ratio in the first year of operation may help to predict high enrollment ratios in subsequent years of operation, other factors at the individual scheme level can influence the enrollment ratio over time (Figure 1).

Figure 1: Comparison of enrollment ratio in the starting year and the latest year of operation
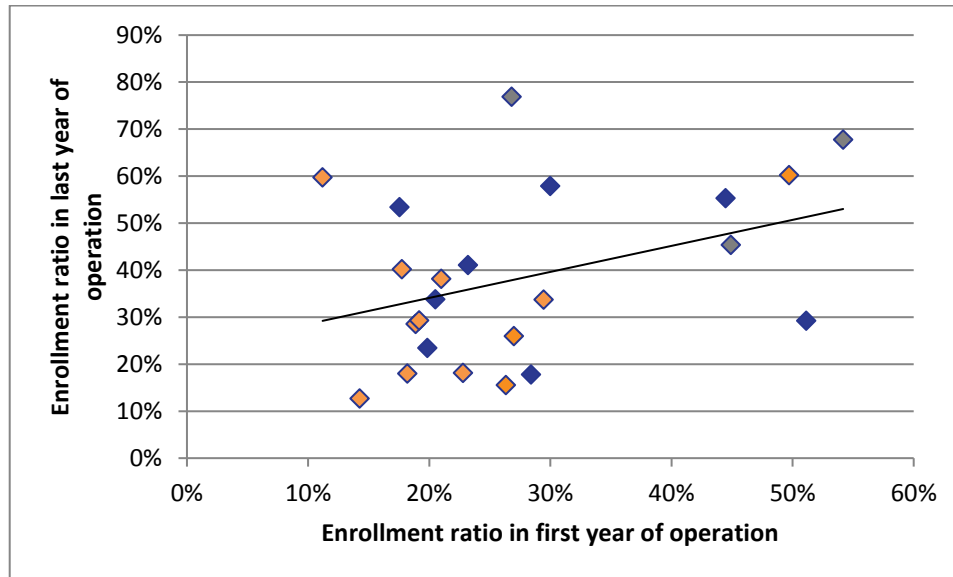
Blue dots represent schemes from Amhara, orange dots represent schemes from Oromia, red dots represent schemes from SNNP, and green dots represent schemes from Tigray.

3.2   Factors related to enrollment ratio

Highlights:

- Lack of basic services and low quality of care at health facilities was cited as a deterrent to enrolling in CBHI in all interviews conducted.

- The KIIs highlighted limited awareness among the community about how CBHI schemes operate and what their benefits were under the CBHI scheme.

- Among schemes with relatively lower enrollment ratios, respondents did not mention committees or groups playing a role in facilitating scheme operations, which contrasts with respondents from schemes with relatively higher enrollment ratios.

The KIIs aimed to discern factors positively and negatively affecting enrollment ratios and identified the following major themes associated with limited CBHI enrollment ratio:

Supply-side issues: All interviewees underscored the lack of basic services and low quality of care at health facilities as the main deterrent to enrolling in CBHI among communities where CBHI schemes are operational. Lack of drugs was particularly highlighted, as were other systems-level limitations that discourage enrollment including long travel time to health facilities, inadequate number of staff at health facilities, and long waiting times at health facilities. This perception of suboptimal care was reinforced by lack of respectful care at facilities. The perceived poor treatment of CBHI beneficiaries seems to stem from increased workload on providers from the increased demand and utilization of health facilities as a result of access to health insurance through CBHI schemes. At the same time, respondents expressed an impression of CBHI beneficiaries as "free loaders" by health care providers and a general preference for patients paying user fees at point of service, reflecting possible lack of understanding among providers on the concept of insurance. "…people get hopeless saying 'what can we get; we know if a health professional sees this [identification] ID card, they will refuse to serve us'…" [Amhara region KII;

CBHI scheme coordinator]. This could also point to a lack of targeted communication about CBHI schemes, tailored to both provides and beneficiaries, to increase knowledge of the scope and benefits of the schemes. This is further discussed below under Enabling Factors for Improved Enrolment.

In all four regions, there was a significant focus on community sensitization and demand generation to increase CBHI scheme enrollment and service utilization. However, respondents noted that health facilities on the supply side failed to meet the growing demand, which in turn lowered the motivation of community members to enroll, and reenroll, in the schemes. There did seem to be some improvements in facility-level service delivery in recent years due to increased revenue from CBHI and advocacy by key stakeholders, but supply-side limitations emerged as the factor threatening CBHI sustainability.

Inadequate benefit package information: The KIIs highlighted limited awareness among the community about services covered by the CBHI schemes, with established referral systems one factor contributing to low enrollment. Self-referrals were common across the four regions either because enrollees were not aware of referral procedures and many perceived care to be better at secondary or tertiary care levels. Some households have been disincentivized to renew their enrollment when they could not obtain covered services at higher-level public facilities due to lack of a required referral from health centers and/or if they self-referred to private providers. This lack of understanding and/or misunderstanding of how to access benefits across levels of care seemed to also be partly due to misinformation and miscommunication about the scope of CBHI benefits, particularly during the initial stages of community mobilization and scheme implementation.

Lack of effective scheme governance and operation structures: In schemes where enrollment remained low, respondents pointed to a lack of organized effort and structures to address grievances and manage complaints. When comparing responses from schemes where enrollment was high with those with lower enrollment ratios, respondents from schemes with above average enrollment ratios extensively discussed the role committees play in (i) dispute resolution, (ii) coordination with various stakeholders, and (iii) facilitation of effective scheme operation, such as assisting in timely issuance of CBHI ID cards. Respondents also reported that a lack of timely issuance of CBHI ID cards discourages eligible households from enrolling, because in some cases members/beneficiaries without an ID card were denied access to services even though they had paid their contribution. In schemes with below average enrollment ratios, there was no mention of such committees or groups playing a role in facilitating scheme operations.

3.3   Renewals

Highlights:

- After the second year of operations, enrollment from renewals stabilized across most schemes.

Overall, after the first year of operation, 78% of enrollment in CBHI schemes came from households that renewed their enrollment (Table 3). In the second year of operation, the proportion of renewing households as a proportion of all enrolled households in a CBHI scheme was 69%, ranging from 39% (Hidhebu Abote) to 96% (Kewot) across the schemes included in this study. In the latest year of operation, the proportion of renewing households as a proportion of all enrolled households in a CBHI scheme was 82%, ranging from 53% (Tahtay-Adiyabo) to 99% (Gimbichu) across the schemes included in this study. After the second year of operation, 75% to 86% of enrollment was from renewed households (except year seven).

Table 3: Percentage of enrolled households had renewed in sampled CBHI schemes in second and latest year of operation

| Region | Woreda[1] | Years of operation | Percentage of enrolled households from renewals[2] | | Percentage of enrolled households from renewals[3] | | | | | |
			2nd year of operation	Latest year of operation	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Overall Average
Amhara	Burie	4	70%	88%	77%	88%				79%
Amhara	Kewot	4	96%	95%	76%	95%				87%
Amhara	Woreta	4	84%	64%	74%	64%				74%
Amhara	Dangila	5	73%	74%	80%	78%	74%			76%
Amhara	Dewa Cheffa	5	39%	94%	79%	88%	94%			76%
Amhara	**Sekota Town Administration**	5	77%	90%	95%	88%	90%			87%
Amhara	Worebabo	5	93%	91%	80%	83%	91%			85%
Amhara	South Achefer	7	45%	90%	81%	86%	85%	87%	90%	80%
Oromia	Adea Berga	3	81%	95%	95%					87%
Oromia	Siraro	3	62%	66%	66%					64%
Oromia	**Boset**	3	68%	78%	78%					73%
Oromia	Digelu Tijo	3	95%	60%	60%					73%
Oromia	Adea	4	49%	88%	74%	88%				71%
Oromia	Hidhebu Abote	4	39%	79%	76%	79%				62%
Oromia	Aleltu	5	46%	90%	63%	81%	90%			71%
Oromia	Kuyu	6	71%	66%	89%	56%	76%	66%		69%
Oromia	**Gimbichu**	7	22%	99%	96%	100%	94%	87%	99%	84%
SNNP	Damboya	7	64%	89%	99%	97%	79%	87%	89%	86%
SNNP	**Damot Woyde**	7	91%	80%	90%	96%	90%	51%	80%	86%
SNNP	Yirgalem Town	7	83%	60%	85%	91%	85%	95%	60%	89%
Tigray	Ahferom	6	73%	59%	89%	94%	80%	59%		75%
Tigray	Kilte-Awlaelo	6	87%	94%	78%	84%	68%	94%		81%
Tigray	**Tahtay-Adiyabo**	6	58%	53%	81%	81%	69%	53%		64%
Weighted Average		4.6	69%	82%	80%	86%	84%	75%	84%	78%

[1] CBHI schemes ordered by region and length of operation at the time of data collection. Woredas in boldface indicate in-depth qualitative data were collected at that woreda.

[2] Shading indicates the CBHI scheme was below the average in the sample a particular year.

[3] Shaded areas in for years 3 through 7 denote a result below average for all years; Yr: Year.

3.4 Enabling environment factors for improved enrollment over time

Highlights:

- Respondents perceived active engagement of media and use of community leaders to be particularly effective means of enrolling new and re-enrolling previous households in CBI schemes.

- Political leadership and integration of CBHI into woreda health offices were also viewed positively affecting CBHI enrollment.

The qualitative analysis also looked at the historical change in enrollment ratio over the years of operation across the five schemes where KIIs were conducted to identify factors that enabled improvement over time. These themes were also compared between the overall highest performing and lowest performing schemes, and the identified enabling environment factors are discussed below:

Targeted sensitization activities: Community sensitization and mobilization is used as the primary tool to increase new and maintain existing CBHI enrollment. Respondents viewed this approach to be generally successful and effective. Active engagement of media and use of community leaders and current CBHI enrollees as spokespersons to share their testimonies (role-modeling techniques) were perceived to be particularly effective in high performing schemes. Sensitization activities that build on principles of solidarity, which seems to be highly regarded by the Ethiopian community, were also considered successful.

Engaged leadership and political will: In schemes with above average enrollment ratios, CBHI was described as part of the political agenda of local leadership**.** This was identified as a major factor for improved stakeholder engagement across the different levels of the health system (regional, zonal, woreda, and kebele) in improving sensitization activities, mobilizing funds, spearheading periodic evaluations, and liaising with health facilities to resolve service delivery and quality issues.

CBHI integration with woreda health offices: CBHI schemes used to be subsumed under the woreda administration office until the recent cross-regional move to relocate them under the woreda health office. Respondents generally viewed this change favorably because it helped CBHI schemes gain more visibility and integration within the health sector. Respondents underscored that this change allowed for better collaboration to solve problems and helped woreda health offices take more responsibility for CBHI due to the increased sense of ownership of, and accountability for, CBHI activities.

3.5 Length of time a CBHI scheme has been operational and utilization rates of enrolled households

3.5.1 Outpatient utilization

Highlights:

- Outpatient utilization of outpatient services increased after the first year of operation through the fifth year of operation, and increased at a faster rate than the increase in enrollment.

In the first year of operation, each enrolled household had, on average, 1.2 visits for outpatient care (Table 4). Outpatient visits per enrolled household was lowest, on average and for all but two individual CBHI schemes (Boset and Digelu Tijo), in the first year of operation. In the latest year of operation, each enrolled household made, on average, 3.5 visits for outpatient care.

As noted above, overall, there is an estimated average of 4.6 people per household. In operational years five through seven, schemes in operation had more than 4.6 visits per enrolled household, on average, and thus likely had more than one visit per beneficiary.

Table 4: Outpatient visits per enrolled household, by year

| Region | Woreda[1] | Years of operation | OP visits per enrolled household[2] | | OP visits per enrolled household[3] | | | | | | Overall Average |
			1st year of operation	Latest year of operation	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	
Amhara	Burie	4	N/A	4.8	2.8	2.9	4.8				3.5
Amhara	Kewot	4	0.3	2.1	3.4	1.4	2.1				1.8
Amhara	Woreta	4	2.8	3.5	4.2	4.8	3.5				3.8
Amhara	Dangila	5	N/A	6.5	2.9	7.1	5.0	6.5			5.4
Amhara	Dewa Cheffa	5	1.3	6.1	2.1	3.3	5.0	6.1			3.6
Amhara	**Sekota Town Administration**	5	1.4	5.3	3.9	5.7	4.4	5.3			4.2
Amhara	Worebabo	5	0.7	N/A	7.5	2.8	2.5	N/A			3.4
Amhara	South Achefer	7	N/A	5.8	1.7	4.5	6.3	6.6	7.0	5.8	5.3
Oromia	Adea Berga	3	0.7	N/A	0.8	N/A					0.8
Oromia	**Boset**	3	2.2	2.5	1.0	2.5					1.9
Oromia	Digelu Tijo	3	0.8	0.7	1.6	0.7					1.0
Oromia	Siraro	3	0.8	3.6	3.7	3.6					2.7
Oromia	Adea	4	N/A	1.4	0.2	1.4	1.4				1.0
Oromia	Hidhebu Abote	4	0.1	1.6	0.1	1.3	1.6				0.8
Oromia	Aleltu	5	N/A	0.9	0.5	2.2	1.4	0.9			1.3
Oromia	Kuyu	6	0.3	2.2	2.2	2.2	1.5	3.1	2.2		1.9
Oromia	**Gimbichu**	7	N/A	2.9	0.5	2.0	2.5	2.8	2.7	2.9	2.2
SNNP	Damboya	7	2.6	7.2	5.2	6.3	9.5	6.2	10.5	7.2	6.8
SNNP	**Damot Woyde**	7	1.7	2.9	2.9	3.0	3.2	5.0	4.8	2.9	3.4
SNNP	Yirgalem Town	7	3.1	5.8	7.7	6.7	6.3	5.7	11.0	5.8	6.6
Tigray	Ahferom	6	0.7	3.2	5.4	4.9	3.0	2.8	3.2		3.3
Tigray	Kilte-Awlaelo	6	1.6	2.8	2.8	2.8	3.0	3.2	2.8		2.7
Tigray	**Tahtay-Adiyabo**	6	4.5	6.1	6.4	9.0	8.5	8.3	6.1		7.1
Weighted Average		4.6	1.2	3.5	2.7	3.4	3.9	5.4	5.6	5.3	3.0

[1]CBHI schemes ordered by region and length of operation at the time of data collection. Woredas in boldface indicate in-depth qualitative data were collected at that woreda.

[2]Outpatient visits include outpatient visits made at all types of health facilities (health centers, hospitals, and other types of facilities). Shading indicates the CBHI scheme was above the overall average of 3.0.

[3]Shaded areas in for years 2 through 7 indicate visits per enrolled household above the overall average of 3.0; Yr: Year.

N/A: Data Not Available, OP: Outpatient.

Outpatient visits per enrolled household increased, on average, in operational years two through five (Table 5). Between operational years one and five, the increase in the number of outpatient visits per enrolled household averaged 1.07 visits per year. From years five through seven of operation, the number of visits per enrolled household was between 5.3 and 5.6. The number of visits per enrolled household was statistically significantly higher ($p<0.05$) in the fifth and sixth year of operation as compared to the second year of operation (when schemes were in operation for an entire year; some schemes operated for only a portion of the year in the first year of operation). Note that we are not able to compare the number of outpatient visits for renewed households and newly enrolled households separately or separately for households that had been enrolled for different numbers of consecutive years with the secondary data that were available for this study.

Table 5: Average number of outpatient visits per enrolled household, by year

Year of operation	Visits per enrolled household	p-value
1	1.2	0.08
2	2.7	Reference
3	3.4	0.46
4	3.9	0.27
5	5.4	0.02*
6	5.6	0.03*
7	5.3	0.13

P-value calculated controlling for CBHI-scheme specific fixed effects; *indicates a p-value of less than 0.05 when compared against reference.

The growth in the number of outpatient visits was greater than the growth in enrollment in the second through fifth year of operation, on average (Figure 2). This indicates an increasing number of outpatient visits per household enrolled through these years. The more rapid change in the number of outpatient visits per enrolled household than in the number of enrolled households is most marked in the second year of operation. This may reflect that in the first year of operation some schemes operated for only part of the year, some beneficiaries may have been learning how to use CBHI, there were delays in distribution in beneficiary ID cards, and schemes imposed a waiting time before beneficiaries could access health care services with CBHI scheme financial protection. The reason for the marked difference in growth between the two figures in the third year of operation is not known.

Figure 2: Change in enrollment compared to change in the number of visits for outpatient care

# of enrolled households as a ratio to the # of enrolled households in the previous year
Total # of outpatient visits as a ratio to the # of outpatient visits in the previous year
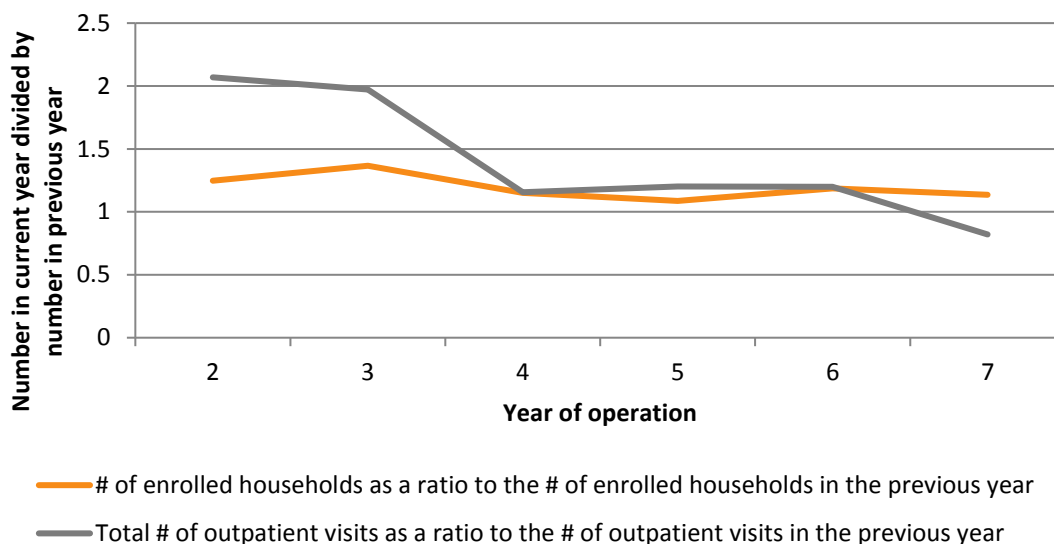
3.5.2 Associations with outpatient utilization trends

Highlights:

- Newly enrolled household *may* use outpatient services less than households that renewed their CBHI membership.

- A higher enrollment ratio is associated with a lower number of outpatient visits per enrolled household, although the association is not strong.

There are several potential reasons for the increase in outpatient visits per enrolled household over time, two of which are explored here. Households may selectively enroll in CBHI if they anticipate the need to use health services (e.g., if a member of the household has a chronic illness or predictable need for health services). If this is the case, then we would expect more outpatient visits per enrolled household from newly enrolled households compared to those for all enrolled households. On the other hand, if households more likely to use health services renew their enrollment in subsequent years, then we might observe an increase in the average number of visits per enrolled household over time. Other factors also may influence the number of outpatient visits over time, including demographic factors of the enrolled population such as age, illness outbreaks, and people learning to use and trust CBHI over time so that their health seeking behavior changes over time. Note again that exploration of these latter factors is not possible with the data collected for this study.

Based on local regression results comparing the proportion of newly enrolled households (i.e., households that had never before enrolled in the CBHI scheme) in a given year to number of outpatient visits per enrolled household when the proportion of enrollment from newly enrolled households is above about 20%, there is an increasingly lower number of outpatient visits per enrolled household (Figure 3). That is, if the proportion of newly enrolled households to total enrolled households is more than 20%, there may be a lower number of visits per enrolled household. However, if the proportion of newly enrolled households to total enrolled households is 20% or less (i.e., more than 80% of membership is from renewals), the proportion of newly enrolled households does not seem to influence the number of outpatient visits per enrolled household. In a regression controlling for CBHI and year-specific fixed effects, a greater proportion of newly enrolled households is associated with a lower

number of outpatient visits per enrolled household (beta coefficient: -6.5, p-value: 0.001; the beta coefficient suggests that a 10% increase in the proportion of newly enrolled households is associated with a 0.65 decrease in the number of visits per enrolled household). These finding suggest that households newly enrolling in CBHI are not using outpatient health services more than renewals. This supports the hypothesis that households more likely to use health services renew their enrollment in subsequent years, but it could also be that newly enrolled households are less likely to make claims due to delays in accessing CBHI services, less familiarity with CBHI mechanisms, and so forth.

Figure 3: Proportion of newly enrolled households compared to outpatient visits per enrolled household (excluding the first year of operation)
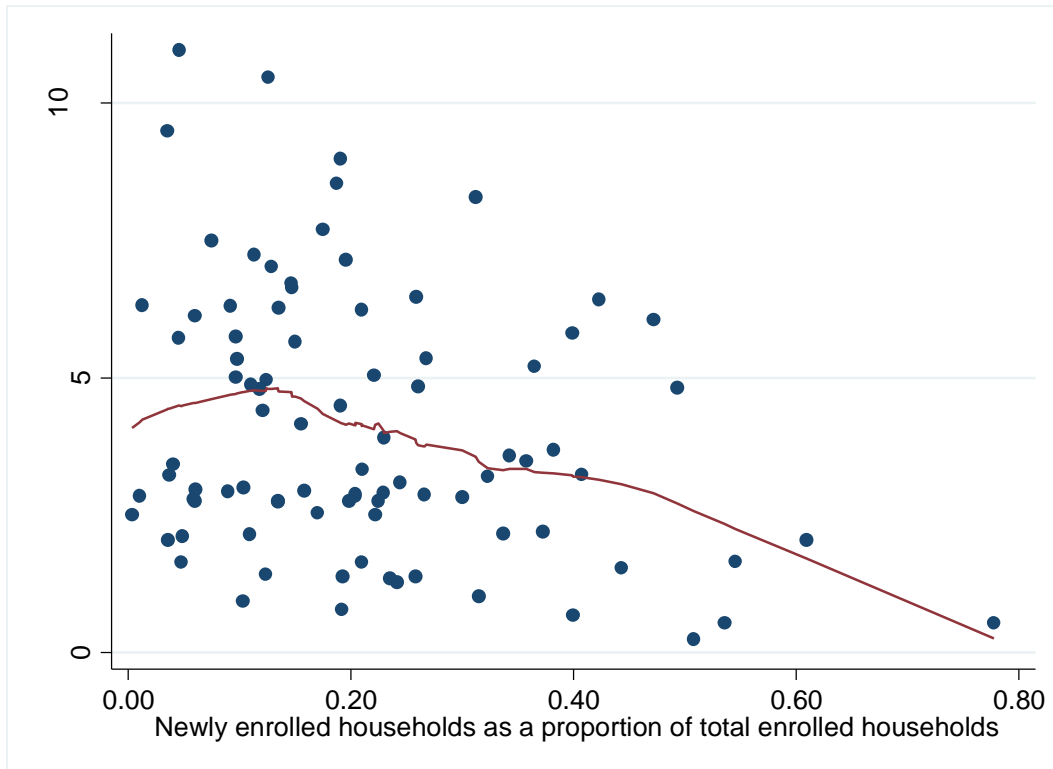
Red line indicates results of local regression with a bandwidth of 0.6. Each dot represents one scheme for one year.

The enrollment ratio may also influence the outpatient utilization. The results of the local regression show that, for enrollment ratios between 10% and 60%, an increase in the enrollment ratio is associated with a lower number of outpatient visits per household (Figure 4). In a regression controlling for CBHI and year-specific fixed effects, a higher enrollment ratio is associated with a lower number of outpatient visits per enrolled household (beta coefficient: -10.6, p-value: <0.001; the beta coefficient suggests that a 10% increase in the enrollment ratio is associated with 1.06 fewer visits per enrolled household). These results may occur if at low enrollment ratios, only households likely to use health services enroll, while at higher enrollment ratios more 'healthy' households (i.e., households less likely to use health services) enroll.

Figure 4: Enrollment ratio compared to outpatient visits per enrolled household (excluding the first year of operation)
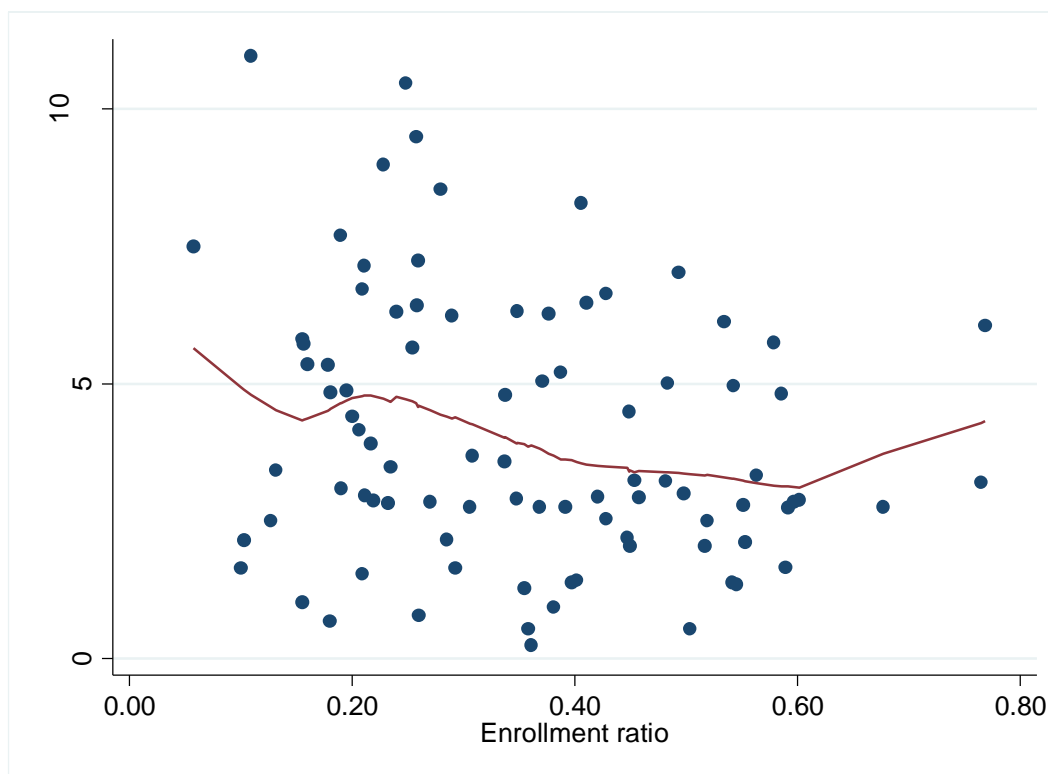
Red line indicates results of local regression with a bandwidth of 0.6. Each dot represents one scheme for one year.

3.5.3 Inpatient utilization

Highlights:

- There is not a clear trend between inpatient utilization and the length of time a CBHI scheme has been in operation.

- The two CBHI schemes located in towns had notably higher inpatient utilization compared with other schemes.

As with outpatient visits, inpatient visits per household were lowest, on average and for all but three individual CBHI schemes (Adea Berga, Woreta, and Yirgalem Town), in the first year of operation (Table 5). After the first year, there were over 20 inpatient visits per 1,000 enrolled households. Two schemes (Sekota Town Administration and Yirgalem Town) averaged over 100 inpatient visits per 1,000 enrolled households. These are the only two schemes included in this analysis that are located in towns. This suggests that as CBHI expands to more urban areas or areas with access to hospitals, inpatient utilization may be higher than has been observed in this study.

There is no clear trend across time in the number of inpatient visits per enrolled household (Table 6).

Table 5: Inpatient visits per enrolled household, by year

Region	Woreda[1]	Years of operation	IP Visits per 1,000 households[2]		IP Visits per 1,000 households[3]						Overall Average
			1st year of operation	Latest year of operation	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	
Amhara	Burie	4	N/A	28	15	60	28				17
Amhara	Kewot	4	1	12	15	5	12				5
Amhara	Woreta	4	19	10	22	21	10				9
Amhara	Dangila	5	N/A	25	9	14	19	25			11
Amhara	Dewa Cheffa	5	2	78	4	14	25	78			20
Amhara	**Sekota Town Administration**	5	49	419	339	877	473	419			351
Amhara	Worebabo	5	2	N/A	104	32	51	N/A			37
Amhara	South Achefer	7	N/A	26	5	11	24	28	31	26	21
Oromia	Adea Berga	3	2	N/A	1	N/A					0
Oromia	**Boset**	3	2	16	10	16					4
Oromia	Digelu Tijo	3	3	3	7	3					2
Oromia	Siraro	3	0	N/A	1	N/A					0
Oromia	Adea	4	N/A	5	1	4	5				2
Oromia	Hidhebu Abote	4	-	3	1	2	3				1
Oromia	Aleltu	5	N/A	N/A	N/A	N/A	1	N/A			0
Oromia	Kuyu	6	5	26	38	29	18	27	26		23
Oromia	**Gimbichu**	7	N/A	4	2	6	5	2	3	4	4
SNNP	Damboya	7	3	7	11	20	35	21	4	7	16
SNNP	**Damot Woyde**	7	9	12	22	14	21	22	17	12	18
SNNP	Yirgalem Town	7	62	56	211	324	87	86	75	56	140
Tigray	Ahferom	6	5	55	54	48	28	N/A	55		31
Tigray	Kilte-Awlaelo	6	21	43	48	40	44	42	43		36
Tigray	**Tahtay-Adiyabo**	6	-	13	-	29	36	30	13		18
Weighted Average		4.6	5	31	27	39	34	50	30	23	20

[1]CBHI schemes ordered by region and length of operation at the time of data collection. Woredas in boldface indicate in-depth qualitative data were collected at that woreda.
[2]Inpatient visits include inpatient visits made at all types of health facilities (health centers, hospitals, and other types of facilities). Shading indicates the CBHI scheme was above the overall average in the sample for a given year (20 inpatient visits per 1,000 enrolled households).
[3]Shading indicates the CBHI scheme was above the overall average in the sample for a given year (20 inpatient visits per 1,000 enrolled households).
Yr: Year, N/A: Data Not Available, IP: Inpatient.

Table 6: Average number of inpatient visits per enrolled household, by year

Year of operation	Inpatient visits per 1,000 enrolled households	p-value
1	5.3	0.054
2	26.9	Reference
3	39.4	0.39
4	34.1	0.63
5	50.4	0.30
6	29.7	0.74
7	23.1	0.85

P-value calculated controlling for CBHI-scheme specific fixed effects.

3.6 Financial inflows and outflows over time

Highlights:

- All schemes had at least one year with a negative balance except for 1 scheme in Amhara and all but one scheme in Oromia.

- Cumulatively, the Amhara and Oromia regions showed a net positive balance, while the SNNP and Tigray regions showed a net negative balance across the years of operation.

- Average revenue per enrolled household (excluding the first year) was higher in Amhara and Oromia than in SNNP and Tigray.

- Average reimbursements per enrolled household (excluding the first year of operation) were similar, on average, in Amhara, SNNP, and Tigray, with Oromia having lower reimbursements per enrolled household than the other regions.

Table 7 lists the amount of revenue (inclusive of contributions collected from the paying members , targeted subsidies from the woreda/regional government, and general subsides from the federal government) per household enrolled in the scheme, the payments for user fees made to health facilities, and the difference between the two ('balance') for each scheme for each year of operation. Annexes D and E present similar data as listed in Table 7, but include revenue only from contributions collected from households (Annex D) and only from contributions collected from households plus targeted subsidies from the woreda/regional government (Annex E). While year-specific results change depending upon which sources of revenue are considered, overall trends and conclusions do not, as compared to the results presented in Table 7.

Every scheme in Oromia recorded a positive balance in all years of operation except for Kuyu, which had a negative balance in its fifth year of operation. Conversely, every scheme outside of Oromia had a negative balance in at least on year of operation except for Kewot (in Amhara). Average revenue per enrolled household (excluding the first year of operation) was about the same in Amhara (ETB 212) and Oromia (ETB 213), but substantially lower in SNNP (ETB 172) and Tigray (ETB 189). Oromia had the

lowest average reimbursements per enrolled household (excluding the first year of operation) at ETB 112, compared with ETB 228 in Amhara, ETB 226 in SNNP, and ETB 215 in Tigray.

Overall, on average, there was a net positive balance for all years of operation excepting the fifth and sixth years of operation. However, the overall positive balance is largely the result of positive balances in Oromia. Amhara had, on average across schemes, a net positive balance in the first four operation years, Tigray in the first two operational years, and SNNP in the first and seventh years of operation.

Table 7: Total revenue and total payments to health facilities and for beneficiary out-of-pocket payments, by scheme and year

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
Amhara	**Burie**	Revenue per enrolled household	156	208	190	195			
		Payments per enrolled household	N/A	105	130	202			
		Balance	N/A	103	61	-8			
Amhara	**Dangila**	Revenue per enrolled household	92	191	193	168	186		
		Payments per enrolled household	N/A	98	277	217	282		
		Balance	N/A	93	-84	-49	-95		
Amhara	**Dewa Cheffa**	Revenue per enrolled household	295	167	161	249	248		
		Payments per enrolled household	43	82	130	223	269		
		Balance	252	85	31	27	-21		
Amhara	**Kewot**	Revenue per enrolled household	106	214	170	172			
		Payments per enrolled household	14	132	67	98			
		Balance	93	82	103	74			
Amhara	**Sekota Town Administration**	Revenue per enrolled household	215	236	142	406	387		
		Payments per enrolled household	57	225	439	299	415		
		Balance	158	11	-297	108	-28		
Amhara	**South Achefer**	Revenue per enrolled household	102	117	96	251	178	218	258
		Payments per enrolled household	N/A	45	136	224	271	296	275
		Balance	N/A	72	-40	27	-94	-77	-17
Amhara	**Worebabo**	Revenue per enrolled household	158	324	164	200	104		
		Payments per enrolled household	34	437	148	151	N/A		
		Balance	124	-113	16	49	N/A		

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
Amhara	**Woreta**	Revenue per enrolled household	140	221	184	169			
		Payments per enrolled household	125	210	281	199			
		Balance	14	10	-97	-30			
	Amhara Average (weighted)	Revenue per enrolled household	184	207	164	210	215	218	258
		Payments per enrolled household	38	158	164	190	283	296	275
		Balance	147	49	0	20	-68	-77	-17
Oromia	**Adea**	Revenue per enrolled household	189	138	211	252			
		Payments per enrolled household	N/A	32	78	95			
		Balance	N/A	107	133	157			
Oromia	**Adea Berga**	Revenue per enrolled household	184	97	157				
		Payments per enrolled household	39	52	N/A				
		Balance	145	46	N/A				
Oromia	**Aleltu**	Revenue per enrolled household	146	165	193	255	188		
		Payments per enrolled household	N/A	35	48	72	77		
		Balance	N/A	130	145	182	111		
Oromia	**Boset**	Revenue per enrolled household	198	208	214	0			
		Payments per enrolled household	39	103	128				
		Balance	159	106	87				
Oromia	**Digelu Tijo**	Revenue per enrolled household	211	152	215				
		Payments per enrolled household	16	98	50				
		Balance	195	54	165				
Oromia	**Gimbichu**	Revenue per enrolled household	182	175	221	235	176	186	267
		Payments per enrolled household	N/A	15	66	99	100	107	130

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
		Balance	N/A	160	155	136	76	80	137
Oromia	**Hidhebu Abote**	Revenue per enrolled household	173	161	204	256			
		Payments per enrolled household	N/A	38	87	85			
		Balance	N/A	122	117	171			
Oromia	**Kuyu**	Revenue per enrolled household	128	202	292	144	202	233	
		Payments per enrolled household	N/A	N/A	89	101	206	156	
		Balance	N/A	N/A	203	43	-4	77	
Oromia	**Siraro**	Revenue per enrolled household	206	190	188				
		Payments per enrolled household	24	75	92				
		Balance	182	116	95				
	Oromia Average (weighted)	Revenue per enrolled household	197	158	218	223	193	220	267
		Payments per enrolled household	33	65	91	92	153	142	130
		Balance	163	92	128	132	40	78	137
SNNP	**Damboya**	Revenue per enrolled household	151	120	135	132	205	288	209
		Payments per enrolled household	77	148	181	293	203	402	130
		Balance	73	-28	-46	-162	2	-114	79
SNNP	**Damot Woyde**	Revenue per enrolled household	115	105	86	81	71	130	162
		Payments per enrolled household	56	94	109	137	194	186	96
		Balance	59	10	-22	-56	-123	-56	66
SNNP	**Yirgalem Town**	Revenue per enrolled household	148	219	200	130	218	369	230
		Payments per enrolled household	127	331	307	304	295	554	99
		Balance	21	-112	-107	-174	-77	-186	131

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
	SNNP Average (weighted)	Revenue per enrolled household	138	148	140	114	165	262	200
		Payments per enrolled household	87	191	199	245	231	381	108
		Balance	51	-43	-58	-131	-66	-118	92
Tigray	Ahferom	Revenue per enrolled household	171	266	219	151	146	226	
		Payments per enrolled household	27	235	261	175	175	193	
		Balance	144	31	-42	-24	-30	33	
Tigray	Kilte-Awlaelo	Revenue per enrolled household	155	214	192	131	162	275	
		Payments per enrolled household	79	156	149	190	203	196	
		Balance	76	58	43	-58	-41	79	
Tigray	Tahtay-Adiyabo	Revenue per enrolled household	161	172	231	148	158	147	
		Payments per enrolled household	115	196	340	258	223	281	
		Balance	46	-24	-109	-110	-66	-134	
	Tigray Average (weighted)	Revenue per enrolled household	162	218	214	143	155	216	
		Payments per enrolled household	74	196	250	208	201	223	
		Balance	89	22	-36	-64	-46	-7	
	Overall Average (weighted)	Revenue per enrolled household	184	195	184	202	199	228	239
		Payments per enrolled household	43	135	145	175	246	261	200
		Balance	141	61	38	27	-47	-34	38

N/A: Data not available

Revenue includes contributions from households, woreda/regional government targeted subsidies, and federal government general subsidies.

Using the data presented in Table 7, the first and fifth operational year had statistically significant differences in the balance compared to the second year of operation, with the first year having a higher net positive balance and the fifth year having a net negative balance (Table 8). More than half of schemes have a positive balance through the first four years of operation, while fewer than 20% of schemes had a positive balance in the fifth year of operation.

Table 8: Average net balance, by year of operation

Year of operation	Balance per enrolled household (ETB, weighted)	p-value	Percentage of schemes with a positive balance (weighted)
1	141	<0.001***	100%
2	61	Reference	86%
3	38	0.06	69%
4	27	0.17	63%
5	-47	0.02*	15%
6	-34	0.08	38%
7	38	0.29	39%

P-value calculated controlling for CBHI-scheme specific fixed effects; * indicates a p-value of less than 0.05 when compared against reference; *** indicates a p-value of less than 0.001 when compared against reference.

Overall, more years had a surplus balance than had a deficit balance (Figure 5). However, the average scheme accrued a net surplus of 1.5 million ETB, while schemes that have been in operation for six or seven years on average had a net surplus of 697,000 ETB over the years of operation. The average accrued balances per scheme by region were:

- Amhara: 618,091 ETB

- Oromia: 3,116,809 ETB

- SNNP: -1,070,711 ETB

- Tigray: -40,618 ETB

Using regional averages, the Tigray and SNNP regions had a net deficit starting in the second and third years of operation, respectively, while Amhara had a net deficit starting in the fifth year of operation (Table 9). These findings again suggest that, for most of the regions, revenue was not adequate to account for payments to facilities when outpatient utilization was more than four outpatient visits per enrolled household per year, although there are some exceptions.

Figure 5: Average total revenue per enrolled household and total costs per enrolled household across operational years

Table 9: Utilization, total revenue and total payments to health facilities and for beneficiary out-of-pocket payments, average by region and year

Region	Indicator	Year of operation						
		1	2	3	4	5	6	7
Amhara	OP visits per enrolled household per year	0.9	3.5	3.8	4.3	6.3	7.0	5.8
	IP visits per 1,000 enrolled households	5.4	36.4	50.0	40.3	66.7	31.3	26.1
	Total payments per enrolled household	38	158	164	190	283	296	275
	Revenue per enrolled household	184	207	164	210	215	218	258
	Balance per enrolled household	147	49	0	20	-68	-77	-17
Oromia	OP visits per enrolled household per year	1.3	1.2	2.0	1.6	2.5	2.3	2.9
	IP visits per 1,000 enrolled households	1.8	4.0	9.6	7.7	15.4	19.5	3.8
	Total payments per enrolled household	33	65	91	92	153	142	130
	Premiums collected per enrolled household	197	158	218	223	193	220	267
	Balance per enrolled household	163	92	128	132	40	78	137
SNNPR	OP visits per enrolled household per year	2.5	5.3	5.3	6.3	5.6	8.8	5.3
	IP visits per 1,000 enrolled households	24.4	81.4	119.5	47.6	43.1	31.8	24.9

Region	Indicator	Year of operation						
		1	2	3	4	5	6	7
	Total payments per enrolled household	87	191	199	245	231	381	108
	Premiums collected per enrolled household	138	148	140	114	165	262	200
	Balance per enrolled household	51	-43	-58	-131	-66	-118	92
Tigray	OP visits per enrolled household per year	2.3	4.8	5.5	4.8	4.8	4.0	N/A
	IP visits per 1,000 enrolled households	8.5	34.0	39.1	36.0	23.9	36.9	N/A
	Total payments per enrolled household	74	196	250	208	201	223	N/A
	Premiums collected per enrolled household	162	218	214	143	155	216	N/A
	Balance per enrolled household	89	22	-36	-64	-46	-7	N/A
Overall	OP visits per enrolled household per year	1.3	2.9	3.4	3.9	5.4	5.6	5.3
	IP visits per 1,000 enrolled households	5.7	26.4	39.4	34.1	50.4	29.7	23.1
	Total payments per enrolled household	43	135	145	175	246	261	200
	Premiums collected per enrolled household	184	195	184	202	199	228	239
	Balance per enrolled household	141	61	38	27	-47	-34	38

IP: Inpatient; N/A: Data not available; OP: Outpatient
Revenue includes contributions from households, woreda/regional government targeted subsidies, and federal government general subsidies.

On a cumulative basis, revenue per enrolled household remained relatively stable in Amhara, SNNP, and Tigray, while in Oromia, cumulative revenue per household increased over time (Table 10). However, the cumulative payments per enrolled household increased every year in every region where data are available, with the exception of the seventh year of operation in SNNP. Increases in cumulative payments per enrolled household are largely driven by a greater number of outpatient visits per enrolled household. The amount of payment for an outpatient visit generally showed no trends over time (data not shown). One exception is in the seventh year of operation, when the amount paid per outpatient visit was 21 ETB (compared to an average of 36 ETB in previous years in SNNP). Overall and in Amhara and Tigray, cumulative payments exceeded cumulative revenue in the fifth year of operation on average. In SNNP, schemes had a cumulative deficit for all years after the first year of operation, on average.
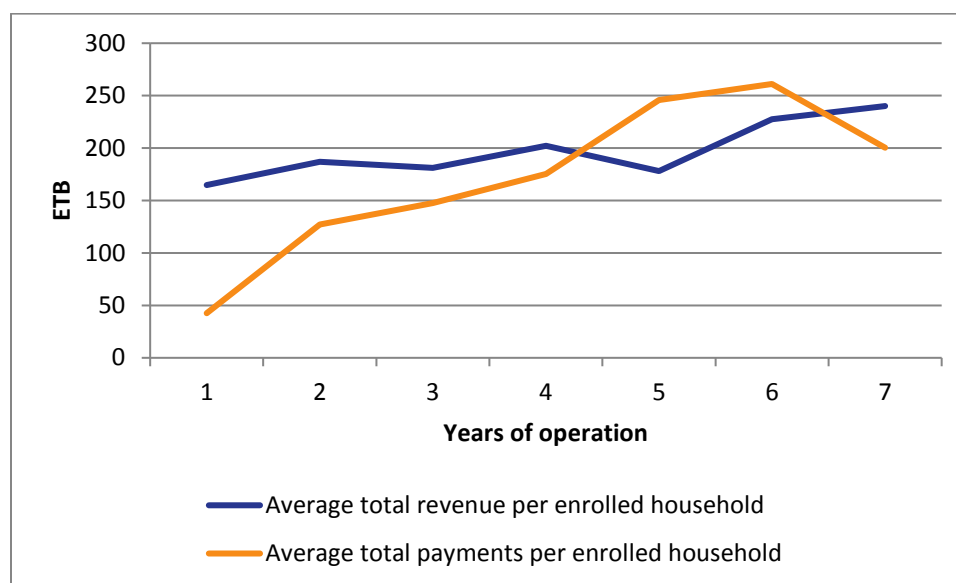
Table 10: Cumulative total revenue and total payments to health facilities and for beneficiary out-of-pocket payments, by regional average and year

Region	Parameter	Operational Year					
		2	3	4	5	6	7
Amhara	Cumulative revenue per enrolled household	161	162	175	158	160	177
	Cumulative payments per enrolled household	73	99	121	185	N/A	N/A
	Cumulative balance	88	63	54	-27	N/A	N/A
Oromia	Cumulative revenue per enrolled household	171	182	194	189	196	210
	Cumulative payments per enrolled household	56	74	N/A	N/A	N/A	N/A
	Cumulative balance	116	109	N/A	N/A	N/A	N/A
SNNP	Cumulative revenue per enrolled household	140	140	133	140	154	141
	Cumulative payments per enrolled household	135	156	176	187	210	198
	Cumulative balance	5	-16	-43	-48	-56	-57
Tigray	Cumulative revenue per enrolled household	181	190	179	173	182	N/A
	Cumulative payments per enrolled household	116	153	166	175	189	N/A
	Cumulative balance	65	38	13	-2	-7	N/A
Overall	Cumulative revenue per enrolled household	165	170	176	164	172	172
	Cumulative payments per enrolled household	74	101	134	183	200	198
	Cumulative balance	91	69	42	-19	-28	-26

Cumulative data is only calculated for schemes that do not have missing data in any previous year. For example, if a scheme is missing data for year 2, cumulative numbers are not calculated for year 3, even when data are available.

3.7 Factors related to financial sustainability

Highlights:

- Most of the respondents perceived the subsidy from regional and federal government to be insufficient.

Health financing factors related to scheme enrollment and operation also emerged from the KIIs as sustainability considerations. These are:

Lack of stand-alone CBHI expenditure code: With the exception of Amhara region, CBHI is not included as a line item in the list of expenditure codes for budget allocation by the government treasury. As a result, in the other regions, CBHI schemes do not have dedicated operational and targeted subsidy budget, and have to pursue ad hoc funding through discussions and negotiations. While such expenditures are documented and tracked, it leaves the schemes with no guaranteed funds to plan around, limiting the responsiveness and sustainability their effectiveness.

Insufficient subsidy from regional and federal government: In addition to household contributions, CBHI schemes are funded through a regional and woreda subsidy for indigent members of the community and a general subsidy from the federal government. Most of the respondents perceived these subsidies to be insufficient. One reason for this is the limited government fiscal space to increase CBHI subsidies.

3.8 Enrollment ratio and financial balance

Highlights:

- There does not appear to be a direct association between the enrollment ratio and the net balance of a CBHI scheme. There may be an indirect association.

Previously presented results suggest a possible association between higher enrollment ratios and a lower number of outpatient visits per enrolled household. This suggests that a higher enrollment ratio may contribute to better financial performance of CBHI schemes.

However, there is no apparent relationship between enrollment ratio and whether a scheme is in surplus or deficit (Figure 6). From an enrollment ratio of less than 20% of eligible households to about 60% of eligible households, the local regression results show (generally) that on average there would be a small net surplus. However, there are a high proportion of scheme-years that are in deficit across that enrollment ratio range. Results at very high and very low enrollment ratios are difficult to interpret due to the small number of observations at these enrollment ratio levels.

In a regression with fixed effect for year and scheme, the association between enrollment ratio and net balance is not statistically significant (beta coefficient: 52.9, p-value: 0.48). This does not mean that there is no relationship between the enrollment ratio and net balance, because the relationship between these two variables may be affected by intermediary factors not captured (i.e., Figure 6 may be confounded).

Figure 6: Balance per enrolled household compared to enrollment ratio
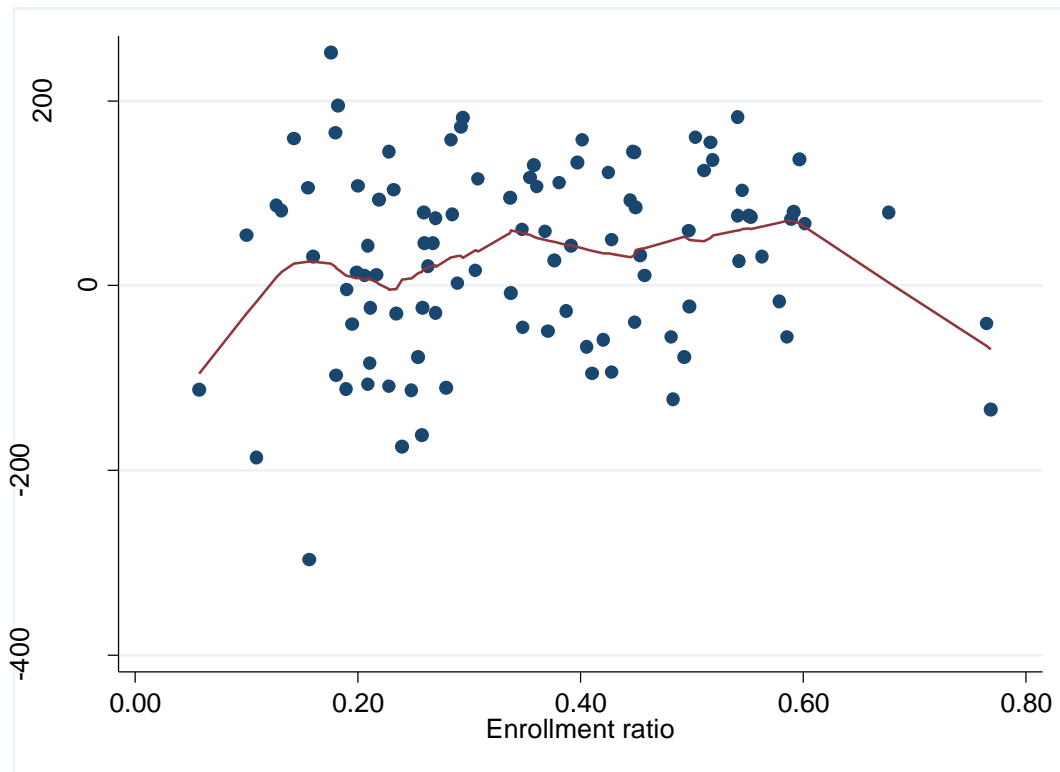
Red line indicates results of local regression with a bandwidth of 0.4. Each dot represents one scheme for one year.

3.9 Financial outflows, revenue, and financial balance

Highlights:

- As expected, there is an association between more outpatient visits per enrolled household and a lower net financial balance.

- However, outpatient utilization tended to be less than one visit per estimated person enrolled in the CBHI scheme (for over 75% of the schemes/years observed); outpatient utilization is low among CBHI enrolled households compared with international standards.

- To the extent that increasing the enrollment ratio may help to limit outpatient utilization on average by enrolling 'healthier' households in CBHI, the data suggest that increasing the enrollment ratio by 12% to 15%, on average, would help maintain a net positive balance. This finding needs further confirmation.

- The association between revenue per enrolled household and net financial balance is not as strong as for the association between outpatient visits per enrolled households and financial balance, but no scheme with a cumulative revenue of more than 200 ETB per enrolled household incurred a deficit (although some incurred a deficit in individual years with revenue of more than 200 ETB per enrolled household).

The amount of payments to health facilities and the amount of revenue have a direct relationship with the financial balance of a scheme. The number of outpatient visits per enrolled household has a high correlation with the overall balance of CBHI schemes, with more visits per enrolled household associated with lower net financial balance (Figure 7).

The results show that below about three outpatient visits per enrolled household, all schemes had a positive balance, while on average the local regression suggests that schemes will have a positive balance on average if there are about four or fewer outpatient visits per enrolled household. However, four outpatient visits per enrolled household is still less than one outpatient visit per enrolled person (estimated) on average. This suggests that outpatient utilization is still low among enrolled households compared to international standards, and that, therefore, schemes are not generating sufficient revenue to account for the amount of utilization.

In regression with fixed effect for year and scheme *and* controlling for enrollment ratio and revenue per enrolled household, the association between number of outpatient visits per enrolled household and net balance is statistically significant (beta coefficient: -39.2 [an increase in the number of outpatient visits per enrolled household by 1 is associated with a decrease in the balance per household of 39 ETB], p-value: <0.001).

Figure 7: Balance per enrolled household compared to number of outpatient visits per enrolled household
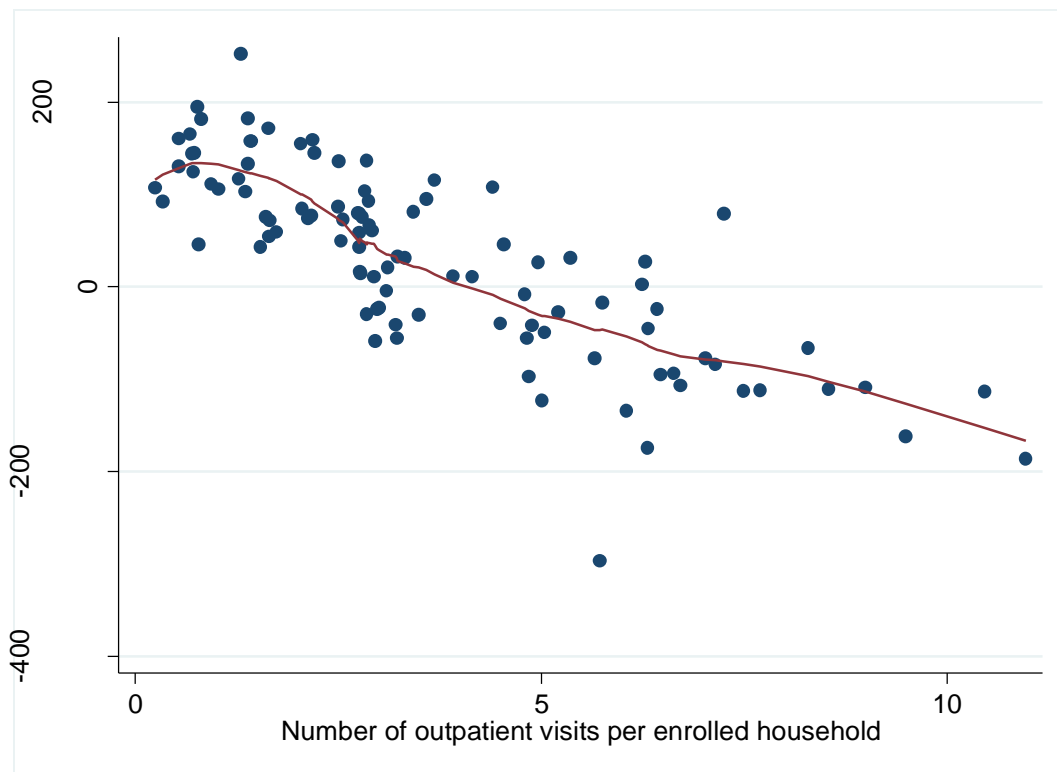
Red line indicates results of local regression with a bandwidth of 0.4. Each dot represents one scheme for one year.

The relationship between revenue and scheme balance is less clear than for outpatient visits per enrolled household: there are schemes with deficits (and surpluses) across almost the entire range of observed revenue per enrolled household (Figure 8). However, except for very high levels of revenue per enrolled household, there is (as logic would dictate) generally a positive relationship between revenue per enrolled household and balance, with the local regression suggesting that revenue above about 170 ETB per enrolled household will result, on average, in a positive net balance, although still a fairly large proportion of schemes would have a negative balance.

In regression with fixed effect for year and scheme and controlling for enrollment ratio and outpatient visits per enrolled household, the association between revenue per enrolled household and net balance is statistically significant (beta coefficient: 0.90 [an increase in the revenue per enrolled household of 100 ETB is associated with an increase in the balance per enrolled household of 90 ETB], p-value: <0.001).

Figure 8: Balance per enrolled household compared to total (all sources excluding deficit financing) revenue per enrolled household
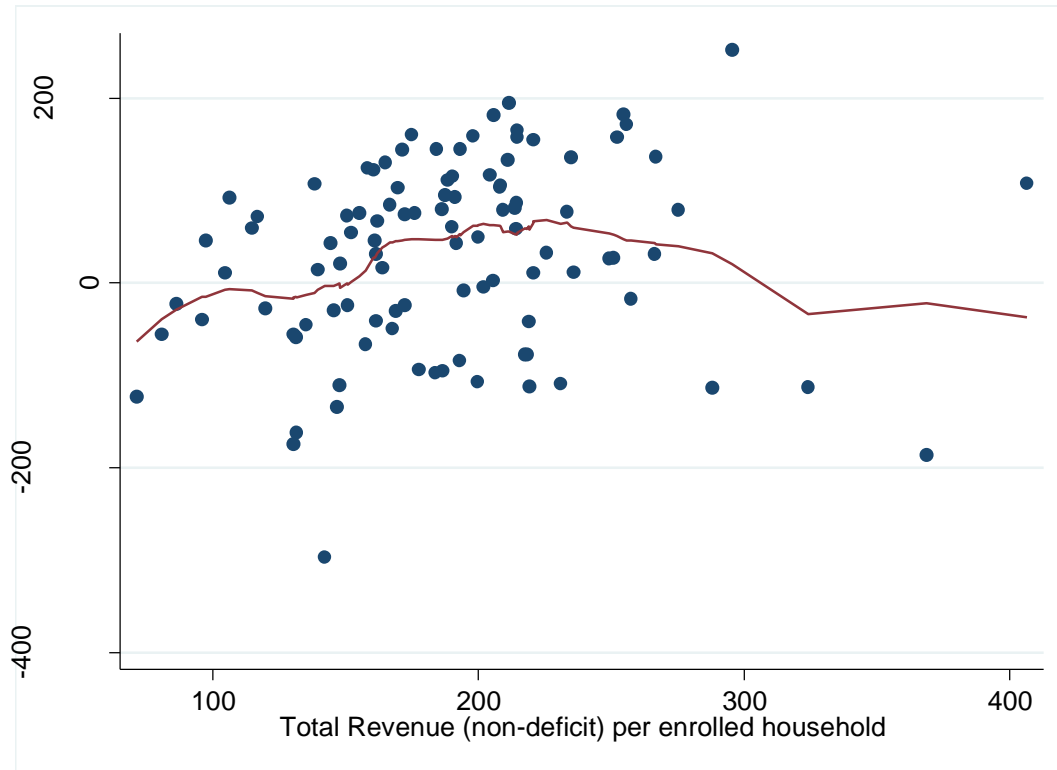
Red line indicates results of local regression with a bandwidth of 0.4. Each dot represents one scheme for one year.

Using cumulative revenue per enrolled households (where revenue is summed across the years of operation and the number of enrolled households is summed across the years of operation) and cumulative balance of a scheme, no schemes had a cumulative net negative balance if revenue per household was above 200 ETB (Figure 9).

Figure 9: Cumulative (lifetime of CBHI scheme) balance per enrolled household compared to cumulative (all sources excluding deficit financing over the lifetime of the CBHI scheme) revenue per enrolled household
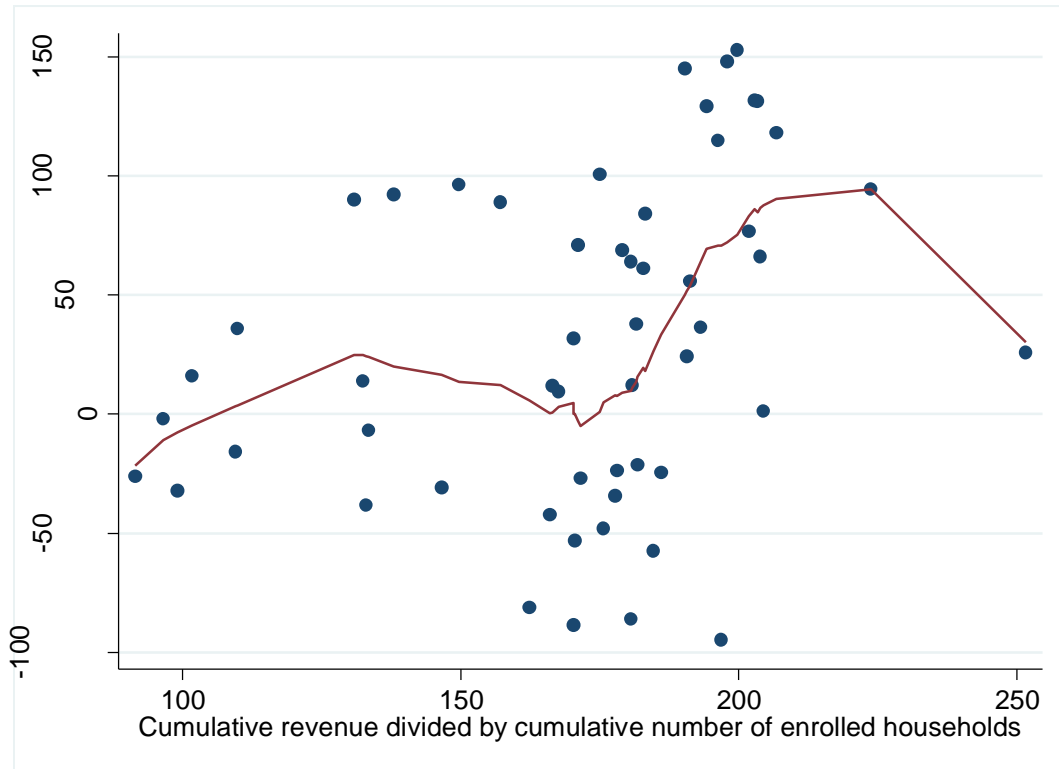
Red line indicates results of local regression with a bandwidth of 0.4. Each dot represents one scheme for one year.

While Figure 6 suggested no direct association between the enrollment ratio and financial balance, Figure 3 suggested that, at least for enrollment ratios above about 20%, increasing the enrollment ratio results in fewer outpatient visits per enrolled household. Thus, higher enrollment ratios may indirectly be a mechanism to help maintain financial sustainability, although outpatient visit frequency and cost are also affected by other factors (including how long a scheme has been in operation). Speculatively, using the regression results listed above (p. 15), average enrollment, and average number of outpatient visits, we constructed a model to assess what level of increase in the enrollment ratio in operational years 5 through 7 (when outpatient visits per enrolled household was above four, on average) would be associated with reducing the number of visits per enrolled household to less than four (Table 11).

Table 11: Estimated enrollment ratio needed to result in outpatient visits of 4 per enrolled household per year or less

	Operational year		
	5	6	7
Outpatient visits per enrolled household	5.4	5.6	5.3
Average enrollment ratio	39%	46%	50%
Average enrollment needed to lower outpatient visits per enrolled household to 4 or less	53%	61%	62%
Increase in enrollment ratio	14%	15%	12%

The results of the model suggest that an enrollment ratio of over 50% would help maintain outpatient visits per enrolled household below four, and thus to increase the likelihood of financial sustainability under present revenue streams. There were 20 observed scheme-years with the enrollment ratio above 50%; 16 of those years (80%) showed a net surplus. In contrast 39% (49 out of 126) of scheme-years had a net positive balance when the enrollment ratio was below 50%. However, because these analyses contain a limited number of observations where the enrollment ratio was above 50%, further work is needed to assess the relationship between the enrollment ratio, visits per enrolled household, and financial sustainability.

3.10 Assessment of a hypothetical regional pooling scheme

Highlights:

- A financial model assessing regional pooling highlights results shown above. Because the more (and larger) schemes outside of Oromia had a net deficit after the third year of operation, a regional pool for Amhara, SNNP, and Tigray would also have net deficits starting in the third year and cumulative after seven years of operation. In Oromia, a regional pool would have a net surplus through seven years of operation.

- This finding does not suggest that regional pooling would not be of benefit to individual schemes, but that more revenue is needed (outside of Oromia) to ensure financial sustainability.

A financial model was constructed to conduct these analyses. To construct the model, we started with the estimated number of enrolled households for a region in the first year of operation. Although, in reality, many schemes start operation in different calendar years, this simplifying assumption was made to assess likely regional financial solvency in a scenario where multiple schemes had been in operation for a mid to long range (e.g., a five to seven-year) time period. From the total enrollment in the first year, estimates of future enrollment were made based on regional average growth rates in enrollment, while financial outflows and revenue were based on regional averages for each year of operation. In this way, we estimate overall regional enrollment (for existing schemes – assuming *either* no further expansion of the number of CBHI schemes in a region *or* that if there is expansion, the new schemes would not be substantively different from the schemes included in the sample for this study) and subsequent financial solvency at a *regional* level. That is, we provide estimates of the financial solvency of a regionally pooled scheme (if the pooling of schemes does not substantively affect CBHI operations).

Based on this model, we then estimate how much more money would be needed for each region to "break even" for each year of operation. This is then converted into a percentage increase in revenue from household contributions *and* woreda/regional government targeted subsidies needed to maintain a

net surplus for each region. This is done for each year of operation for each region and for each year of operation overall for the four regions. This assumes that any increase in household contributions would have *no* effect on the demand for enrolling in CBHI schemes, and thus the results are illustrative only.

Table 12: Amount of subsidy needed to maintain financial solvency, average per region by year (ETB)

Region	Variable	Year					
		2	3	4	5	6	7
Amhara	Federal government general subsidy per enrolled household	59	15	26	11	21	26
	General subsidy per enrolled household needed to achieve zero deficit, on average	9	15	6	79	98	43
	Increase in the general subsidy per enrolled household	0	0	0	68	77	17
Oromia	Federal government general subsidy per enrolled household	17	32	24	19	15	24
	General subsidy per enrolled household needed to achieve zero deficit, on average	0	0	0	0	0	0
	Increase in the general subsidy per enrolled household	0	0	0	0	0	0
SNNP	Federal government general subsidy per enrolled household	53	56	24	54	32	5
	General subsidy per enrolled household needed to achieve zero deficit, on average	96	114	154	120	150	0
	Increase in the general subsidy per enrolled household	43	58	131	66	118	0
Tigray	Federal government general subsidy per enrolled household	73	61	16	14	20	N/A
	General subsidy per enrolled household needed to achieve zero deficit, on average	51	97	80	59	28	N/A
	Increase in the general subsidy per enrolled household	0	36	64	46	7	N/A
Overall	Federal government general subsidy per enrolled household	47	25	25	17	22	18
	General subsidy per enrolled household needed to achieve zero deficit, on average	0	0	0	65	55	0
	Increase in the general subsidy per enrolled household	0	0	0	47	34	0

As seen previously, Oromia had a net surplus in all years of operation on average across schemes, and this model shows that there would be no need for an increase in the general subsidy in Oromia to have a net positive balance (Table 12). On average across the second to seventh year of operation, SNNP needed general subsidies of about 106 ETB per enrolled household, compared to an average of 37 per enrolled household observed. This implies that an increase in the general subsidy of about 69 ETB per household would be needed to maintain financial solvency. Amhara would not need an increase in general subsidies to maintain a positive balance in the first four years of operation, but it would need 68 or more ETB per enrolled household to maintain a positive balance in the fifth and sixth year of operation. This implies an increase in the general subsidy of about 27 ETB per enrolled household would be needed to maintain financial solvency. Tigray would similarly need about 31 ETB per enrolled household to maintain financial solvency, on average. (Note that schemes receive a general subsidy proportional to the resource they mobilized, and variations in the amounts received from year-to-year are likely due to variations in the enrollment ratio of the CBHI schemes and change in the percentage of subsidy allocation based on Federal Ministry of Health policy decision.)

The results of the financial model for regional pooling reinforce these findings (Table 13; detailed results of the financial model are available in Annex F). In these models, Oromia retains a positive balance if revenue and payments were pooled regionally, while SNNP would have a deficit starting in the second year of operation, and Tigray and Amhara would have a net deficit starting in the third year of operation. Cumulatively, SNNP, Amhara, and Tigray regional pools would all have net deficits after seven years of operation.

Table 13: Summary results from financial model, by region and year (ETB thousands)

Region	Parameter	Operational year							Total
		1	2	3	4	5	6	7	
Amhara	Total revenue	36,588	61,218	103,390	156,387	141,866	180,839	250,507	930,795
	Total payments	10,428	42,921	118,913	156,931	223,764	244,811	267,298	1,065,066
	Regional net balance	26,160	18,297	(15,523)	(544)	(81,898)	(63,972)	(16,791)	(134,271)
Oromia	Total revenue	27,056	31,389	39,584	58,046	40,682	66,687	80,585	344,029
	Total payments	5,997	15,216	20,665	24,192	32,300	40,143	38,798	177,311
	Regional net balance	21,059	16,173	18,919	33,854	8,382	26,544	41,787	166,718
SNNP	Total revenue	2,130	2,443	2,418	2,536	2,751	3,501	3,115	18,894
	Total payments	1,328	3,000	3,512	4,124	3,905	5,238	1,978	23,084
	Regional net balance	802	(557)	(1,094)	(1,588)	(1,154)	(1,737)	1,137	(4,190)
Tigray	Total revenue	5,406	4,814	4,997	3,743	6,273	12,363		37,596
	Total payments	2,747	4,647	6,193	6,287	9,477	11,431		40,783
	Regional net balance	2,659	167	(1,196)	(2,544)	(3,204)	932		(3,187)

Based on the results of the model presented in Table 13, overall, an increase in the premium of 16% in Amhara would lead to a surplus across seven years of operation, whereas the premium increase would need to be 10% in Tigray, and 29% in SNNP (Table 14). These results assume premiums for indigent do not increase and there is no change in the demand for CBHI associated with the increase in premium.

Table 14: Percentage increase in household contributions and targeted subsidies needed to maintain net surplus, by region and year

Operational year	Amhara	Oromia	SNNP	Tigray
1	0%	0%	0%	0%
2	0%	0%	35%	0%
3	17%	0%	74%	33%
4	0%	0%	73%	76%
5	63%	0%	63%	56%
6	39%	0%	57%	0%
7	7%	0%	0%	n/a
Overall	**16%**	**0%**	**29%**	**10%**

3.11 CBHI staff turnover

Highlights:

- Staff turnover was generally between 20% and 30%.

Staff turnover is calculated as the number of staff leaving a scheme in a given year divided by the number of staff employed by the scheme at the beginning of the year. Schemes have three staff.

Analyses (not shown), however, show no apparent relationship between staff turnover and enrollment ratios (or in enrollment ratios in the next year). Overall, the staff turnover rate is about 0.25 staff per year for every staff employed by the scheme at the beginning of the year (Table 15). There is no apparent trend in the staff turnover over years of operation, although it is lower in the first year of operation than in subsequent years.

Table 15: Analysis of CBHI staff turnover

Region	Woreda	Years of operation	Overall	Year of operation						
				Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Amhara	Burie	4	0.08	0.00	0.33	0.00	0.00			
Amhara	Kewot	4	0.50	0.00	1.00	0.67	0.33			
Amhara	Woreta	4	0.09	0.33	0.00	0.00	0.00			
Amhara	Dewa Cheffa	5	1.00	1.00	1.00	1.00	1.00	1.00		
Amhara	**Sekota Town Administration**	5	0.27	0.00	0.00	1.00	1.00	0.00		
Amhara	Dangila	5	0.17	0.00	0.00	0.33	0.33	0.00		
Amhara	Worebabo	5	0.07	0.33	0.00	0.00	0.00	0.00		
Amhara	South Achefer	7	0.21	0.00	0.00	0.33	0.33	0.33	0.33	0.00

Region	Woreda	Years of operation	Overall	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
				Year of operation						
Oromia	Adea Berga	3	0.33	0.00	0.33	0.67				
Oromia	**Boset**	3	0.11	0.00	0.33	0.00				
Oromia	Digelu Tijo	3	0.00	0.00	0.00	0.00				
Oromia	Siraro	3	0.43	0.00	0.67	1.00				
Oromia	Adea	4	0.00	0.00	0.00	0.00	0.00			
Oromia	Hidhebu Abote	4	0.08	0.00	0.33	0.00	0.00			
Oromia	Aleltu	5	0.33	0.00	0.00	1.00	0.33	0.00		
Oromia	Kuyu	6	0.32	0.00	0.00	1.00	1.00	0.33	0.00	
SNNP	Damboya	7	0.10	0.00	0.00	0.00	0.00	0.00	0.33	0.33
SNNP	**Damot Woyde**	7	0.21	0.00	0.00	0.00	0.33	0.50	0.20	0.40
SNNP	Yirgalem Town	7	0.24	0.67	0.00	0.00	0.33	0.00	0.00	0.67
Tigray	Ahferom	6	0.10	0.00	0.00	0.00	0.00	0.33	0.33	
Tigray	Kilte-Awlaelo	6	0.33	0.00	0.67	0.33	1.00	0.00	0.33	
Tigray	**Tahtay-Adiyabo**	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Weighted Average	4.6	**0.25**	**0.12**	**0.29**	**0.35**	**0.33**	**0.25**	**0.20**	**0.20**

Staff turnover calculated as the number of staff leaving the CBHI scheme in a given operational year divided by the number of staff employed at the CBHI scheme at the start of the operational year.

3.12 Human resources factors related to institutional sustainability

Highlights:

- Respondents reported that the number of staff at both health facilities and at CBHI schemes was inadequate.

Respondents discussed that human resource constraints both at the CBHI schemes and health facilities are negatively affecting CBHI scheme sustainability. At facilities, respondents perceive insufficient numbers of qualified health personnel to meet the increased utilization of services associated with CBHI schemes. The increased demand as the result of increased CBHI coverage seemed to exacerbate the shortage of human resources for health common in rural Ethiopia. On the other hand, in Oromia and SNNP, respondents highlighted the important role that assigned CBHI focal persons play at health facilities in facilitating service delivery and problem resolution.

At the scheme level, most of the respondents agreed with the staff mix currently in place to manage CBHI schemes (i.e., scheme coordinator, accountant, and data encoder). However, the number of staff (three) was perceived as inadequate as CBHI schemes are expected to grow. Particularly, respondents across the four regions emphasized the need for a second data encoder to support processing payment requests by health facilities for user fees. Furthermore, respondents brought up the need to set and apply minimum job requirements that match the scope of these positions for improved performance.

Related to this, the relatively high staff turnover at the scheme level was attributed to uncompetitive salaries and lack of benefits for staff that are usually available for other government employees.

4. POLICY IMPLICATIONS OF THE FINDINGS

The analyses suggest that the financial sustainability of CBHI schemes is questionable in the mid to long term. The financial solvency of schemes decreased the longer they were in operation, with the fifth and sixth years of operation incurring the largest deficits. While a higher utilization rate of outpatient services per enrolled household is strongly associated with the CBHI scheme having a net negative balance, the number of outpatient visits per enrolled *member* (as estimated) was rarely above 1 per year – still very low by global standards, and below the level desired to optimize health outcomes.

Likely, more revenue is needed for CBHI schemes to be financially sustainable. The other side of the financial solvency equation is to increase revenue. Revenue is not sufficient to pay costs associated with covering user fees of enrolled households. Given that the number of outpatient visits per enrolled member was rarely above 1 per year, there is a need to mobilize a minimum threshold of money to attain a reasonable probability of financial solvency. More work is needed to determine the minimum threshold of revenue needed. While the data here suggest this is minimally 200 ETB per enrolled household per year, this finding is not applicable in Oromia, and needs further operational confirmation.

Alternatively, setting utilization rate for CBHI schemes based on global recommended standards and country context may be used to forecast revenue needs. Over time, CBHI schemes should obtain an "average" or "expected" number of outpatient visits per enrolled household, which could be used to determine a minimum threshold of revenue. It is not clear whether this "expected' number of outpatient visits has been captured in this study. The decline in the number of outpatient visits per enrolled household in the seventh year of operation is suggestive of this, but only five schemes had been in operation for seven years at the time of data collection. However, the high proportion of schemes that had a deficit in the fifth and sixth year indicates more money will need to be mobilized; minimally, planning for between five and six visits per enrolled household (outside of Oromia) should be considered for mid- to long-term financial solvency.

Explore the potential of alternative sources of financing including member contributions, and subsidies from federal, regional and woreda government. There does not appear to be a significant difference in the proportion of revenue generated from different sources (community, woreda and regional government, and federal government) across the regions. The average amount of revenue from enrolled households plus regional and woreda government per enrolled household was higher in Amhara and Oromia than in SNNP and Tigray. To the extent to which schemes in other regions can generate revenue per enrolled household at levels similar to those of Oromia, they may be able to increase their financial sustainability. Care should be exercised when raising household contributions, however, because doing this may affect households' willingness to enroll in CBHI schemes. To the extent that general subsidies can be increased, this would ameliorate the potential effect of higher contributions on enrollment. Thus, developing plans to increase the revenue of CBHI schemes will be a delicate balance between financial solvency, households' willingness to enroll at different premium levels, and the governments' willingness to subsidize CBHI schemes. Further understanding of the differences in the amounts collected per enrolled household in different regions is needed as well.

The quantitative results suggest that increasing the enrollment ratio may help to contain the number of outpatient visits per enrolled household. This finding is very tentative. For example, Oromia had, on average, lower enrollment ratios than other regions, but also had lower outpatient visits per enrolled household. This indicates that other factors likely are more important than the enrollment ratio in determining the number of outpatient visits per enrolled household. Further, the qualitative findings suggest that one reason for low enrollment is community perceptions that accessing services (whether insured or not) is problematic, affecting the perceived value of insurance. We were limited in our ability to fully assess how the enrollment ratio may influence use of health services because we did not have data on how long households enrolled in CBHI schemes and how length of enrollment was related to health care seeking behavior. Thus, more work is needed on understanding how enrollment, renewals, and other factors affect health care visits per enrolled household.

However, more work is needed to increase the enrollment ratios to achieve the Health Sector Transformation Plan 80-80 target by 2020, irrespective of the potential effect of the enrollment ratio on financial solvency. The enrollment ratio was below 50% in the majority of schemes included in this sample. While by the seventh year of operation, the average enrollment ratio was 50%, this is based on only a few schemes; even though on average the enrollment ratio increased the longer a scheme was in operation, only two schemes in Tigray had an enrollment ratio over 60% in the latest year of operation. The quantitative data suggest that having a high enrollment ratio in the first year of operation is associated with higher longer-term enrollment ratios, but that other factors also influence the enrollment ratio over time. However, ensuring that schemes start with high enrollment ratios is likely one important factor for CBHI scheme success. Qualitative data suggest that effective strategic communications and strong complaint management can play an important role in increasing enrollment. Communication activities using spokespeople / local champions seemed to be particularly effective.

The study also identified institutional factors discussed above that have influenced enrolment and scheme implementation. It also assessed recommendations that are relevant for policymakers and development partners interested in ensuring the short- to medium-term sustainability of the schemes.

The qualitative analysis suggests designing and implementing strategic sensitization approaches such as use of education sessions and materials tailored to specific benefits and requirements, as opposed to blanket sensitization with no focus, could increase understanding of the scope of the benefits and how to use them. This should be done at both the facility and community level. Sensitization efforts should also be harmonized across schemes, with a concentrated effort on learning and adopting proven strategies. Findings indicate sensitization should also be used as a mechanism to create champions within the government structure. This could potentially take the form of workshops to generate political will and engagement, and study tours for kebele leaders to well performing schemes for peer learning.

Furthermore, institutionalizing formal mechanisms and procedures to gather and address complaints from beneficiaries seemed to positively influence enrollment ratios. For example, Damot Woyde woreda in SNNP region had one of the highest enrollment ratios at both the first and last years of operation. It was also the only woreda where respondents extensively discussed the setup and operation of formalized complaints management and resolution structures. While we can't draw a causal relationship from this one example, this association suggests dedicated units for management of inputs and feedback from beneficiaries are likely to contribute to accountability and responsiveness of CBHI schemes, which will in turn encourage increased and sustained enrollment. Additionally, interview respondents suggested there is space for EHIA to better establish itself as the purchaser and play a greater role by leveraging financing mechanisms to influence serve delivery and oversee quality of care. This would require a clear provider-purchaser split at the national level, and improved integration of EHIA at the regional level.

Finally, as part of a larger systems-level response to strengthen the institutional sustainability of the CBHI scheme, priority should be placed on advocating for **increased investment and resources to improve services provided at health facilities**. Health facility readiness, quality of care, and availability of drugs are highlighted as the main factors that constrain enrollment into CBHI schemes. Mobilizing resources to address these issues needs increased focus and commitment from both regional and federal governments in order to ensure the sustainability of the CBHI program.

Work on staff retention and provide incentives both at schemes and health facilities. CBHI schemes are run by a structure that was developed to guide the pilot implementation. Interviews suggests that as schemes grow larger, three staff members are likely insufficient to carry out the duties necessary to run CBHI schemes. Furthermore, with the scale-up of the program, health facility staff are serving more beneficiaries now than before. Qualitative interviews suggest that staff at facilities view CBHI members as burdensome, as CBHI members seek more health care services than non-members, and have a preference for patients that pay user fees directly. It may therefore be necessary to introduce incentive mechanisms so that staff will be motivated to give quality health services to CBHI beneficiaries.

ANNEX A: LIST OF CBHI SCHEMES INCLUDED IN THE STUDY

Name of Scheme	Region	Enrollment ratio (Column E / F)	Qualitative data collected?
Damot Woyde	SNNP	47.6	Yes
Yirgalem	SNNP	28.4	
Damboya	SNNP	51.3	
Kilte-Awlaelo	Tigray	64.9	
Ahiferom	Tigray	45.4	
Tahitay Adiyabo	Tigray	78.9	Yes
Sekota town	Amhara	19.7	Yes
Woreta	Amhara	23.7	
Dangila	Amhara	41.0	
Bure Zuria	Amhara	39.4	
Worebabo	Amhara	42.8	
S/Achefer	Amhara	57.8	
Borena*	Amhara	99.3	Yes
Kewot	Amhara	55.0	
Dawa Chaffa	Amhara	54.3	
Adea Berga	Oromia	24.9	
Boset	Oromia	17.6	Yes
Siraro	Oromia	38.0	
Kuyu	Oromia	27.9	
Digelu Tijo	Oromia	29.7	
Aleltu	Oromia	55.3	
Gimbichu	Oromia	60.9	Yes
Adea	Oromia	39.5	
Hidhebu Abote	Oromia	31.4	

*Financial data were under audit and thus not unavailable for the assessment team. Thus, the scheme was dropped from both quantitative and qualitative analysis.

ANNEX B: KEY INFORMANT INTERVIEW PARTICIPANTS (BY INSTITUTION AND CADRE)

Organization / Cadre	Number of KIIs
The Ethiopia Health Insurance Agency (national level)	1
Regional health bureau official (1 per region)	4
Woreda health office official (1 per health office)	5
CBHI coordinator (1 per scheme)	5
Health extension worker OR kebele manager (1 per scheme)	5
Community-based organization representatives that have supported the CBHI scheme (2 per scheme)	10
Total number of KIIs	**30**

ANNEX C: DATA COLLECTION INSTRUMENTS

C1: Quantitative Data Collection Template

A. Background Information
Fill in before the start of data collection

1. **Region:**

2. **Zone:**

3. **Woreda:**

4. **Date of start of data collection: (MM/DD)**

B. Profile of the Woreda

No. of kebeles	Population size			Number of households (estimated)	
(a)	Male (b)	Female (c)	Total (d)	(e)	
C. Profile of the CBHI Scheme					

1. Month and year this CBHI Scheme started operations (MM / YY; please use Gregorian Calendar):							
					Month of official launch; make a note if in Julian Calendar		
	MM		**YY**				
D. Human Resources							
Fill in the table for each year of operation; positions may include Coordinator, Health Officer, Accountant/finance officer, IT/data manager, etc. Please be inclusive of all positions. (If data are not available, enter "9998"). We are interested in the number of positions, not the type.							
We are interested in staff that were actually working for the CBHI scheme.							
Year of operation of the CBHI scheme	**Number of occupied positions at the start of the year**		**Number of staff that left the CBHI scheme**		**Number of occupied positions at the end of the year**		
	Permanent Staff	**Temporary Staff**	**Permanent Staff**	**Temporary Staff**	**Permanent Staff**	**Temporary Staff**	
First year							
Second year							
Third year							
Fourth year							
Fifth year							
Sixth year							
Seventh year							
E. Enrollment							
This table should collect information on all enrollees: Paying enrollees AND indigent							

enrollees.

Year of operation	# HHs expected to renew their membership this year	# HHs renewed membership this year	# newly enrolled HHs (this year)	# of beneficiaries per household (if available)			
	(a)	(b)	(c)	(d)			
First year							
Second year							
Third year							
Fourth year							
Fifth year							
Sixth year							
Seventh year							

F. CBHI Finance

1. Could you please tell us the amount you generated from members' contribution including membership renewal during *each fiscal year*? (If data are not available, enter "9998")

Year of operation	# Active Paying households (newly enrolled and renewed membership)	Amount generated in ETB					
	(a)	(b)					
First year							
Second year							
Third year							
Fourth year							

Fifth year							
Sixth year							
Seventh year							

2. Could you please tell us the amount you generated from government contributions including national and regional governments during *each fiscal year*? (If data are not available, enter "9998")

Year of operation	Amount received in **ETB** from the <u>regional and woreda</u> government (not including column b) (a)	Amount received from the <u>reginal and woreda</u> governme nt <u>for deficit financing</u> (b)	Amount received in **ETB** from the <u>national</u> governm ent (c)				
First year							
Second year							
Third year							
Fourth year							
Fifth year							
Sixth year							
Seventh year							
G. Utilization							

1. Could you please provide us number of CBHI beneficiaries served and the amount for each fiscal year you have been in operation disaggregated by type of facility, service, and the corresponding amount reimbursed?

First year:		YY					
	Type of facility (a)	**Number of facilities (b)**	**Type of service**	**# beneficia ries served (d)**	**Total amou nt paid by the CBHI schem e (in ETB)**		
#			**(c)**		**(e)**		
1.1	**HCs**						
1.1.1			Outpatient				
1.1.2			Inpatient				
1.2	**Hospitals**						
1.2.1			Outpatient				
1.2.2			Inpatient				
1.3	**Payments to other facilities**						
1.3.1			Outpatient				
1.3.2			Inpatient				
1.4	**Payment to beneficiaries to refund out-of-pocket expenses**						
1.5	**Administrative costs** *(include only if paid by the CBHI scheme; do not include if paid by the government)*						

#	Type of facility (a)	Number of facilities (b)	Type of service	# beneficiaries served (d)	Total amount paid by the CBHI Scheme (in ETB)	If this is the last year of operation, enter the amount claimed /billed but that the CBHI has not yet paid	
1.6	Other, please specify:_____ _____ ____						
Second year	(Check here if not applicable):				**Year:**	1	Y Y
						(c)	(e)
1.1	HCs						
1.1.1			Outpatient				
1.1.2			Inpatient				
1.2	Hospitals						
1.2.1			Outpatient				
1.2.2			Inpatient				
1.3	Payments to other facilities						
1.3.1			Outpatient				
1.3.2			Inpatient				
1.4	Payment to beneficiaries to refund out-of-pocket expenses						

1.5	**Administrative costs** *(include only if paid by the CBHI scheme; do not include if paid by the government)*						
1.6	**Other, please specify:_____ _____ ____**						
Third year	**(Check here if not applicable):**				**Year:**	**2**	**Y Y**
	Type of facility (a)	**Number of facilities (b)**	**Type of service**	**# beneficia ries served (d)**	**Total amou nt paid by the CBHI Sche me (in ETB)**	**If this is the last year of operati on, enter the amount claimed /billed but that the CBHI has not yet paid**	
#			**(c)**		**(e)**		
1.1	**HCs**						
1.1.1			**Outpatient**				
1.1.2			**Inpatient**				
1.2	**Hospitals**						
1.2.1			**Outpatient**				
1.2.2			**Inpatient**				
1.3	**Payments to other facilities**						
1.3.1			**Outpatient**				
1.3.2			**Inpatient**				

#	Type of facility (a)	Number of facilities (b)	Type of service	# beneficiaries served (d)	Total amount paid by the CBHI Scheme (in ETB)	If this is the last year of operation, enter the amount claimed/billed but that the CBHI has not yet paid	
1.4	**Payment to beneficiaries to refund out-of-pocket expenses**						
1.5	**Administrative costs** *(include only if paid by the CBHI scheme; do not include if paid by the government)*						
1.6	**Other, please specify:_____ _____ ____**						
Fourth year	**(Check here if not applicable):**				**Year:**	**3**	**Y Y**

#	Type of facility (a)	Number of facilities (b)	Type of service (c)	# beneficiaries served (d)	Total amount paid by the CBHI Scheme (in ETB) (e)	If this is the last year of operation, enter the amount claimed/billed but that the CBHI has not yet paid	
1.1	**HCs**						
1.1.1			**Outpatient**				
1.1.2			**Inpatient**				
1.2	**Hospitals**						
1.2.1			**Outpatient**				
1.2.2			**Inpatient**				
1.3	**Payments to other facilities**						
1.3.1			**Outpatient**				

#	Type of facility (a)	Number of facilities (b)	Type of service	# beneficiaries served (d)	Total amount paid by the CBHI Scheme (in ETB)	If this is the last year of operation, enter the amount claimed /billed but that the CBHI has not yet paid	
1.3.2			Inpatient				
1.4	**Payment to beneficiaries to refund out-of-pocket expenses**						
1.5	**Administrative costs** *(include only if paid by the CBHI scheme; do not include if paid by the government)*						
1.6	**Other, please specify:_____**						
Fifth year	**(Check here if not applicable):**				**Year:**	**4**	**Y Y**
						(c) / (e)	
1.1	**HCs**						
1.1.1			**Outpatient**				
1.1.2			**Inpatient**				
1.2	**Hospitals**						
1.2.1			**Outpatient**				
1.2.2			**Inpatient**				
1.3	**Payments to other**						

#	Type of facility (a)	Number of facilities (b)	Type of service	# beneficiaries served (d)	Total amount paid by the CBHI Scheme (in ETB)	If this is the last year of operation, enter the amount claimed/billed but that the CBHI has not yet paid	
1.3.1	facilities		Outpatient				
1.3.2			Inpatient				
1.4	Payment to beneficiaries to refund out-of-pocket expenses						
1.5	Administrative costs *(include only if paid by the CBHI scheme; do not include if paid by the government)*						
1.6	Other, please specify:_____ _____ ____						
Sixth year	(Check here if not applicable):				Year:	5	Y Y
	Type of facility (a)	Number of facilities (b)	Type of service	# beneficiaries served (d)	Total amount paid by the CBHI Scheme (in ETB)	If this is the last year of operation, enter the amount claimed/billed but that the CBHI has not yet paid	
#			(c)		(e)		
1.1	HCs						
1.1.1			Outpatient				
1.1.2			Inpatient				
1.2	Hospitals						
1.2.1			Outpatient				
1.2.2			Inpatient				

1.3	**Payments to other facilities**						
1.3.1		**Outpatient**					
1.3.2		**Inpatient**					
1.4	**Payment to beneficiaries to refund out-of-pocket expenses**						
1.5	**Administrative costs** *(include only if paid by the CBHI scheme; do not include if paid by the government)*						
1.6	**Other, please specify:_____ _____ ____**						
Seventh year	**(Check here if not applicable:**			**)**	**Year:**	**6**	**Y Y**
	Type of facility (a)	**Number of facilities (b)**	**Type of service**	**# beneficia ries served (d)**	**Total amou nt paid by the CBHI Sche me (in ETB)**	**If this is the last year of operati on,** enter the amount claimed /billed	
#			**(c)**		**(e)**	but that the **CBHI** has not yet paid	
1.1	**HCs**						
1.1.1			**Outpatient**				
1.1.2			**Inpatient**				
1.2	**Hospitals**						
1.2.1			**Outpatient**				

1.2.2			Inpatient					
1.3	**Payments to other facilities**							
1.3.1			**Outpatient**					
1.3.2			**Inpatient**					
1.4	**Payment to beneficiaries to refund out-of-pocket expenses**							
1.5	**Administrative costs** *(include only if paid by the CBHI scheme; do not include if paid by the government)*							
1.6	**Other, please specify:_____ _____ ____**							

C2: Key Informant Interview Guides

Key Informant Interview Questionnaire: Ethiopian Health Insurance Agency (EHIA)

Study Title: Community-based Health Insurance Program in Ethiopia: Assessing Institutional and Financial Sustainability

PI Version, Date:

_____   _____

Primary interviewer name   Interviewee name

_____   _____

Contact number: Contact number:

_____

Date:

Roles and Responsibilities

1) Who are the key stakeholders with regards to CBHI policy making, design, and implementation?

(potential stakeholders to **probe** in case respondents fail to mention one of these relevant actors: FMOH, EHIA, Regional authorities, BOFED, RHB, Zonal authorities, Woreda authorities, WOFED, WorHO, Kebele authorities, Health Extension workers, Community leaders, community-based organizations (CBOs)

Note: CBOs are defined as any type of grassroots groups engaged with community mobilization, including development army, religious organizations, edirs, etc.

2) What are their role and responsibilities?

3) Can you please describe for us the role EHIA played in supporting the CBHI schemes (for example, subsidizing the schemes, improving the quality of services by providers, training, material support, clinical audits, and skill upgrading plans for CBHI staff etc.)?

4) Can you describe the types of criteria EHIA may use to prioritize and target their support to CBHI schemes?

    a. **Probe**: is performance taken into account, such as enrollment ratios and financial solvency?

    b. **Probe**: in general, how do FMOH and EHIA provide support to regions / woredas to improve CBHI performance?

Challenges and Lessons Learned

5) The achievement of the CBHI schemes in terms of enrollment ratios and financial solvency varies from region to region and woreda to woreda:

    a. When looking at CBHI schemes that have been operational for more than 2 years, what do you think are the major factors for regional and woreda variation in enrollment ratios?

    b. How about factors contributing to variations in financial solvency?

    c. When looking at CBHI schemes that have been operational for more than 2 years, what strategies were successful in increasing enrollment and reenrollment ratios?

        a. **Probe**: are there any best practices you have identified? Which ones?

        b. **Probe**: can you share any examples of best practices from a scheme with high enrollment ratios that were then adopted by another scheme with low enrollment ratios which then led to improved performance (i.e. increased enrollment ratios)?

Sustainability

6) What is the plan to ensure financial sustainability of CBHI schemes?

     a. **Probe**: for example, risk pooling among different schemes in the region and then at national level among all schemes?

     b. **Probe**: will there be any safety net to protect CBHI schemes from the problem of insolvency and complete collapse?

7) What is the plan to promote and ensure institutional sustainability of CBHI?

Note: Institutional sustainability is defined as sufficient number of staff with the required capabilities as well as appropriate structure at all levels.

Final Considerations

8) We've talked about a lot of issues related to CBHI schemes, is there anything else you'd like to add to help us better understand CBHI performance and sustainability?

Thank interviewee for their time and for sharing their thoughts/experiences.

Key Informant Interview Questionnaire: Regional Health Bureau Officials

Study Title: Community-based Health Insurance Program in Ethiopia: Assessing Institutional and Financial Sustainability

PI Version, Date:

_____   _____

Primary interviewer name   Interviewee name

_____   _____

Contact number: Contact number:

_____   _____

Date: Region / Position

Opening Questions

1) Can you tell us about your roles and responsibilities in the management and functioning of CBHI schemes?

2) CBHI schemes in your region have been operational for over 2 years now. Based on this experience, what do you think are the major factors that have positively contributed to the enrollment ratios of eligible households?

3) What do you think are the major factors that have made it difficult to achieve high enrollment ratios?

Stakeholder Commitment and Engagement

4) Who are the key stakeholders with regards to CBHI policy making, design, and implementation?

(potential stakeholders to **probe** in case respondents fail to mention one of these relevant actors: FMOH, EHIA, Regional authorities, BOFED, RHB, Zonal authorities, Woreda authorities, WOFED, WorHO, Kebele authorities, Health Extension workers, Community leaders, Community based organizations)

Note: CBOs are defined as any type of grassroots groups engaged with community mobilization, including development army, religious organizations, edirs, etc.

     a. What are their role and responsibilities?

5) What type of support do you receive from the following stakeholders to improve CBHI schemes' overall performance?

     a. FMOH

     b. EHIA

     c. PFSA

d. EFMHACA

e. Other governmental agencies (such as MOFEC, BOFEC etc.)

f. External development partners

Note: Support can include, among other things,

    i. Amount and timely general subsidies from FMOH;

    ii. More consistent / useful capacity building and technical support from EHIA;

    iii. Facilitating regular audits by WOFED;

    iv. Assigning specific budget codes for the CBHI program from BOFEC;

    v. Drug supply by PFSA; and

    vi. Health facility accreditation by EFMHACA.

6) Is such support sufficient? **Probe**: why/ why not?

7) What mechanisms are in place to motivate improvements in CBHI scheme enrollment ratios? What about strategies to motivate beneficiaries to enroll / renew their membership?

    a. **Probe**: What types of positive or negative incentives have been used to increase enrollment ratios?

    b. **Probe**: Ask about incentives targeting both CBHI schemes and households

8) What organizational structures or management practices exist to enable dialogue between the CBHI scheme and beneficiaries to discuss problems and implement solutions?

9) What mechanisms exist to identify and enroll poor households that qualify for government subsidy?

a. Do you consider these mechanisms to be effective? (**Probe**: What is working; what could be improved?)

CBHI Structure

10) Where is the CBHI schemes in your region housed? **Probe**: At the woreda administration or woreda health office?

11) How would you describe your woreda administration's (or woreda health office's) relationship with CBHI scheme staff?

12) What factors influence the relationship between the local woreda administration office (or woreda health office) and the CBHI scheme staff?

   a. **Probe**: You could ask about role of location, full integration of the CBHI staff into the office structure, etc.

13) Could you tell us the governance structure of the CBHI program, including structures at the regional, zonal, and woreda level?

14) What aspects of this governance structure function well?

15) What aspects of this governance structure need to be improved?

   a. **Probe**: How?

CBHI Scheme Human Resources

16) How many staff works on the CBHI program at regional and zonal levels?

17) What is the overall level of experience and education of CBHI team leaders working at regional and zonal levels?

18) How does CBHI team leads' level of experience and education influence overall program implementation? **Probe**: You can ask about influence on performance monitoring, supervision, and engagement with other stakeholders.

19) What types of policy changes to minimum qualifications and CBHI team composition might be necessary to improve performance?

Final Considerations

20) We've talked about a lot of issues related to CBHI schemes, is there anything else you'd like to add to help us better understand CBHI performance and sustainability?

Thank interviewee for their time and for sharing their thoughts/experiences.

Key Informant Interview Questionnaire: Woreda Health Office Heads OR Woreda Administration Office Heads

Study Title: Community-based Health Insurance Program in Ethiopia: Assessing Institutional and Financial Sustainability

PI Version, Date:

_____ _____

Primary interviewer name   Interviewee name

_____ _____

Contact number: Contact number:

_____ _____

Date: Woreda / Position

Opening Questions

1) Can you tell us about your roles and responsibilities in the management and functioning of CBHI schemes?

2) CBHI schemes in your woreda have been operational for over 2 years now. Based on this experience, what do you think are the major factors that have positively contributed to the enrollment ratios of eligible households?

3) What do you think are the major factors that have made it difficult to achieve high enrollment ratios?

Stakeholder Commitment and Engagement

4) Who are the key stakeholders with regards to CBHI policy making, design, and implementation?

(potential stakeholders to **probe** in case respondents fail to mention one of these relevant actors: FMOH, EHIA, Regional authorities, BOFED, RHB, Zonal authorities, Woreda authorities, WOFED, WorHO, Kebele authorities, Health Extension workers, Community leaders, Community based organizations

Note: CBOs are defined as any type of grassroots groups engaged with community mobilization, including development army, religious organizations, edirs, etc.

   a.   What are their role and responsibilities?

5) What type of support do you receive from the following stakeholders to improve CBHI schemes' overall performance?

   b.   FMOH

   c.   EHIA

   d.   Regional health bureau

   e.   Zonal administration or zonal health departments

   f.   Other governmental agencies (such as MOFEC, BOFEC, WOFED etc.)

   g.   External development partners

Note: Support can include, among other things,

   i.   Amount and timely general subsidies from FMOH;

   ii.   Amount and timely targeted subsidies from regional health bureau;

   iii.   More consistent / useful capacity building and technical support from EHIA;

iv. Facilitating and undertaking regular audits by WOFED; and

v. Assigning specific budget codes for the CBHI program from BOFEC.

6) Is such support sufficient? **Probe**: why/ why not?

7) What mechanisms are in place to motivate improvements in CBHI scheme enrollment ratios? What about strategies to communicate with and motivate beneficiaries to enroll / renew their membership?

    a. **Probe**: What types of positive or negative incentives have been used to increase enrollment ratios?

    b. **Probe**: Ask about incentives targeting both CBHI schemes and households

Community Participation and Engagement

9) How do CBHI schemes engage with their beneficiaries?

    a. For example, what mechanisms are in place to enable community members and CBHI beneficiaries to report complaints / problems to CBHI management and/or the woreda health office head?

10) What organizational structures or management practices exist to enable dialogue between the CBHI scheme and beneficiaries to discuss problems and implement solutions?

11) What mechanisms exist to identify poor households that qualify for government subsidy? (*Ask for specific requirements and processes*)

    a. How were these requirements developed? Who participated? Did you work with other social protection programs?

    b. Were there any challenges implementing these requirements?

    c. How can it be done better/improved?

CBHI Structure

12) How would you describe your woreda administration's (or woreda health office's) relationship with CBHI scheme staff?

13) What factors influence the relationship between the local woreda administration office (or woreda health office) and the CBHI scheme staff?

    a. **Probe**: You could ask about role of location, full integration of the CBHI staff into the office structure, etc.

14) How does the CBHI governance structure work?

    a. What aspects of this governance structure function well?

    b. What aspects of this governance structure need to be improved? **Probe**: How?

CBHI Scheme Human Resources

15) How many staff works on the CBHI program at the woreda level?

16) What is the level of experience and education of the CBHI team leader working at the woreda level?

17) How does CBHI team lead's level of experience and education influence program implementation? **Probe**: You can ask about influence on performance monitoring, supervision, and engagement with other stakeholders.

18) What types of policy changes to minimum qualifications and CBHI team composition might be necessary to improve performance?

Final Considerations

19) We've talked about a lot of issues related to CBHI schemes, is there anything else you'd like to add to help us better understand CBHI performance and sustainability?

Thank interviewee for their time and for sharing their thoughts/experiences.

Key Informant Interview Questionnaire: CBHI Scheme Team Leader

Study Title: Community-based Health Insurance Program in Ethiopia: Assessing Institutional and Financial Sustainability

PI Version, Date:

_____	_____
Primary interviewer name	Interviewee name
_____	_____
Contact number:	Contact number:
_____	_____
Date:	Woreda / Position

Opening Questions

1) Can you tell us about your roles and responsibilities in the management and functioning of this CBHI scheme?

2) Your CBHI scheme has been operational for over 2 years now. Based on this experience, what do you think are the major factors that have positively contributed to your enrollment ratios of eligible households?

3) What do you think are the major factors that have made it difficult to achieve high enrollment ratios?

Stakeholder Commitment and Engagement

4) Who are the key stakeholders with regards to CBHI policy making, design, and implementation?

(potential stakeholders to **probe** in case respondents fail to mention one of these relevant actors: FMOH, EHIA, Regional authorities, BOFED, RHB, Zonal authorities, Woreda authorities, WOFED, WorHO, Kebele authorities, Health Extension workers, Community leaders, Community based organizations

Note: CBOs are defined as any type of grassroots groups engaged with community mobilization, including development army, religious organizations, edirs, etc.

    a. What are their role and responsibilities?

5) What type of support do you receive from the following stakeholders to improve CBHI schemes' overall performance?

    a. FMOH

    b. EHIA

    c. Regional authorities/BOFED/RHB

    d. Zonal authorities

    e. Woreda authorities/WOFED/WorHO

    f. Kebele authorities

    g. Extension workers

    h. Community leaders

    i. Community-based organizations

    j. External development partners

Note: Support can include, among other things,

    i. Amount and timely general subsidies from FMOH;

ii. More consistent / useful capacity building and technical support from EHIA;

iii. Facilitating regular audits by WOFED;

iv. Assigning specific budget codes for the CBHI program from BOFEC; and

v. Community mobilization by HEWs, community leaders, and community based organizations.

b. Is such support sufficient? **Probe**: why/ why not?

6) What mechanisms are in place to motivate improvements in enrollment ratios? What about strategies to motivate beneficiaries to enroll / renew their membership?

a. **Probe**: What types of positive or negative incentives have been used to motivate households to enroll (and reenroll) into the CBHI scheme?

Community Participation and Engagement

7) How does the CBHI scheme engage with its beneficiaries?

a. For example, what mechanisms are in place to enable community members and CBHI beneficiaries to report and complaints / problems to the scheme? **Probe**: If the respondent doesn't discuss, ask about the process to address complaints

CBHI Structure

8) How would you describe your CBHI scheme's relationship with the woreda administration office (or woreda health office)?

9) What factors influence the relationship between your scheme and the local woreda administration office (or woreda health office)? **Probe**: You could ask about role of location, full integration of the CBHI staff into the office structure, etc.

10) Could you tell us the governance structure of the CBHI program, including structures at the regional, zonal, and woreda level?

a. What aspects of this governance structure function well?

b. What aspects of this governance structure need to be improved? **Probe**: How?

CBHI Scheme Human Resources

11) How many staff works in the CBHI scheme office?

      a. Do you think this is adequate number of human resource to carry out its work? **Probe**: If they say no, ask why not

12) What is each CBHI scheme staff's level of experience and education?

13) How does the level of experience and education of each CBHI staff influence on day-to-day scheme operation?

      a. **Probe**: You can ask about influence on kebele and health facility supervision, financial management, engagement with other stakeholders, etc.

14) What types of policy changes to team composition and minimum qualifications for each scheme position might be necessary to improve performance?

Final Considerations

15) We've talked about a lot of issues related to CBHI schemes, is there anything else you'd like to add to help us better understand CBHI performance and sustainability?

Thank interviewee for their time and for sharing their thoughts/experiences.

Key Informant Interview Questionnaire: Kebele manager (or, Health Extension Worker if she has fully taken over the job)

Study Title: Community-based Health Insurance Program in Ethiopia: Assessing Institutional and Financial Sustainability

Principal Investigator:

PI Version, Date:

_____	_____
Interviewer name	Interviewee name
_____	_____
Contact number:	Contact number:
_____	_____
Date:	Woreda / Position

Opening Questions

1) Can you tell us about your roles and responsibilities in the functioning of CBHI in your kebele?

   a. How long have you been supporting CBHI community mobilization activities?

2) CBHI has been operational for over 2 years now in your kebele. Based on this experience, what do you think are the major factors that have positively contributed to enrollment of eligible households?

3) What do you think are the major factors that have made it difficult to achieve high enrollment of households?

Stakeholder Commitment and Engagement

4) Who are the key stakeholders with regards to CBHI community mobilization?

(potential stakeholders to **probe** in case respondents fail to mention one of these relevant actors: Woreda cabinet, Woreda health office, Kebele cabinet, Community leaders, Community based organizations)

Note: CBOs are defined as any type of grassroots groups engaged with community mobilization, including development army, religious organizations, edirs, etc.

      a. How does each of these stakeholders support community mobilization?

5) What mechanisms are in place to motivate CBHI kebele-level mobilizers to improve performance?

Community Participation and Engagement

6) How do you sensitize households towards CBHI enrollment?

7) What mechanisms are in place at the kebele level to enable community members and CBHI beneficiaries to report complaints / problems?

8) We understand there are specific mechanisms to identify poor households for government subsidies. What is your perspective on how fair the selection of poor households for the subsidy has been?

      a. What would be your recommendations for improvement?

Final Considerations

9) We've talked about a lot of issues related to CBHI schemes, is there anything else you'd like to add to help us better understand CBHI performance and sustainability?

Thank interviewee for their time and for sharing their thoughts/experiences.

Key Informant Interview Questionnaire: Representative from the relevant Community-based Organizations supporting CBHI expansion in the selected kebele

Note: *CBOs are defined as any type of grassroots groups engaged with community mobilization, including development army, religious organizations, edirs, etc. The most relevant development army group should be one of the two CBOs interviewed.*

Study Title: Community-based Health Insurance Program in Ethiopia: Assessing Institutional and Financial Sustainability

PI Version, Date:

_____   _____

Primary interviewer name   Interviewee name

_____   _____

Contact number: Contact number:

_____   _____

Date: Woreda / Position

Opening Questions

1) Can you tell us about how your group or association supports CBHI community mobilization?

2) CBHI has been operational for over 2 years now in your kebele. So far, what do you think are the major factors that have positively contributed to people joining the program?

3) What do you think are the major factors that have discouraged people from joining the program?

Stakeholder Commitment and Engagement

    4) Who are the key stakeholders with regards to CBHI community mobilization?

(potential stakeholders to **probe** in case respondents fail to mention one of these relevant actors: Woreda cabinet, Kebele cabinet, Community leaders, etc.

        a. How does each of these stakeholders support community mobilization?

    5) What mechanisms are in place to motivate your group/association to improve performance?

    6) How do you influence households within your catchment area to enroll in CBHI?

Final Considerations

    7) We've talked about a lot of issues related to CBHI schemes, is there anything else you'd like to add to help us better understand CBHI acceptance and sustainability?

Thank interviewee for their time and for sharing their thoughts/experiences.

ANNEX D: CONTRIBUTIONS COLLECTED FROM HOUSEHOLDS AND TOTAL PAYMENTS BY CBHI SCHEMES TO HEALTH FACILITIES BY SCHEME AND YEAR (ETB)

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
Amhara	**Burie**	Contributions collected per household	130	160	159	165			
		Payments per household	N/A	105	130	202			
		Balance	N/A	55	29	-37			
Amhara	**Dangila**	Contributions collected per household	75	110	146	135	157		
		Payments per household	N/A	98	277	217	282		
		Balance	N/A	12	-132	-82	-125		
Amhara	**Dewa Cheffa**	Contributions collected per household	121	125	126	187	197		
		Payments per household	43	82	130	223	269		
		Balance	78	43	-4	-36	-72		
Amhara	**Kewot**	Contributions collected per household	84	66	136	134			
		Payments per household	14	132	67	98			
		Balance	71	-66	69	35			
Amhara	**Sekota Town Administration**	Contributions collected per household	130	98	65	186	186		
		Payments per household	57	225	439	299	415		
		Balance	73	-127	-374	-112	-229		
Amhara	**South Achefer**	Contributions collected per household	30	63	92	133	136	174	192
		Payments per household	N/A	45	136	224	271	296	275

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
		Balance	N/A	18	-44	-91	-135	-122	-83
Amhara	**Worebabo**	Contributions collected per household	112	130	104	126	74		
		Payments per household	34	437	148	151	N/A		
		Balance	78	-307	-44	-25	N/A		
Amhara	**Woreta**	Contributions collected per household	96	98	90	103			
		Payments per household	125	210	281	199			
		Balance	-29	-113	-191	-96			
	Amhara Average (weighted)	Contributions collected per household	107	110	125	146	164	174	192
		Payments per household	38	158	164	190	283	296	275
		Balance	69	-48	-39	-44	-119	-122	-83
Oromia	**Adea**	Contributions collected per household	91	111	138	183			
		Payments per household	N/A	32	78	95			
		Balance	N/A	79	60	88			
Oromia	**Adea Berga**	Contributions collected per household	88	25	37				
		Payments per household	39	52	N/A				
		Balance	48	-26	N/A				
Oromia	**Aleltu**	Contributions collected per household	89	100	140	193	172		
		Payments per household	N/A	35	48	72	77		
		Balance	N/A	65	92	121	95		
Oromia	**Boset**	Contributions collected per household	83	81	52				
		Payments per household	39	103	128				
		Balance	43	-21	-76				
Oromia	**Digelu Tijo**	Contributions collected per household	92	3	100				
		Payments per household	16	98	50				
		Balance	76	-95	50				
Oromia	**Gimbichu**	Contributions collected per household	124	158	159	159	150	153	210

Region	Woreda	Parameter	1	2	3	4	5	6	7
		Year of operation							
		Payments per household	N/A	15	66	99	100	107	130
		Balance	N/A	143	92	60	50	47	81
Oromia	**Hidhebu Abote**	Contributions collected per household	89	128	129	163			
		Payments per household	N/A	38	87	85			
		Balance	N/A	90	42	78			
Oromia	**Kuyu**	Contributions collected per household	80	31	19	115	85	141	
		Payments per household	N/A	N/A	89	101	206	156	
		Balance	N/A	N/A	-71	14	-121	-15	
Oromia	**Siraro**	Contributions collected per household	121	113	113				
		Payments per household	24	75	92				
		Balance	97	39	21				
	Oromia Average (weighted)	Contributions collected per household	92	75	91	158	119	145	210
		Payments per household	33	65	91	92	153	142	130
		Balance	58	10	1	66	-33	3	81
SNNP	**Damboya**	Contributions collected per household	107	79	80	94	147	232	172
		Payments per household	77	148	181	293	203	402	130
		Balance	30	-69	-101	-200	-56	-170	42
SNNP	**Damot Woyde**	Contributions collected per household	82	54	39	47	50	103	130
		Payments per household	56	94	109	137	194	186	96
		Balance	27	-40	-70	-90	-145	-83	34
SNNP	**Yirgalem Town**	Contributions collected per household	73	101	86	74	82	139	82
		Payments per household	127	331	307	304	295	554	99
		Balance	-53	-230	-220	-231	-213	-416	-17
	SNNP Average (weighted)	Contributions collected per household	88	78	68	72	93	158	128
		Payments per household	87	191	199	245	231	381	108
		Balance	1	-113	-130	-173	-138	-223	20
Tigray	**Ahferom**	Contributions collected per	87	41	64	52	68	97	

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
		household							
		Payments per household	27	235	261	175	175	193	
		Balance	60	-194	-197	-124	-107	-95	
Tigray	**Kilte-Awlaelo**	Contributions collected per household	106	87	92	90	113	189	
		Payments per household	79	156	149	190	203	196	
		Balance	27	-69	-57	-100	-90	-7	
Tigray	**Tahtay-Adiyabo**	Contributions collected per household	89	79	99	82	109	113	
		Payments per household	115	196	340	258	223	281	
		Balance	-26	-117	-241	-176	-114	-168	
	Tigray Average (weighted)	Contributions collected per household	94	69	85	75	97	133	
		Payments per household	74	196	250	208	201	223	
		Balance	20	-127	-165	-133	-104	-90	
	Overall Average (weighted)	Contributions collected per household	98	100	108	139	141	155	172
		Payments per household	43	135	145	175	246	261	200
		Balance	56	-35	-37	-36	-105	-106	-28

N/A: Data not available

ANNEX E: TOTAL CONTRIBUTIONS COLLECTED FROM COMMUNITIES (HOUSEHOLDS) AND TARGETED SUBSIDIES FROM WOREDA/ REGIONAL GOVERNMENTS AND TOTAL PAYMENTS TO HEALTH FACILITIES AND FOR BENEFICIARY OUT-OF-POCKET PAYMENTS, BY SCHEME AND YEAR (ETB)

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
Amhara	**Burie**	Community contributions and targeted subsidies per enrolled household	156	181	171	177			
		Payments per enrolled households	N/A	105	130	202			
		Balance	N/A	76	42	-25			
Amhara	**Dangila**	Community contributions and targeted subsidies per enrolled household	92	141	171	150	171		
		Payments per enrolled households	N/A	98	277	217	282		
		Balance	N/A	43	-106	-66	-110		
Amhara	**Dewa Cheffa**	Community contributions and targeted subsidies per enrolled household	201	151	147	226	248		
		Payments per enrolled households	43	82	130	223	269		
		Balance	158	68	17	4	-21		
Amhara	**Kewot**	Community contributions and targeted subsidies per enrolled	106	142	154	157			

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
		household							
		Payments per enrolled households	14	132	67	98			
		Balance	93	10	88	59			
Amhara	**Sekota Town Administration**	Community contributions and targeted subsidies per enrolled household	215	154	119	372	387		
		Payments per enrolled households	57	225	439	299	415		
		Balance	158	-71	-320	73	-28		
Amhara	**South Achefer**	Community contributions and targeted subsidies per enrolled household	62	94	96	191	159	198	232
		Payments per enrolled households	N/A	45	136	224	271	296	275
		Balance	N/A	49	-40	-33	-113	-98	-43
Amhara	**Worebabo**	Community contributions and targeted subsidies per enrolled household	158	173	147	179	104		
		Payments per enrolled households	34	437	148	151	N/A		
		Balance	124	-264	-1	28	N/A		
Amhara	**Woreta**	Community contributions and targeted subsidies per enrolled household	140	157	167	140			
		Payments per enrolled households	125	210	281	199			
		Balance	14	-54	-115	-59			
	Amhara Average (weighted)	Community contributions and targeted subsidies per enrolled household	158	149	149	184	204	198	232
		Payments per enrolled households	38	158	164	190	283	296	275
		Balance	120	-9	-15	-6	-79	-98	-43
Oromia	**Adea**	Community contributions and targeted subsidies per enrolled household	189	121	184	232			
		Payments per enrolled households	N/A	32	78	95			
		Balance	N/A	90	106	137			
Oromia	**Adea Berga**	Community contributions and targeted subsidies per enrolled household	166	85	139				
		Payments per enrolled households	39	52	N/A				

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
		Balance	127	33	N/A				
Oromia	**Aleltu**	Community contributions and targeted subsidies per enrolled household	146	144	179	232	188		
		Payments per enrolled households	N/A	35	48	72	77		
		Balance	N/A	109	131	159	111		
Oromia	**Boset**	Community contributions and targeted subsidies per enrolled household	177	188	195				
		Payments per enrolled households	39	103	128				
		Balance	138	85	67				
Oromia	**Digelu Tijo**	Community contributions and targeted subsidies per enrolled household	191	132	180				
		Payments per enrolled households	16	98	50				
		Balance	174	34	130				
Oromia	**Gimbichu**	Community contributions and targeted subsidies per enrolled household	182	161	165	189	160	186	243
		Payments per enrolled households	N/A	15	66	99	100	107	130
		Balance	N/A	146	99	90	60	80	113
Oromia	**Hidhebu Abote**	Community contributions and targeted subsidies per enrolled household	173	142	183	233			
		Payments per enrolled households	N/A	38	87	85			
		Balance	N/A	104	95	148			
Oromia	**Kuyu**	Community contributions and targeted subsidies per enrolled household	128	202	203	126	174	211	
		Payments per enrolled households	N/A	N/A	89	101	206	156	
		Balance	N/A	N/A	114	24	-33	55	
Oromia	**Siraro**	Community contributions and targeted subsidies per enrolled household	187	178	171				
		Payments per enrolled households	24	75	92				
		Balance	164	103	78				
	Oromia Average	Community contributions and	177	141	186	200	174	204	243

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
	(weighted)	targeted subsidies per enrolled household							
		Payments per enrolled households	33	65	91	92	153	142	130
		Balance	144	75	95	108	21	62	113
SNNP	**Damboya**	Community contributions and targeted subsidies per enrolled household	111	82	86	105	158	256	209
		Payments per enrolled households	77	148	181	293	203	402	130
		Balance	33	-66	-95	-188	-45	-146	79
SNNP	**Damot Woyde**	Community contributions and targeted subsidies per enrolled household	86	61	44	60	61	118	147
		Payments per enrolled households	56	94	109	137	194	186	96
		Balance	30	-33	-64	-77	-133	-68	52
SNNP	**Yirgalem Town**	Community contributions and targeted subsidies per enrolled household	96	142	124	107	114	317	230
		Payments per enrolled households	127	331	307	304	295	554	99
		Balance	-31	-189	-183	-197	-181	-237	131
	SNNP Average (weighted)	Community contributions and targeted subsidies per enrolled household	98	95	85	91	111	230	195
		Payments per enrolled households	87	191	199	245	231	381	108
		Balance	11	-96	-114	-154	-120	-150	87
Tigray	**Ahferom**	Community contributions and targeted subsidies per enrolled household	155	154	153	133	133	212	
		Payments per enrolled households	27	235	261	175	175	193	
		Balance	128	-81	-109	-42	-43	19	
Tigray	**Kilte-Awlaelo**	Community contributions and targeted subsidies per enrolled household	133	150	147	118	147	242	
		Payments per enrolled households	79	156	149	190	203	196	
		Balance	54	-6	-2	-72	-56	46	
Tigray	**Tahtay-Adiyabo**	Community contributions and targeted subsidies per enrolled household	137	130	160	132	144	133	

Region	Woreda	Parameter	Year of operation						
			1	2	3	4	5	6	7
		Payments per enrolled households	115	196	340	258	223	281	
		Balance	22	-66	-180	-126	-80	-148	
	Tigray Average (weighted)	Community contributions and targeted subsidies per enrolled household	142	145	153	128	141	196	
		Payments per enrolled households	74	196	250	208	201	223	
		Balance	68	-51	-97	-80	-59	-28	
	Overall Average (weighted)	Community contributions and targeted subsidies per enrolled household	160	149	158	178	181	206	220
		Payments per enrolled households	43	135	145	175	246	261	200
		Balance	117	14	13	2	-65	-55	20

N/A: Data not available

ANNEX F: DETAILED RESULTS FROM FINANCIAL PROJECTION MODEL FOR EACH REGION

Table F1: Amhara regional estimates of revenue and liabilities, by operational year

Operational year	Estimated total number of enrolled households	Percentage of enrolled households paying premiums	Revenue from Enrolled household premiums (thousands ETB)	Revenue from regional and Woreda government (thousands ETB)	Revenue from federal government (thousands ETB)	Total Revenue (thousands ETB)
Revenue						
1	249,348	80%	23,044	8,692	4,852	36,588
2	280,273	78%	30,421	14,321	16,476	61,218
3	630,095	80%	77,989	15,883	9,518	103,390
4	742,902	84%	110,488	26,795	19,104	156,387
5	719,761	80%	101,803	27,873	12,190	141,866
6	828,071	90%	144,063	19,583	17,193	180,839
7	972,398	83%	186,960	38,209	25,338	250,507
Percentage of all revenue						
1			63%	24%	13%	
2			50%	23%	27%	
3			75%	15%	9%	
4			71%	17%	12%	
5			72%	20%	9%	
6			80%	11%	10%	
7			75%	15%	10%	

Operational year	Estimated total number of enrolled households	Outpatient visits per enrolled household	Inpatient visits per enrolled household	Number of OOP visits per enrolled household
Visits				
1	249,348	0.94	0.01	0.02

Operational year	Estimated total number of enrolled households	Percentage of enrolled households paying premiums	Revenue from Enrolled household premiums (thousands ETB)	Revenue from regional and Woreda government (thousands ETB)	Revenue from federal government (thousands ETB)	Total Revenue (thousands ETB)
2	280,273	3.49	0.04	0.02		
3	630,095	3.81	0.05	0.02		
4	742,902	4.26	0.04	0.04		
5	719,761	6.34	0.07	0.02		
6	828,071	7.02	0.03	0.03		
7	972,398	5.75	0.03	0.07		

Payments per visit	Payment per Outpatient visit	Payment per Inpatient visit	Payment per OOP visit
1	38.40	608.69	153.57
2	35.88	605.86	236.01
3	39.06	704.98	220.15
4	40.05	735.89	268.40
5	39.89	758.40	443.47
6	36.61	951.82	312.08
7	39.47	1,312.02	208.54

Total payments	Outpatient payments (thousands ETB)	Inpatient payments (thousands ETB)	Payment for OOP (thousands ETB)	Total Payments (thousands ETB)	Regional net balance
1	9,011	823	594	10,428	26,160
2	35,112	6,182	1,627	42,921	18,297
3	93,691	22,211	3,011	118,913	(15,523)
4	126,693	22,015	8,223	156,931	(544)
5	182,133	36,400	5,231	223,764	(81,898)
6	212,680	24,674	7,457	244,811	(63,972)
7	220,784	33,280	13,234	267,298	(16,791)

Table F2: Oromia regional estimates of revenue and liabilities, by operational year

Operational year	Estimated total number of enrolled households	Percentage of enrolled households paying premiums	Revenue from community premiums (thousands ETB)	Revenue from regional and Woreda government (thousands ETB)	Revenue from federal government (thousands ETB)	Total Revenue (thousands ETB)
Revenue						
1	145,843	51%	13,538	11,711	1,807	27,056
2	197,028	51%	14,993	13,387	3,009	31,389
3	193,826	45%	15,746	18,193	5,644	39,584
4	242,640	70%	38,587	13,668	5,791	58,046
5	217,496	61%	26,036	10,535	4,110	40,682
6	299,207	70%	43,956	18,099	4,632	66,687
7	301,921	85%	63,553	9,860	7,172	80,585
Percentage of all revenue						
1			50%	43%	7%	
2			48%	43%	10%	
3			40%	46%	14%	
4			66%	24%	10%	
5			64%	26%	10%	
6			66%	27%	7%	
7			79%	12%	9%	

Operational year	Estimated total number of enrolled households	Outpatient visits per enrolled household	Inpatient visits per enrolled household	Number of OOP visits per enrolled household
Visits				
1	145,843	1.25	0.00	0.00
2	197,028	1.21	0.00	0.01
3	193,826	2.04	0.01	0.02
4	242,640	1.62	0.01	0.02
5	217,496	2.54	0.02	0.01
6	299,207	2.34	0.02	-
7	301,921	2.85	0.00	-

Operational year	Estimated total number of enrolled households	Percentage of enrolled households paying premiums	Revenue from community premiums (thousands ETB)	Revenue from regional and Woreda government (thousands ETB)	Revenue from federal government (thousands ETB)	Total Revenue (thousands ETB)

		Payment per Outpatient visit	Payment per Inpatient visit	Payment per OOP visit		
Payments per visit						
1		30.82	314.09	448.09		
2		61.34	375.28	313.89		
3		47.40	416.32	386.52		
4		51.75	378.55	527.23		
5		55.57	308.70	346.35		
6		54.53	342.68	-		
7		44.48	432.35	-		

	Outpatient payments (thousands ETB)	Inpatient payments (thousands ETB)	Payment for OOP (thousands ETB)	Total Payments (thousands ETB)		Regional net balance
Total payments						
1	5,630	85	282	5,997		21,059
2	14,579	299	338	15,216		16,173
3	18,743	773	1,149	20,665		18,919
4	20,376	707	3,109	24,192		33,854
5	30,655	1,035	610	32,300		8,382
6	38,147	1,996	-	40,143		26,544
7	38,298	500	-	38,798		41,787

Table F3: SNNP regional estimates of revenue and liabilities, by operational year

Operational year	Estimated total number of enrolled households	Percentage of enrolled households paying premiums	Revenue from community premiums (thousands ETB)	Revenue from regional and Woreda government (thousands ETB)	Revenue from federal government (thousands ETB)	Total Revenue (thousands ETB)
Revenue						
1	15,762	97%	1,380	116	634	2,130
2	16,164	90%	1,338	252	853	2,443
3	16,659	91%	1,188	299	931	2,418
4	15,828	92%	1,153	1,010	373	2,536
5	16,826	91%	1,580	265	906	2,751
6	14,007	87%	2,258	796	448	3,501
7	16,318	80%	2,192	802	121	3,115
Percentage of all revenue						
1			65%	5%	30%	
2			55%	10%	35%	
3			49%	12%	39%	
4			45%	40%	15%	
5			57%	10%	33%	
6			64%	23%	13%	
7			70%	26%	4%	

Operational year	Estimated total number of enrolled households	Outpatient visits per enrolled household	Inpatient visits per enrolled household	Number of OOP visits per enrolled household
Visits				
1	15,762	2.47	0.02	0
2	16,164	5.28	0.08	0
3	16,659	5.34	0.12	0
4	15,828	6.34	0.05	0
5	16,826	5.64	0.04	0
6	14,007	8.75	0.03	0
7	16,318	5.31	0.02	0

Operational year	Estimated total number of enrolled households	Percentage of enrolled households paying premiums	Revenue from community premiums (thousands ETB)	Revenue from regional and Woreda government (thousands ETB)	Revenue from federal government (thousands ETB)	Total Revenue (thousands ETB)

		Payment per Outpatient visit	Payment per Inpatient visit	Payment per OOP visit		
Payments per visit						
1		31.47	268.37	-		
2		31.01	267.97	-		
3		33.08	284.90	-		
4		37.73	449.01	-		
5		38.67	327.35	-		
6		41.31	390.70	-		
7		21.92	190.69	-		

	Outpatient payments (thousands ETB)	Inpatient payments (thousands ETB)	Payment for OOP (thousands ETB)	Total Payments (thousands ETB)		Regional net balance
Total payments						
1	1,224	103	-	1,329		802
2	2,647	353	-	3,098		(557)
3	2,945	567	-	3,632		(1,094)
4	3,786	338	-	4,163		(1,588)
5	3,667	238	-	3,986		(1,154)
6	5,063	174	-	5,275		(1,737)
7	1,900	78	-	1,978		1,137

Table F4: Tigray regional estimates of revenue and liabilities, by operational year

Operational year	Estimated total number of enrolled households	Percentage of enrolled households paying premiums	Revenue from community premiums (thousands ETB)	Revenue from regional and Woreda government (thousands ETB)	Revenue from federal government (thousands ETB)	Total Revenue (thousands ETB)
Revenue						
1	33,056	72%	3,115	1,604	687	5,406
2	22,034	53%	1,537	1,671	1,606	4,814
3	23,250	56%	1,984	1,596	1,417	4,997
4	26,209	58%	1,970	1,358	414	3,743
5	39,750	69%	3,824	1,900	549	6,273
6	59,070	79%	7,836	3,324	1,204	12,363
Percentage of all revenue						
1				58%	30%	13%
2				32%	35%	33%
3				40%	32%	28%
4				53%	36%	11%
5				61%	30%	9%
6				63%	27%	10%

Operational year	Estimated total number of enrolled households	Outpatient visits per enrolled household	Inpatient visits per enrolled household	Number of OOP visits per enrolled household
Visits				
1	33,056	2.28	0.01	0.00
2	22,034	4.85	0.03	0.03
3	23,250	5.54	0.04	0.02
4	26,209	4.82	0.04	0.02
5	39,750	4.78	0.02	0.02
6	59,070	4.01	0.04	0.01

	Payment per Outpatient visit	Payment per Inpatient visit	Payment per OOP visit
Payments per visit			

Operational year	Estimated total number of enrolled households	Percentage of enrolled households paying premiums	Revenue from community premiums (thousands ETB)	Revenue from regional and Woreda government (thousands ETB)	Revenue from federal government (thousands ETB)	Total Revenue (thousands ETB)
1		34.94	390.97	265.46		
2		39.87	339.42	227.63		
3		44.38	335.87	311.66		
4		46.23	402.80	161.42		
5		47.23	325.47	281.18		
6		43.02	495.21	382.45		

	Outpatient payments (thousands ETB)	Inpatient payments (thousands ETB)	Payment for OOP (thousands ETB)	Total Payments (thousands ETB)		Regional net balance
Total payments						
1	2,634	110	4	2,747		2,659
2	4,259	255	133	4,647		167
3	5,721	305	167	6,193		(1,196)
4	5,843	380	65	6,287		(2,544)
5	8,975	309	193	9,477		(3,204)
6	10,197	1,078	156	11,431		932