

An experiment with community health funds in Afghanistan

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As Afghanistan rebuilds its health system, it faces key challenges in financing health services. To reduce dependence on donor funds, it is important to develop sustainable local financing mechanisms. A second challenge is to reduce high levels of out-of-pocket payments. Community-based health insurance (CBHI) schemes offer the possibility of raising revenues from communities and at the same time providing financial protection. This paper describes the performance of one type of CBHI scheme, the Community Health Fund (CHF), which was piloted for the first time in five provinces of Afghanistan between June 2005 and October 2006.

The performance of the CHF programme demonstrates that complex community-based health financing schemes can be implemented in post-conflict settings like Afghanistan, except in areas of high insecurity. The funds raised from the community, via premiums and user fees, enabled the pilot facilities to overcome temporary shortages of drugs and supplies, and to conduct outreach services via mobile clinics. However, enrolment and cost-recovery were modest. The median enrolment rate for premium-paying households was 6% of eligible households in the catchment areas of the clinics. Cost recovery rates ranged up to 16% of total operating costs and 32% of non-salary operating costs. No evidence of reduced out-of-pocket health expenditures was observed at the community level, though CHF members had markedly higher utilization of health services. The main reasons among non-members for not enrolling were being unaware of the programme; high premiums; and perceived low quality of services at the CHF clinics.

The performance of Afghanistan's CHF was similar to other CHF-type programmes operating at the primary care level internationally. The solution to building local capacity to finance health services lies in a combination of financing sources rather than any single mechanism. In this context, it is critical that international assistance for Afghanistan's health sector continues.

Keywords Community-based health insurance, community financing, health financing

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KEY MESSAGES

- Community-based health financing schemes can be implemented in post-conflict settings like Afghanistan, except in areas of high insecurity.
- Enrolment in the Community Health Fund (CHF) and cost-recovery was modest. The main reasons for not enrolling were being unaware of the programme; high premiums; and perceived low quality of services at the CHF clinics.
- No evidence of reduced out-of-pocket health expenditures was observed at the community level, though CHF members had markedly higher utilization of health services.
- The solution to building local capacity to finance health services lies in a combination of financing sources rather than any single mechanism. It is critical that international assistance for Afghanistan's health sector continues.

Introduction

As Afghanistan rebuilds its health system it faces important challenges in financing health services. As in many post-conflict countries, donor funds provide much needed support for the delivery and expansion of basic health services. However, it is unlikely that current levels of external funding will be available in the long term, making it necessary to develop national capacity to finance health services. A second challenge is to reduce the high out-of-pocket payments for health care experienced by Afghans. High levels of out-of-pocket health expenditures are particularly burdensome for the poor and evidence from other developing countries has shown that catastrophic health spending can push people into poverty. Reducing financial barriers to accessing health services is important for achieving greater utilization of health services and improving population health.

Community-based health insurance (CBHI) schemes offer a potential solution to these problems. They offer the possibility of raising health sector revenues from communities while reducing financial barriers to accessibility and providing financial protection to community members by pooling resources. A diversity of such community financing arrangements exists, ranging from simple pre-payment schemes like community health funds (CHF) to more complex insurance mechanisms (Ekman 2004). Common threads that bind these schemes are a focus on people in the informal sector, pre-payment, pooling of resources to cover the costs of health care and community involvement in scheme management (Devadasan 2006; Ranson 2006). Evidence from various developing countries suggests that CBHI schemes can reduce out-of-pocket spending on health care and contribute towards improved cost recovery (Ekman 2004).

One type of CBHI scheme, the CHF, was piloted for the first time in Afghanistan between 2005 and 2006 by the Ministry of Public Health (MOPH), Islamic Republic of Afghanistan, partner NGOs and Johns Hopkins University. The CHF was piloted to examine its feasibility as part of the national health financing strategy. The pilots sought to understand CHF performance in Afghanistan's context—in particular, how well communities accepted this financing scheme, to what extent the CHF could recover operating costs of primary health facilities and protect households financially against high health expenditures and what their effect on service utilization was. This study presents an evaluation of the CHF programme's performance on certain key parameters: enrolment, cost

recovery, financial protection, service utilization and community perceptions of the programme. To give perspective, comparisons with similar schemes in other countries are made. Findings from this evaluation add to the growing pool of knowledge about the performance and feasibility of CHFs. This is one of the first instances of the CHF being piloted in a post-conflict setting.

Background

After the fall of the Taliban regime at the end of 2001, the new government of Afghanistan was faced with the challenge of rapidly providing basic health services. A set of standardized primary care services, called the Basic Package of Health Services (BPHS) is delivered in most of Afghanistan's 34 provinces by NGOs under contract from the MOPH. In three provinces, service delivery is directly managed by the MOPH. BPHS services are delivered through a network of Basic Health Centres (BHC), Comprehensive Health Centres (CHCs) and district hospitals covering around 82% of the country's population (latest estimate from MOPH). NGOs are responsible for service delivery in all but three provinces.

An examination of the MOPH's budget reveals substantial donor contribution in financing health services. The MOPH's budget is broadly used for running the MOPH and Provincial Health Directorates, making payments to contracted NGOs delivering health services, funding regional and some provincial and district hospitals, and for health services not covered under these programmes. The MOPH's budget is comprised of contributions from both the government's own resources and from donor funds for health. Latest estimates indicate that of the total MOPH budget of \$105M (\$77.84M development and \$27M operational budget) for 2006/07, the donor contribution is around 77% (82% of development and 60% of operational budget). Health services provided at the district hospital level and below are almost entirely funded by donor money. Further, around half the provincial hospitals are donor funded. The above figures highlight the critical dependency on external funds of the public provision of health services.

Households seeking health care usually pay for services since all private facilities charge fees, and most public sector health facilities charged fees until spring 2008. However, fees are higher in the private sector. Findings from recent household surveys have shown that out-of-pocket payments for health care can be considerable. Results from the Afghanistan Health Survey 2006 indicate that almost all individuals who seek care

outside home pay something out-of-pocket, with 500 Afghanis (\$10) being the median amount spent per episode of illness (MOPH 2008). Nationally, the mean annual per capita out-of-pocket expenditure on health was estimated to be 1780 Afghanis (\$36) (MOPH 2008). Smaller studies have found annual out-of-pocket health expenditures of \$50 per capita, representing more than 20% of total household income (HealthNet International 2005). Not surprisingly, distress financing is prevalent; around 36% of households reported borrowing money or selling assets or land to finance health care (MOPH 2008). These findings highlight the high burden of health expenditures faced by Afghans and the need for financing mechanisms which ensure access to health services as well as financial protection from high health expenditures.

The Community Health Fund Pilot Project

The CHF pilots were introduced as part of the Health Financing Pilot (HFP) project, which sought to understand the effectiveness and feasibility of different community financing schemes in Afghanistan (Johns Hopkins University 2008). The CHF pilots were designed to be operational for a year; they commenced in June 2005 and concluded in September 2006. All local stakeholders were informed about the duration of the project before it commenced. They were introduced at select health facilities (BHC or CHC) in five provinces of Afghanistan: Parwan, Saripul, Wardak, Nimroz and Hilmand. BHCs cover a population of 15 000 to 30 000 and CHCs 30 000 to 60 000. The CHF pilot was administered by health facility staff and targeted households living in the catchment areas (90 minutes walking distance from the facility) of the pilot health facilities. The HFP project was approved by the MOPH's ethical review board and the Institutional Review Board of the Johns Hopkins Bloomberg School of Public Health.

Consultations between the MOPH and NGOs providing health services in provinces resulted in the identification of 11 provinces for the introduction of the HFP project. The provincial NGOs and the MOPH purposively selected two of the three health financing interventions—user fees, CHF or free services—for implementation in a given province. The CHF was introduced in the provinces of Parwan, Saripul, Wardak, Nimroz and Hilmand. In each province five pre-selected facilities (BHC or CHC) were randomized to the two chosen interventions (two facilities to each intervention) and a control. Provincial NGOs and the MOPH identified these five health facilities in their province to implement the pilot project based on their readiness to undertake pilot activities in the future. Selection criteria included presence of an accounting system capable of tracking revenues, ability to determine who should be exempted, staff availability for financial management and accounting, availability of staff for necessary training, and capacity of facility to work with the community.

The provinces in which the CHF pilots were introduced were geographically varied. The provinces of Parwan and Wardak are in central Afghanistan and adjoin Kabul province. Saripul is situated in the north of the country, Nimroz is located in the south-west adjoining Iran, and Hilmand is in the south adjoining Pakistan. All the CHF pilots were located at rural

health centres and were frequented by households in the catchment villages. The population covered by these clinics is primarily engaged in agriculture, animal husbandry or small businesses. Households in the pilot catchment areas typically had eight members on average. Most of these households did not have access to electricity, piped water or flush toilets. Only a few households owned assets of high value; in the pilot catchment areas of Parwan and Saripul (Afghanistan), 20% (20%) owned a television, 24% (21%) a cycle, 7% (9%) a motorcycle, 7% (4%) a car and 25% owned sheep.

Subscription to the CHF was voluntary and open to households of the facility catchment area. Membership was on a household basis and covered all services offered at the designated health facility in addition to inpatient care at the nearest district hospital. Premium levels were set by facility staff in consultation with community members and varied with economic status and household size. The annual reference premium was set at 300 Afghanis (equivalent to US\$6) for less poor households with 1–5 members. Fund members were required to pay a small co-payment of 1 Afghani (US\$0.02) when using health services. Drugs were provided free of charge to fund members. Economically vulnerable households, which were identified by community members based on certain criteria, were enrolled free of cost into the programme.

Patients who were not members of the CHF had to pay user fees (Table 2). In all provinces the non-member user fee represented an increase in the cost of a visit. User fees were set at around 50% of the consultation fees charged in the private sector and drugs were charged at 50% of their wholesale cost to the provincial NGO (i.e. the NGO delivering health services in the province). Services free for all people included immunizations, antenatal care, well baby visits, TB-DOTS, family planning, delivery and emergency services. Facilities also had a policy of not denying treatment or drugs to patients who were unable to pay user fees. Funds collected from users had to be used at the health centre and were managed by a committee comprised of community members and health facility staff. By involving community members in managing funds, the CHF pilots sought to increase community participation in running health facilities. Key programme activities are described in Table 1.

The CHF offered the potential of reducing the financial dependency of primary health centres on government funds and providing financial protection to households. By raising funds from communities through membership premiums and user fees from non-members, the CHFs could recover some part of the operating costs of a health facility. Higher cost recovery translates into lesser dependency on external funds for operating the health centre. Further, health centres now had discretionary funds to purchase drugs and supplies and undertake repairs at the clinic. CHFs also offered financial protection to member households by limiting the amount they spent on health care. Member households paying an annual premium were entitled to unlimited use of health services at the pilot clinic and referral hospital at the cost of a nominal copayment of 1 Afghani (US\$0.02); for relatively frequent users this limits health expenditures. Further, poor households were enrolled as members free of cost and their co-payment charges were waived.

Table 1 Key programme activities of the Community Health Fund (CHF) pilot project

Programme activity	Process
Informing the community	In the initial phase of CHF implementation, staff at pilot facilities and community health workers informed catchment communities (90 minutes walking distance from the facility) about the CHF programme, its features and benefits of enrolling. Typically announcements were made at the main mosque of the village. Key members of the village community such as local leaders, mullahs and others were also informed about the programme.
Enumerating catchment area households and identifying the poor	Clinic staff, with the aid of community health workers and village leaders, enumerated households living in the catchment villages. Enumerated households were classified as very poor, poor or less poor on the basis of their socio-economic characteristics. Female-headed households were also identified. The eligibility criteria for these socio-economic categories were explained to village leaders who then assigned the enumerated households to one of these three categories.
Setting premiums and fees	Pilot facility staff and programme officials completed an exercise in which premium and user fee levels could be estimated based on the demographic and socio-economic characteristics of the facility catchment area and current revenues, if any, from user fees. Based on available information on health expenditures in Afghanistan, initial annual premiums recommended to programme officials ranged from 300 to 500 Afghani (Afs.) for less poor households having 1-5 members (at the time of this study \$1 USD = 49 Afs.). This reference premium level could change with household size and socio-economic status. The poorest and female-headed households were enrolled into the programme free of cost. Further, poor households were eligible for reduced premiums.
Enrolment	Households were enrolled in two principal ways. Households classified as very poor were enrolled free of cost during the household enumeration process or shortly afterwards. Non-poor households could enrol at the CHF health facility where premiums were collected and enrolment cards distributed.
Management of funds	At each CHF facility a committee was formed to promote, manage and oversee the CHF. The committee also managed and decided how to use the collected funds. Each committee included nominated members from the facility and community. Revenues earned through cost sharing could be used only for certain prescribed activities, such as the administration of the CHF scheme, quality improvement including the purchase of drugs and supplies, bonuses for health facility staff, community outreach and other community activities. There was a 10% cap on the use of funds for staff bonuses.

Table 2 Community Health Fund (CHF) premium and non-member user fee levels

Province	Annual member premium (Afs.)			Non-member fees					
	Very poor	Poor	Less-poor	Consultation fee (Afs.)		Drug fee (% of wholesale price)		Other fees (Afs.)	
				Before CHF	After CHF	Before CHF	After CHF	Before CHF	After CHF
Parwan	0	150	300	0	10-15	0	50	0	0
Saripul	0	300	300	2	10	40	40-50	5-10 ^a	5-10 ^a
								5 ^b	5 ^b
								20 ^c	20 ^c
Wardak	0	150	300	5	25	0	50	0	5 ^b
Nimroz	0	300	300	0	25	0	50	0	0

Note: Member premiums indicate premiums paid by households having five or less members. In general, premium levels increased with household size.

^aDressing.

^bLab fees.

^cDelivery fees.

The CHF programme was implemented in only four provinces [Parwan, Saripul, Wardak and Nimroz (at one health facility)]. In Wardak, identification of poor households and exemption card distribution could not be completed. The programme could not be implemented at one facility in Nimroz and at both health facilities in Hilmand province. The prevailing insecurity in Hilmand and in parts of Wardak and Nimroz is the main reason for incomplete programme implementation in these areas. In addition, inadequate human resources at the health facilities also resulted in some community outreach activities remaining incomplete. The CHF programme ended in September 2006 at the conclusion of the pilot period. On conclusion, the pilot facilities reverted to the financing scheme (user fees or free services) operational in the pre-pilot period (Table 2).

Data and methods

Data for this study were taken from three sources: reports from routine project monitoring, the health management information system (HMIS), and household surveys of facility catchment areas. These data sources are described below.

HMIS and project monitoring data

All health facilities are required to file monthly HMIS reports with the MOPH. These reports include information on the volume of new and total OPD visits, drug and supply stock outs, immunizations, referrals to and from the facility, morbidity, and the volume of laboratory exams.

Health facilities implementing the CHF pilots submitted various monthly reports on the performance of the pilots.

Information was also collected on a monthly basis on facility operating costs (staff salaries, drugs, supplies and administration), availability of staff, drugs and medical supplies. In addition, supervision reports recorded implementation progress.

Household survey

In mid-2004, a household survey of the pilot catchment area was conducted in all five CHF provinces. This survey was repeated in September 2006 in Parwan and Saripul provinces. Only Parwan and Saripul were sampled in the follow-up survey—for security reasons and their complete implementation of the CHF programme.

In both the baseline and follow-up surveys the same questionnaire and sampling design was used. Households were asked about their demographic characteristics, illness in the past month among any household members, where care was sought, the amount spent on treatment, opinions on the quality of services at the pilot clinic, and information on the household's asset ownership. CHF members were asked about their attitudes towards the programme. Non-members were asked about their reasons for not enrolling.

Households were sampled as follows. Between one and two villages were randomly sampled from villages having 100 or more households and within 90 minutes walking distance of the pilot facility. Within each village, a predetermined number of households were selected (25 in the baseline and 40 in the follow-up survey). Each village was divided into four segments and one segment was randomly chosen. At the central point of the chosen segment one direction was randomly selected. All households lying in the selected direction were numbered and a starting point randomly picked. Households following the random start household were consecutively selected using the nearest neighbour method until the required sample size was achieved. If a household refused to be interviewed it was replaced with the adjacent household. In the 2006 survey, two villages in each catchment community were selected, including those sampled at the baseline.

Parwan and Saripul provinces had two CHF pilot facilities each. At baseline, five catchment villages, two in Parwan and three in Saripul, were sampled. This yielded a total of 166 households of which 66 were in Parwan and 100 in Saripul. In the follow-up, eight villages in the catchment area (four in each province) were sampled. Included in these eight villages are the same five villages sampled in the baseline. This yielded a total of 320 households with 160 each in Parwan and Saripul.

Methods

The performance of the CHF is evaluated from several perspectives including the MOPH, health facilities implementing the CHF pilots and members of the pilot facility catchment community. A quasi-experimental design was used to estimate the impact of the CHF programme health expenditures and service utilization. A one-group pretest-posttest design was used in which the same health facilities and their catchment areas were observed in 2004 and again after the intervention in 2006. In the follow-up some additional catchment villages were included. These additional villages are within the

same catchment perimeter and have similar demographic and socio-economic profiles as the baseline villages. Differences in the outcome of interest between baseline and follow-up were tested for statistical significance using standard tests for significance. No other programme that could have influenced the observed outcomes of interest operated in these facilities or their catchment area during the study period. While control health facilities were included in the larger HFP project, they could not be surveyed for the CHF evaluation.

CHF performance on enrolment and revenues were evaluated by calculating the means (proportions) of the relevant indicators. Where necessary, information from project reports and field visits were used to support the results from the statistical analysis.

For estimating the cost recovery ratio (CRR), average monthly operating costs over the duration of the CHF programme were estimated for BHCs and CHCs in the pilot study based on their reported monthly expenditures on salaries, drugs and administrative costs. A few facilities which did not report these expenditures regularly were excluded from the analysis. Separate estimates were made for BHCs and CHCs. The median estimate of each facility type was taken to represent the operating cost of that facility type. Cost estimates were increased by 20% to account for administrative costs incurred by the provincial NGO for monitoring and managing the health facility (Newbrander *et al.* 2003).

The CHF pilots in most provinces contained a mix of BHCs and CHCs. While in principle there is a clear differentiation between these types of facilities in terms of staffing, coverage and services provided (Ministry of Public Health 2005), in practical terms it is difficult to differentiate between them (Newbrander *et al.* 2003). For example, BHCs are not required to have a medical doctor on their staff but many do due to community needs. Therefore the results presented do not differentiate between these two facility types.

Performance of the Community Health Fund

Enrolment and service utilization

Approximately one year after the CHF programme started, total membership ranged between 8% and 47% of the catchment area households, with the median being 15% (Table 3). This includes households who paid to become members and those who were enrolled free of charge due to their poor socio-economic status. Enrolment of premium-paying households took place at the pilot health facilities and ranged from 1% to 38% of the catchment area households, with the median being 6%. These findings highlight two points of note. First, the majority of the catchment households did not join the CHF programme. Secondly, paid membership was much lower than total membership, and in some cases (e.g. Parwan and Saripul) the majority of CHF members were enrolled free.

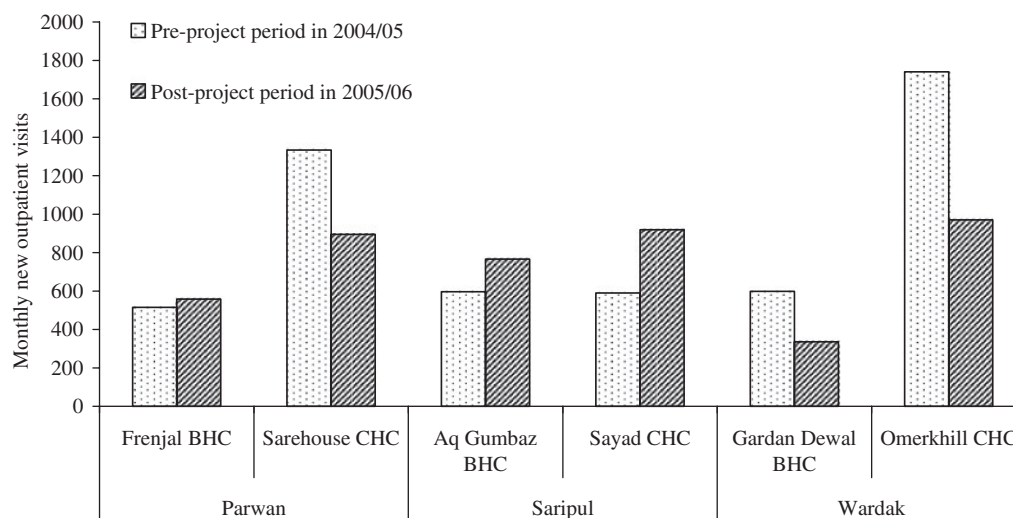
CHF members used health services more frequently than non-members. CHF member visits as a proportion of total curative care visits ranges from 29% to 90% across the four provinces (Table 3). In all cases, the share of monthly visits made by members is disproportionately high compared with

Table 3 Enrolment in the Community Health Fund and care seeking

Province	Enrolment		CHF member share of outpatient curative care visits (%)	Care seeking			
	All member households (%)	Premium paying member households (%)		Seek treatment outside home when sick (%)		Seek treatment at public health facility when sick (%)	
				2004	2006	2004	2006
Parwan	14	1	29	86	92	72	61*
Saripul	15	6	35	92	92	59	79*
Wardak	8	5	37	–	–	–	–
Nimroz	47	38	90	–	–	–	–

Note: Treatment seeking information is from catchment area household survey. Base is those who sought treatment. Sample size (individuals) for Parwan is 96 in 2004 and 277 in 2006, and for Saripul is 71 in 2004 and 263 in 2006. Endline survey was not carried out in Wardak and Nimroz.

*Significant at 5% level.

**Figure 1** Average monthly new outpatient visits at CHF pilot facilities pre and post projects

enrolment rates. For example, in Saripul 15% of the catchment households who are members were responsible for 35% of curative care visits to the facility. In Nimroz, 47% of the catchment households who were members were responsible for 90% of the curative care visits.

Trends in outpatient visits are examined using two separate sources of data: HMIS from health facilities (Figure 1) and catchment household surveys (Table 3). Figure 1 compares average new outpatient visits 6 months after the start of the CHF programme with the same time period before the project started. HMIS visit data for Nimroz was not available. In Parwan and Wardak, visit levels declined in the post-CHF period at most CHF clinics. In Saripul province, visits increased in both the CHF clinics. Table 3 shows trends in health care utilization among those who reported an illness in the month before the survey and sought care outside of their home. It is based on the household survey conducted in the CHF catchment communities in Parwan and Saripul provinces. In Parwan province the proportion of sick patients seeking care outside their home increased from 86% in 2004 to 92% in 2006. In Saripul province, the proportion remained the same between the two years. However, the proportion of

sick patients seeking care at a public health facility (CHF pilot facility or district hospital) declined in Parwan from 72% in 2004 to 61% in 2006. In Saripul province, the corresponding proportion increases from 59% in 2004 to 79% in 2006. Overall, both the HMIS and household survey data tell a consistent story about service utilization trends.

The CHF pilots were introduced in an environment of increasing service utilization at health facilities across Afghanistan as health services were strengthened and expanded. Given the generally low membership levels in the CHF facility catchment area, the majority of the catchment population was exposed to higher user fees after the CHF programme started. This higher price is expected to reduce demand for outpatient care, particularly at pilot facilities in Parwan and Wardak where fees increased substantially (Table 2). In contrast, there was only a slight increase in user fees in Saripul province after the CHF was introduced. The change in the price of outpatient visits appears to be associated with the trends in outpatient visits observed at the CHF facilities. It is important to note that the trends shown in Figure 1 and Table 3 cannot be solely attributed to the introduction of the CHF scheme. Factors other than those

Table 4 Revenue, cost recovery and out-of-pocket health expenditures among catchment households

Province	Average monthly revenue per facility (Afs.)	Premium share of monthly revenue (%)	Cost recovery ratio (CRR) (%)		Average health expenditures in past month (Afs.)		Average health expenditures in past month among public facility users (Afs.)	
			All costs	Non-salary costs	2004	2006	2004	2006
			Parwan	8036	7	6	12	206
Saripul	16 083	28	13	26	568	573	235	211
Wardak	16 097	13	11	22	–	–	–	–
Nimroz	15 294	85	16	32	–	–	–	–

Note: Base for expenditure estimates are those who were sick and sought treatment. Sample size (individuals) for Parwan is 96 in 2004 and 277 in 2006, and for Saripul is 71 in 2004 and 261 in 2006. Endline survey was not carried out in Wardak and Nimroz.

*Significant at 5% level.

US\$1 = 49 Afs.

associated with the CHF scheme could be responsible for these trends (e.g. staffing levels).

Revenue generation and cost recovery

Table 4 shows the average monthly revenues generated at the CHF facilities in the four provinces where the CHF programme was active. Average monthly revenue (premium plus user fees) ranged from 8036 Afghanis (\$161) to 16 097 Afghanis (\$322), the median being 15 589 Afghanis (\$320). The contribution of membership premiums ranged from 7% to 85% (median 21%) of monthly revenues, with the remainder coming from user fees. As expected, provinces with higher enrolment rates have higher monthly revenues from premiums. Typically, the premium share is well below half the monthly revenue, indicating that income from user fees was the principal contributor to facility revenues.

The cost recovery ratio (CRR) indicates the proportion of monthly operating costs which were recovered through cost sharing (premiums and user fees) (Table 4). Average monthly operating costs over the duration of the CHF programme were estimated for the project BHCs and CHCs. The estimates for CHCs were cross-checked with an earlier study (Newbrander *et al.* 2003) and were found to be remarkably close (Johns Hopkins University 2007). Two sets of CRRs are presented in Table 4. The first is based on total operating costs (salaries, drugs and administrative costs) and the second is based on non-salary costs (drugs and administrative costs). Based on available information, salaries account for approximately half the operating costs of health facilities in Afghanistan.

The estimated CRR ranges from 6% to 16%, with the median being 12%. This indicates that, at most, 16% of the clinics' operating costs were recovered. CRR of non-salary costs are double those of the CRR based on all costs since salaries were estimated to account for half the operating costs. The estimated CRR based on non-salary costs ranged from 12% to 32%, with a median of 24%.

Health expenditures and financial protection

In assessing financial protection, the effect of the CHF programme on out-of-pocket health expenditures in the catchment community is examined (Ekman 2004). Table 4 presents average out-of-pocket health expenditures in the previous 1 month among individuals living in the CHF facility catchment

area and seeking treatment outside their homes. At the baseline in 2004, average out-of-pocket health expenditures were 206 and 568 Afghanis in Parwan and Saripul, respectively. At this time health services were free at the pilot CHF facilities in Parwan while cost-sharing was prevalent in Saripul (Table 2) and accounts for the large difference in health expenditures between these two provinces at the baseline. In 2006, at the time of the follow-up survey, health expenditures were 942 Afghanis in Parwan and 573 Afghanis in Saripul. Between 2004 and 2006, health expenditures significantly increased in Parwan while they generally remained the same in Saripul. Health expenditures among those who sought treatment at any public sector health facility follow a similar trend.

The substantial increase in health expenditures in Parwan between 2004 and 2006 is not unexpected since services were free at the CHF facility in 2004. In the period after the CHF programme was introduced, a low membership base subjected the majority of users to user fees, resulting in higher out-of-pocket expenditures. In Saripul, the cost of a visit essentially remained the same before and after the CHF programme (for non-members), which explains the similar health expenditure levels before and after the programme.

Utilization of cost sharing revenues

The capacity of clinics to spend earned revenues varied substantially. In Parwan 82%, in Saripul 89%, in Wardak 21% and in Nimroz 32% of the revenues earned were spent. In all provinces the majority of the revenues were spent on the facility. In Parwan 62%, in Saripul 51%, in Wardak 68% and in Nimroz 91% of total expenditures were spent on quality improvement at the facility. This includes spending on items such as drugs, supplies, incentives to staff, household items for the facility, repair of vehicles and maintenance of the facility. For example, short-term drug shortages were overcome by using CHF revenues to purchase drugs from the market. There is no clear pattern in expenditures on community and administrative costs across the provinces. In Parwan 15%, in Saripul 43%, in Wardak 3% and in Nimroz 2% of total expenditures were spent on the community. Expenditures on the community include items such as transportation cost for referred patients, spending on CHF committee meetings, and incentives to community health workers and households survey teams. Administrative expenditures include spending

on office supplies for the facility. In Parwan 23%, in Saripul 6%, in Wardak 29% and in Nimroz 7% of total expenditures were spent on administrative costs related to the CHF.

Community perceptions about the CHF programme

In the catchment area community survey conducted in Parwan and Saripul, households were asked about their perceptions about the CHF programme. An overwhelming majority of paid members (100% in Parwan and 91% in Saripul) affirmed that membership was worth the cost. Support for membership renewal was also high among paid members; 90% in Parwan and 73% in Saripul.

Given the modest enrolment at the CHF facilities, it is important to know the reasons why households did not enrol. Table 5 presents results from the catchment area household survey carried out in Parwan and Saripul province where non-member households were asked about their reasons for not enrolling in the CHF programme. High CHF premiums, being unaware of the CHF programme and low perceived service quality (in terms of lack of drugs, lack of faith in the resident doctor and generally bad service quality) at CHF clinics were among the top three reasons why households did not enrol.

The major reasons for not enrolling differ somewhat between the two provinces. In Parwan, poor service quality at the CHF facility, not being aware of the CHF programme, and high CHF premium were the top three reasons for not enrolling. In Saripul, high CHF premium, not being aware of the CHF programme, poor service quality at the CHF clinic and a preference for pay-for-service were the major reasons for not enrolling. In both provinces, other important reasons for non-enrolment included seldom use of the CHF facility, a preference to pay when sick, and the timing of the enrolment process being inconvenient.

Discussion

This study sought to understand the feasibility and performance of CHFs in Afghanistan's context. While the CHF has been tried in other countries, Afghanistan's context posed some new challenges. While conflict has reduced considerably since the ousting of the Taliban in late 2001, insurgency continues in several regions of the country, including some areas where the CHF was introduced. Implementing community financing programmes when health workers are under threat can be particularly challenging. Despite these challenges, functional CHF programmes were established, except in areas where ensuring security of health workers was difficult. The many years of conflict in Afghanistan has also depleted the country's health workforce. A substantial number of health workers left the country and there is limited capacity to upgrade skills or train new workers. This problem is further exacerbated by the concentration of existing health workers in urban areas. These human resource constraints make it particularly challenging to implement community-based programmes which require substantial human resources. The lack of prior experience within the country of implementing community insurance schemes required intensive and repeated training of

Table 5 Reasons for not enrolling in the CHF in Parwan and Saripul province

Reasons for not enrolling in the CHF programme	Province		Total (%)
	Parwan (%)	Saripul (%)	
Poor service quality at CHF clinic	35	14	26
Not aware of CHF programme	32	27	30
CHF premium too high	29	56	42
Seldom use CHF clinic	12	10	11
Prefer to pay when sick	12	14	13
Time of enrolment not convenient	9	10	9
Household head not present at enrolment	3	1	2
Did not want to enrol	2	1	1
Sample (households)	119	104	223

Note: Percentages do not add to 100% because these responses are based on open-ended questions in which households offered multiple reasons.

participating health workers to create a good understanding of the programme and its functioning.

Enrolment and its many determinants

A key performance issue in CBHI programmes is the ability to attract and retain members. A healthy membership base indicates that there is widespread acceptance of the programme by the community. Further, high enrolment rates enhance the programme's ability to pool resources, share risks among members, raise revenues, recover costs, and increase access to health services by lowering financial barriers. Among the CHF pilot clinics in Afghanistan, the median paid membership was 6% of the catchment population. This is similar to what has been found in many CHF programmes operating at primary and secondary level (non-hospital) clinics internationally. For example, the CHF programme in Hanang district of Tanzania reported enrolment rates of 2–6% of facility catchment households (Chee *et al.* 2002). A more recent study of Tanzania's CHF programme found enrolment rates to be 10% of the target population (Kamuzora and Gilson 2007). A scheme in India which included CHF type programmes in clinics and hospitals had catchment area enrolment rates of 12% (Devasasan *et al.* 2006). A pre-payment pilot scheme in Rwanda reported district level membership rates in 52 schemes ranging from 0.9 to 55% with the median being 6% (Schneider *et al.* 2001).

There are several factors which contributed to the modest enrolment rates observed in Afghanistan's CHF experiment. The most common reason given for not enrolling in the programme was that premiums were high (Table 5). While premium levels were fixed by facility staff and community representatives, for many households the 300 Afghani annual premium did not present an adequate financial incentive to enrol. Information from facility monitoring data indicates that at the CHF facilities, the average price (consultation and drugs) for a curative care visit paid by non-members ranged from 16 to 36 Afghani, with a mean of 25 Afghani. Further, households living in clinic catchment areas make on average one visit

a month (median estimate) to a health provider outside their home. So a household can expect to spend between 200 and 432 Afghanis (300 Afghanis on average) per year if it chooses not to become a member and confines its health care needs to the CHF facility (Johns Hopkins University 2006). The 300 Afghanis annual premium for non-poor households falls well within what households would expect to spend on health care if they did not join the programme. To encourage enrolment, future CHF programmes would do well to set the premium at levels which offer substantial financial incentives to households.

Active and continuous engagement of programme implementers with community members is important for higher enrolment. A major reason why many households did not enrol was a lack of awareness about the CHF programme (Table 5), highlighting the importance of community mobilization. All catchment communities were visited by clinic staff and health workers to inform local leaders and to make announcements in the village mosque during Friday prayers. However, it is likely that much of this information did not spread to a wider audience, preventing the larger community from having a fuller understanding of the programme. Further, this exercise was carried out only at the beginning of the programme. Secondly, enrolling households at the clinic instead of in their villages also constrained CHF enrolment (Table 1). It rendered the enrolment process passive. A more active enrolment campaign involving house visits would likely have yielded a larger membership base.

Perceptions about the quality of services are another important determinant of enrolment (Kamuzora and Gilson 2007). One of the major reasons given by non-members for not enrolling was that they felt the service quality at the CHF clinic was not good (Table 5), at least compared with what they were expected to pay for it. Among the quality issues raised by non-members was a lack of trust in the doctor's skills, lack of drugs and generally poor service quality. While CHF clinics invested the majority of their revenues in improving quality, this had little influence on membership since the enrolment drive was conducted earlier on in the programme. For people to make a long-term investment in their association with a health facility, the latter needs to offer quality services and undertake activities which build trust with the community.

The CHF pilot in Nimroz outperformed all others in terms of membership and the reasons for this lie in the conditions which created trust in the programme. Two independent factors are responsible for this. First, project officials in Nimroz invested a lot of effort to engage with households. Community mobilization involved repeated announcements about the CHF programme at village mosques and putting up posters at important public buildings. Further, enrolment was carried out at the village level and at the health facility. A second factor is Nimroz's proximity to the Iranian border, particularly Chakhansur district where the CHF facility is located. People living in the clinic catchment area frequently cross the border for work and have been exposed to insurance programmes in Iran as refugees or workers. This experience had a positive influence on the acceptability of the CHF programme in Nimroz.

The incentive environment in which individuals concerned with implementing the CHF programme operated also influenced enrolment levels. The national focus on increasing coverage of health services kept programme implementers in the provincial NGOs and pilot health facilities preoccupied with increasing outpatient visits at the CHF clinics. This preoccupation resulted in less attention being given to increasing enrolment in the CHF. Staff at the pilot facilities showed much initiative in altering the level of user fees for non-members when they felt patient volumes were falling. However, the same initiative was not shown towards increasing membership by lowering premiums or engaging more intensively with communities. For a programme like the CHF to be successful, it is essential that those involved in implementing it are committed to its goals and have a strong sense of programme ownership.

Cost recovery, out-of-pocket spending and the use of health services

Across all study sites, the CHF programme was able to recover a modest fraction (12%) of the clinic's total operating costs though it recovered up to 24% of a clinic's non-salary operating costs. This suggests that the CHF programme can be an important instrument for raising revenues from communities. Further, revenues raised by the CHF made discretionary funds available to clinics, giving them a degree of financial independence. An important benefit of this was that the clinics were able to make small investments in improving service quality. For example, short-term shortages of drugs were overcome by purchasing them from the market using CHF revenues.

The cost recovery performance of the CHF pilots is typical of, and in some instances much better than, what has been found internationally. For example, the CHF programme from Tanzania reported that 8% of the district health budget was recovered; 2% from premiums, 6% from user fees (Chee *et al.* 2002). The CHF type scheme from Rwanda recovered between 6 and 9% of the district health budget (Diop *et al.* 2000). While these estimates may not be strictly comparable with findings from Afghanistan due to the different cost elements that are included in the denominator (i.e. the operating cost) and the level at which costs are estimated (facility versus district), nevertheless these comparisons offer an idea of the extent to which operating costs are recoverable.

The introduction of the CHF programme increased the price of outpatient visits for the majority of households living in the pilot catchment areas due to a combination of higher user fees for non-members and modest enrolment levels. With enrolment in the CHF programme remaining modest, cost recovery was largely financed through user fees from non-members. The moderate success of the CHF in recovering health facility operating costs through community financing is tempered by the effect this had on household health expenditures and utilization of outpatient services at the pilot clinics. Average out-of-pocket health expenditures among catchment households did not decline in any of the pilot catchment areas after the CHF was introduced. In areas, such as Parwan, which experienced a relatively high increase in non-member user fees, average household health expenditures

increased substantially. Further, where there was a relatively large increase in the price of outpatient care (e.g. Parwan and Wardak) visit volumes at CHF pilot facilities declined. These declines in visits occurred in an environment of growing demand for health services due to scaling-up of health facilities and improved quality of care in the pilot provinces and throughout Afghanistan more generally. Utilization of health services is generally low in Afghanistan. The government has put much effort and resources into expanding the coverage and improving the quality of primary health services so that utilization increases. It is critical that health financing strategies adopted in Afghanistan strengthen this achievement and this requires balancing the need for raising revenues from communities with the negative effect this has on service utilization.

The experience of CHF type programmes in other countries also indicates a mixed effect on service utilization. For example, a CHF type programme in Niger in which the entire district was enrolled through an annual tax experienced substantial increases in service utilization (Diop *et al.* 1995). Evidence from CHF schemes where enrolment was voluntary appears to be less promising in terms of service utilization. The CHF programme in Tanzania indicates that the overall level of curative care visits declined at all the CHF health centres in the post-programme period (Chee *et al.* 2002). The CHF experience in Rwanda is slightly more promising, with the majority of sampled health centres being able to maintain their pre-programme levels of utilization (Diop *et al.* 2000).

There is indirect evidence that the CHF programme might have limited health expenditures of members. The greater share of outpatient visits attributed to CHF members suggests that CHF membership conferred greater accessibility to health services. Higher utilization of health services by members is likely due to the lowering of financial costs of a visit, which, depending on the frequency of visits made, could result in their health expenditures being lower than they would ordinarily have been (Preker *et al.* 2002; Ekman 2004). Higher use by members might be an example of moral hazard since the financial cost of a visit was substantially lower for members. Another explanation for higher use among members is adverse selection; households with sickly members who frequently use the health facility would be more inclined to join the programme. The risk of adverse selection—less healthy households affiliating with the programme knowing that they would frequently use services—was somewhat reduced by enrolment on a household basis rather than an individual basis.

Higher health service use among CHF members compared with non-members has been documented in similar programmes elsewhere (Moens 1990; Noterman 1995; Diop *et al.* 2000; Chee *et al.* 2002). In Rwanda, for example, utilization of health services by CHF members was five times that of non-members (Diop *et al.* 2000; Schneider *et al.* 2001).

Increasing user fees to encourage enrolment in the CHF can raise ethical concerns given the international evidence on the negative effect of user fees on service utilization, a finding which is corroborated in the CHF experience. The CHF pilot itself had several safeguards to protect the vulnerable and these have been discussed earlier. Further, fee levels were set by facility staff in consultation with community members and

in several instances they were revised downwards when the fees were felt to be high. The decline in visits in the presence of increased user fees is concerning, but not unexpected, and was an important reason for limiting the CHF experiment to a year. Recognizing this, the MOPH recently stopped user fees from being charged at primary health centres. Through these pilots, much information has been gained about the extent to which health services can be financed through community financing and the potential positive and negative effects of such strategies. Nevertheless, declines in service utilization are a concern and this finding is important for planning Afghanistan's future health financing policy.

The need for further experimenting

The one year for which the CHF pilots functioned provides a limited perspective on its potential and performance. This short duration prevented active experimentation with different strategies to increase membership and revenues and fine tune the programme. It is quite likely that this type of experimentation could improve programme performance. The reasons behind the modest enrolment levels discussed earlier suggest ways in which enrolment can be boosted. These include setting premium levels so that there is an adequate financial incentive for households to join, providing lower premiums or other financial incentives to households living away from the CHF clinic, carrying out intensive community mobilization before and periodically during the programme, and enrolling households at the community level.

Further, comparisons of the performance of CHF pilots with similar programmes internationally should be viewed with caution because the latter have been operational for longer periods and have achieved a greater degree of stability and maturity. Implementing CHF type schemes for short periods of time also has implications on the trust communities place in them. Policy changes such as raising fees or providing free services to economically poor households for short periods can seem arbitrary and create negative public opinion about the programme and the health facility.

The CHF programme in Afghanistan managed to raise revenues from communities, achieve moderate cost recovery, and offered primary health care clinics a degree of financial self-sufficiency within the short duration it was active. However, enrolment in the scheme was modest, the CHF did not reduce health expenditures at the community level, though it might have done so for CHF members, and in some instances was associated with declines in service utilization. However, the short duration of the programme allows only limited conclusions to be drawn on its long-term feasibility or performance. The solution to building national capacity to finance health services seems to lie in a combination of financing sources such as public taxation, community financing and other sources, rather than any single mechanism. In all cases, it is critical that the financing strategy(s) adopted do not reverse the gains made in expanding the use of health services. Since the government's capacity to raise tax revenues requires further strengthening and community financing can only make a limited contribution, the findings of this study support the need for continued international financial support for Afghanistan's health sector.

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References

- Bennett S. 2004. The role of community-based health insurance with the health care financing system: a framework for analysis. *Health Policy and Planning* **19**: 147–58.
- Chee G, Smith K, Kapinga A. 2002. *Assessment of the Community Health Fund in Hanang District, Tanzania*. Bethesda, MD: Abt Associates, Partnership for Health Reform.
- Devadasan N, Ranson K, Van Damme W, Acharya A, Criel B. 2006. The landscape of community health insurance in India: An overview based on 10 case studies. *Health Policy* **78**: 224–34.
- Diop F, Yazbeck A, Bitran R. 1995. The impact of alternative cost recovery schemes on access and equity in Niger. *Health Policy and Planning* **10**: 223–40.
- Diop F, Schneider P, Butera D. 2000. Summary of results: Prepayment schemes in the Rwandan Districts of Byumba, Kabgayi, and Kabutare. *Technical Report 59*. Bethesda, MD: Abt Associates, Partnership for Health Reform.
- Ekman B. 2004. Community-based health insurance in low-income countries: a systematic review of the evidence. *Health Policy and Planning* **19**: 249–70.
- Filmer D, Pritchett LH. 2001. Estimating wealth effects without expenditure data—or tears: an application to educational enrollments in States of India. *Demography* **38**: 115–32.
- HealthNet International. 2005. Health Financing Report. HealthNet International, Afghanistan.
- Johns Hopkins University. 2006. Health seeking behavior, health expenditures, and cost sharing practices in Afghanistan. Johns Hopkins University Third-Party Evaluation Team, Kabul, Afghanistan. Unpublished report.
- Johns Hopkins University. 2007. An experiment with Community Health Funds in Afghanistan. Johns Hopkins University Third-Party Evaluation Team, Kabul, Afghanistan. Unpublished report.
- Johns Hopkins University. 2008. Final evaluation report on health financing pilots: the effects of user fees vs. free services on primary care. Johns Hopkins University Third-Party Evaluation Team, Kabul, Afghanistan. Unpublished report.
- Kamuzora P, Gilson L. 2007. Factors influencing implementation of the Community Health Fund in Tanzania. *Health Policy and Planning* **22**: 95–102.
- Ministry of Public Health. 2005. *A Basic Package of Health Services for Afghanistan, 2005/1384*. Kabul: Ministry of Public Health, Islamic Republic of Afghanistan.
- Ministry of Public Health. 2008. Afghanistan Health Survey 2006. Kabul: Ministry of Public Health, Islamic Republic of Afghanistan, Johns Hopkins Bloomberg School of Public Health and Indian Institute of Health Management Research.
- Moens F. 1990. Design, implementation, and evaluation of a community financing scheme for hospital care in developing countries: a pre-paid health plan in the Bwamanda health zone, Zaire. *Social Science and Medicine* **30**: 1319–27.
- Newbrander W, Yoder R, Fishstein P *et al.* 2003. *Costing of the Basic Package of Health Services in Afghanistan*. Kabul: Management Sciences for Health, Afghanistan.
- Noterman J, Criel B, Kegels G, Isu K. 1995. A prepayment scheme for hospital care in the Masisi district in Zaire: A critical evaluation. *Social Science and Medicine* **7**: 919–30.
- Preker AS, Carrin G, Dror D *et al.* 2002. Effectiveness of community health financing in meeting the cost of illness. *Bulletin of the World Health Organization* **80**: 143–50.
- Ranson MK, Sinha T, Chatterjee M *et al.* 2006. Making health insurance work for the poor: Learning from the Self-Employed Women's Association's (SEWA) community-based health insurance scheme in India. *Social Science and Medicine* **62**: 707–20.
- Schneider P, Diop F, Leighton C. 2001. Pilot testing prepayment for health services in Rwanda: results and recommendations for policy directions and implementation. *Technical Report 66*. Bethesda, MD: Abt Associates, Partnership for Health Reform.