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Improving access to hospital care for the poor: comparative analysis of four health equity funds in Cambodia

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There is a large body of evidence that user fees in the health sector create exclusion. Health equity funds attempt to improve access to health care services for the poorest by paying the provider on their behalf.

This paper reviews four hospital-based health equity funds in Cambodia and draws lessons for future operations. It investigates the practical questions of 'who should do what and how'. It presents, in a comparative framework, similarities and differences in objectives, the actors involved, design aspects and functional modalities between the health equity funds. The results of this review are presented along the lines of identification, hospitalization rates and relative costs.

The four schemes had a positive impact on the volume of utilization of hospital services by the poorest patients. They now account for 7 to 52% of total hospital use. The utilization of hospitals by paying patients has remained constant in the same period.

The comparative review shows that a range of operational arrangements may be adopted to achieve the health equity fund objectives. Our study identifies essential design aspects, and leaves different options open for others.

Keywords User fees, poverty, access, waiver, utilization, health services

KEY MESSAGES

- The health equity fund (HEF) model is a pro-poor health financing policy, compatible with user fees. It appears superior to traditional waiver systems in terms of health services utilization by targeted groups.
- Design aspects essential to the model's performance are: the existence of donor funding, the presence of a driving agent, a clear separation of roles, appropriate identification techniques and a holistic consideration of the different barriers to health service utilization.
- The comparative framework may be a useful tool for the design, operation or evaluation of similar strategies in other contexts. Early adoption of a common documentation strategy would facilitate and complement generation of evidence about the comparative performance of the schemes.

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Introduction

In many developing countries, user fees have been promoted as a strategy to generate resources for public health facilities. At a time of tight budget constraints, it was hoped that fee revenues would finance quality improvements, such as improved drug availability, staff motivation and running costs. Although fees showed positive results when combined with effective quality improvement (Litvack and Bodart 1993), they also increased the financial barrier to access to health care services; in many countries, they negatively impacted utilization (Creese 1991; Palmer *et al*. 2004).

As an accompanying measure to the introduction of user fees, many governments decreed that poor patients should be exempted from fees at public health facilities. Experience has shown that such exemption by decree was highly ineffective (Willis and Leighton 1995; Gilson 1997; Stierle *et al*. 1999). In fact, it resulted in non-paying patients becoming a financial loss for the health facilities. Moreover, exemption from user fee payments may be an insufficient measure. Other participation costs, such as transportation costs and loss of daily income, can be major obstacles for poor households struggling for their living. Moreover, public sector salaries often do not allow the health staff a decent living. They then tend to complement their income through coping mechanisms, including informal fees (Ferrinho and Van Lerberghe 2000; Ensor 2004). The poor are particularly vulnerable to such practices.

As a result of this limited access to public health providers, many poor households are pushed into sub-optimal health seeking behaviours such as foregoing treatment or using unregulated private facilities (Russell 1996). These health seeking behaviours may drive poor households into debt, jeopardizing their future well-being (Wilkes *et al*. 1998). This initiates a vicious circle in which poverty not only brings ill-health, but ill-health also tends to worsen poverty (Whitehead *et al*. 2001; Wagstaff 2002; Meessen *et al*. 2003). The final outcome can be catastrophic, both in terms of health and wealth (Ranson 2002; Xu *et al*. 2003).

This very unsatisfactory situation must be tackled. Two main routes have been proposed to governments willing to restore equity in their public health systems: (1) the removal of user fees, and (2) the establishment of an accurate and effective waiver system for the poor combined with the upholding of user fees (Meessen *et al*. 2006). This article relates to the second route.

The idea of targeting services to the poor is not specific to the health sector. Experiences in targeting abound all around the world in various sectors with different benefits, but the central issues remain the same: how to make sure that (1) the resources go to as many of the poor as possible ('coverage') and not to the non-poor (no 'leakage'), and (2) the assistance really fits the specific needs of the poor and leads to a significant outcome.

A large body of scientific literature attempts to assess how various targeted interventions have achieved these two goals, often with a bias towards the distributive question (van de Walle and Nead 1995; Newbrander *et al*. 2000; Coady *et al*. 2004). Several experts have expressed a similar frustration: many studies document the performance of the programme in reaching the poor, but too few document the exact determinants of this performance. In their cross-sector review of programmes targeting the poorest, Coady *et al*. (2004) are very clear in their conclusion: 'we need further work that deals with issues of implementation and cost effectiveness. Program managers need to be able to know more about the details of what was done elsewhere, why the choices were made, how they worked out, and what circumstances affected the outcomes'. Even more recently, Hanson *et al*. (in press) express the same frustration with the targeting literature in the health sector: 'most studies in the literature focus on measuring targeting outcomes . . . and few studies document the critical ''how and why'' issues . . .'. The objective of this paper is to contribute to this knowledge with respect to the recent experiences of health equity funds in Cambodia.

Health equity fund strategies have been developed in Cambodia in an attempt to improve access to health care services for the poorest by paying the provider on their behalf (Van Damme *et al*. 2001; Crossland and Conway 2002; Bitran *et al*. 2003; Hardeman *et al*. 2004; Jacobs and Price 2006). The design of the strategy rests on two principles: (1) a specific fund is allocated to compensate selected health facilities for the services provided; and (2) management of the fund is entrusted to a purchasing body that is independent of the health facility. This body—the health equity fund operator—fulfils the functions of targeting. It is in charge of identifying eligible patients and tailoring the services to their needs. These services may include participation costs faced by patients that are not related to the health provider (such as transportation). The ambition is to remove, as much as possible, the multiple barriers faced by the poor.

In this journal, a case study by Hardeman *et al*. (2004) has presented a way to articulate these functions in Sotnikum, Cambodia. The decentralized organization of the Cambodian health system favoured the subsequent development of a variety of other models in the country. They illustrate the diversity of operational arrangements, both in terms of design and implementation. This now offers a good opportunity to draw lessons for policy development and harmonization. To what extent are these schemes different? Can one draw some common determinants of performance? What could be generalized or should not be generalized in terms of design? These questions are highly debated today in Cambodia in preparation for the national scaling-up of the strategy (Ministry of Health *et al*. 2006a). We believe that they are also relevant in other countries, for policy makers, agencies and programme managers who are considering developing similar strategies. In this paper, we approach these questions through a review of four ongoing health equity fund experiences in Cambodia. For that purpose, we propose an analytical framework that helps capture the 'who should do what, and how?' questions.

In the next section of the paper, we give the general context of the health sector in Cambodia. Secondly, the methods and study sites of our comparative study are presented. In the third section, we quickly make a case for an analytical framework. The fourth section provides our results. We conclude the paper with a discussion of the main findings, including their policy relevance.

Context

Cambodian society is still recovering from years of terror under the Khmer Rouge regime in the 1970s and from civil war until the early 1990s. From 1975 to 1979, the Khmer Rouge closed all health facilities and killed a large part of the medical staff. Attempts to rehabilitate the health system did not provide major improvement until stabilization of the country in 1997.

In 1996, the Health Coverage Plan provided the first significant development in the health sector, with a new mapping of health districts in the country. Each health district covers a population of 100 000 to 200 000 inhabitants. It consists of a network of health centres that deliver a basic package of health care services for 10 000 to 12 000 inhabitants. A complementary package of activities is entrusted to a District Referral Hospital. A district office co-ordinates and supervises all activities.

For many years, the government has been supporting its health facilities, through the payment of salaries, the provision of drugs and medical equipment, and partial financing of the running costs. Yet, this support was a bit erratic and insufficient. In order to tackle this constraint, user fees were established in 1997 by the National Charter on Health Financing. According to the first national guidelines, 49% of fee revenue could be devoted to salary supplements, 50% to running costs and 1% is retained for the Treasury. While the user fees offered a real opportunity to some public health facilities to consolidate their development, this has not been the case throughout the country (Barber *et al*. 2004). In practice, this policy appeared to be insufficient to complement salaries, which are often set below the poverty line. Civil servants developed coping mechanisms to reach a liveable income.

The Cambodian government was concerned about the barriers created by the introduction of user fees. Different mechanisms were established to address this including a central control on fee levels and a decree on fee exemption for the poor. As in other countries, the decree did not really translate into practice: very few patients were accepted for free and it was not clear whether these were the poorest. Alternatives had to be found. The Urban Health Project in Phnom Penh pioneered health assistance mechanisms for the poor in the late 1990s. In 2000, *Médecins Sans Frontières* Belgium took up the idea for the health district hospitals it supported. Initially, a Health Equity Fund (HEF) was set up as a complementary measure to a performance-based funding scheme called the New Deal (Van Damme *et al*. 2001; Meessen *et al*. 2002). The HEF, however, rapidly became a strategy per se. The approach was presented in national workshops and captured the attention of operational actors, donors and the Cambodian government. Other agencies perceived the potential of the strategy to provide a bridge between the needs of resource mobilization through user fees and access to services by the poor. With the political support of the Ministry of Health, they adapted the strategy for their projects according to their own constraints and opportunities. In late 2006, there were 26 hospital-based HEFs in operation in the country.

This interest in HEFs echoes the emerging awareness about the excessive share of out-of-pocket payment in health care financing in Cambodia. The total expenditure on health represents 10.9% of the GDP. The government only contributes 19.3% of health spending, the bulk of the remaining 80.7% being funded by users.[1] Out-of-pocket expenditures are primarily due to payments to unregulated private practitioners (Jacobs and Price 2004) and unofficial payments in the public sector (Barber *et al*. 2004). In addition, various participation costs, such as transportation costs, also exist. In these conditions, payments for health care can turn rapidly into catastrophic health expenditures (Van Damme *et al*. 2004).

In Cambodia, the Ministry of Health and the Ministry of Social Affairs, as well as international donors, perceive HEFs as a promising cross-sectoral strategy and co-funding source. The HEF was part of the National Poverty Reduction Strategy 2003–2005. The national HEF-framework will expand the experience to additional health districts (Ministry of Health 2005). The results of this research and the comparative framework it provides may be useful tools in this process of harmonization and scaling-up.

Study sites and methods

Comparative studies may contribute to science in different ways (Landman 2003; Vigour 2005). There are four main motives for undertaking a comparison:

1. Epistemological break: taking distance from an isolated subject of study may facilitate the generation of new hypotheses. We clearly had such a purpose at the start of our study: all authors were influenced by one specific experience, and accumulating knowledge on other approaches was felt necessary to avoid restrictive views and misguided recommendations.
2. Descriptive pattern: researchers have to identify the key attributes for description, some of which might not appear in isolated experiences. Our comparison facilitated the identification of the key characteristics of HEF schemes. It enriched the description of the individual cases and helped in structuring the comparative framework.
3. Analytical step: having a comparative table may lead to classifications which make the cases less complex to understand. The single analytical framework that we used helped us to identify commonalities and differences across the experiences reviewed. Although the development of a formal classification would require a larger sample, we have taken some steps in this direction.
4. Theory building: comparison may eventually contribute to generalization or theory building by validating or invalidating some hypotheses. In fact, this paper challenges some hypotheses underlying individual schemes (e.g. superiority of a pre-identification strategy), while it generalizes others (e.g. need for a driving actor at the initiation of the scheme) which may be used for design and policy recommendations.

Our comparative study rests on four case studies: Svay Rieng, Pearang, Kirivong and Sotnikum. Sites were selected through purposive sampling. The key criteria for selection were: (1) meeting the basic definition of HEFs (third-party payer for the poor); (2) being initiated and supported by different agencies; (3) providing an illustration of the variety of models;

and (4) being in operation long enough to give sufficient hindsight and routine data on the experience (in 2004). In all reported experiences, HEFs were not designed in isolation, but as a complement to a wider strategy, including community participation, abolition of informal fees, a staff incentive scheme and quality improvement measures.

All reported HEFs were in operation during the period of review. However, the Sotnikum and Kirivong schemes have been modified slightly[2] since their initiation. Today, they also propose services at health centre level. In both cases, this paper focuses on the initial experience, at hospital level only. The local health system context in which the four reported schemes operate is summarized in Table 1.

As far as method is concerned, the research started with a basic framework that summarized some broad questions we had on the observable diversity in terms of design and implementation. Since little was written about HEFs, we developed our comparison method iteratively. Between July 2003 and November 2004, the first author made six visits to Cambodia for a total of 4 months, working on various health financing and social protection issues. HEF models were a key strategy in all of the projects that he visited. All of the collected data and information were progressively processed into the framework. It also cast light on neglected aspects that would be investigated during the following visits. During this period, the principal investigator maintained regular contact with the HEF key actors, including central health authorities and project co-ordinators.

Documenting an implementation process requires an intimate knowledge of the intervention itself (Coady *et al*. 2004). Five of the co-authors (FG, IP, RT, BJ, WVD) have been strongly involved in the management of the HEF approaches described in this paper. They all played a key role in the initial design of the schemes, their development and the exchange of experiences.

Their field knowledge was tapped in the comparative study through interviews, informal discussions and, at a later stage, successive revisions of the paper. This information was completed with a review of the grey literature and peer-reviewed papers. Grey literature is mainly composed of international agencies' reports on initiation, development and evaluation of HEF approaches. It also comprises material developed for national and international workshops on the subject.

The principal investigator was careful to triangulate information on each case. During field visits, semi-structured interviews were conducted with a variety of other informants on various issues related to the health sector, social protection, HEF and perception of the users. Notes were taken, but the interviews were not tape-recorded. The list of questions was adapted according to the stage of completion of the research and to the informant. Informants include managers of the scheme, central and local political and medical authorities, international consultants, health staff, HEF staff, traditional leaders, religious and civil society representatives, and community members.

Secondary data and supportive documents were collected and regularly updated. They include the Health Information System activity reports, HEF activity reports, accounting, management documents and some surveys. All of the quantitative indicators used in this paper were calculated from these sources. Currently, there is no formal national supervision of HEFs in Cambodia, and consequently no common policy, contracts, reporting or monitoring procedures. As a result, we were forced to limit the comparison to a set of quantitative basic indicators.

Quantitative data relate to the period from September 2003 to August 2004. During this period, all four study schemes had overcome the launching phase and initial investments and were operating on a routine basis. Widening our time-scope would have diminished the validity of the comparison.

US$ are widely used in Cambodia, in addition to the national Riels, and the exchange rate remains very stable. We used an exchange rate of 4000 Riels to 1 US$.

Analytical framework and some definitions

The HEF model differs from a health system that relies exclusively on the public health care provider. The starting point of the strategy is to avoid conflicts of interest and clearly distinguish the functions that are to be fulfilled. This questioning on functions and actors has inspired other work in health systems reform (Kutzin 2000; Preker *et al*. 2000).

We divided our questioning into three main themes: (1) who does what?, (2) how is it done?, and (3) what are the consecutive outcomes? The results on the four schemes are reviewed and compared along this framework in the next section. It also provides the backbone for the discussions and helps articulate the lessons learnt and the pending questions.

The first part of the framework documents the possible actors for the roles of donor, HEF operator (on a daily basis), identifier, health care provider, and monitoring and evaluation agent. Obviously, an actor may fulfil multiple functions, as the HEF operator who assists patients, negotiates with the provider and pays on behalf of the poor in all the schemes.

Table 1 Local health system context for the four HEFs under study

	Svay Rieng	Pearang	Kirivong	Sotnikum
Context				
Population	Province – approx 530 000	Health District – approx 200 000	Health District – approx 205 000	Health District – approx 220 000
Supported hospital	One 120-bed provincial hospital	One 72-bed district hospital	One 80-bed district hospital	One 120-bed district hospital
No. health centres in the area	37 health centres (province) + 2 Operational District referral hospitals	15 health centres	20 health centres	17 health centres
Project initiated by	UNICEF	HealthNet International	Enfants & Développement	Médecins Sans Frontières and UNICEF
HEF started in	July 2002	July 2002	May 2003	Sept 2000

The second part compares the strategies developed for these functions. There are various ways to identify the poor, purchase the services and contract with the provider. The performance of the scheme will also depend on the assistance and services provided. Health care provision will not be discussed in this comparison as it is always entrusted to the public provider in Cambodian experiences.

The data collected through routine procedures are meagre and poorly comparable. This constrained our analysis of the outcomes brought by the schemes. Opting for case studies gave us an insight into non-quantitative and context-specific aspects. But still, we had to limit ourselves to some basic indicators for identification, health services utilization and costs.

The main technical terms used in the following sections are defined in Box 1.

Results

In this section, we describe similarities and differences in the approaches under review through the prism of our comparative framework.

Who does what?

Representatives of foreign agencies played a major role in the four schemes regarding programme formulation, definition of eligibility criteria, supervision and development of the schemes. Other functions, such as identification, daily management and routine monitoring, were entrusted to various actors, such as health authorities, community representatives, religious leaders and civil society, as summarized in Table 2.

In Sotnikum and Svay Rieng, the supporting agency designed the main aspects of the HEF in isolation. The strategy was then proposed and discussed with local stakeholders. It was formally approved by the members of the steering committee of the New Deal in Sotnikum. UNICEF did not integrate such a step in Svay Rieng, although a consensus was sought for later adaptations.

In comparison, *Enfants & Développement* representatives developed the Kirivong HEF concept in consultation with the District Chief Monks, Governors and the Health District Directorate. HealthNet International also adopted a participatory approach in Pearang, which went down to the village level, with a process of informal negotiations on proposals of designs. The consulted actors were from the health sector, local and administrative authorities, population and civil society, from the district level to villages.

The supporting agency provides and channels the funding in all the schemes, except in Kirivong where pagodas and mosques collect voluntary donations from the population. The pagodas are the places of worship for Buddhists who represent 90% of the population in Cambodia. More than just premises, they are real organizations playing an important role in social life, especially in rural areas.

Pagodas are also in charge of the daily management in Kirivong. They follow up the services delivered to the beneficiaries and they pay the health care providers. In Svay Rieng, this task was first left to UNICEF during the first stages of the scheme. In 2004, it was handed over to a new Provincial Equity Fund Support Committee, composed of local pagoda representatives, administrative authorities and local NGOs. The remaining option among the reported schemes is to contract a national NGO to ensure daily management. In Pearang, the NGO was specifically created for that purpose.

We can distinguish three strategies regarding identification: pre-identification alone in Kirivong, passive identification alone in Sotnikum and a combination of both in Pearang and Svay Rieng.

In all experiences with pre-identification, community members participate to a certain degree; yet, they are never the sole actors. In Svay Rieng, the district health staff conducted the pre-identification in collaboration with Village Health Support Group members and local authorities. UNICEF staff monitored the process. In Kirivong, the pre-identification was carried out

Box 1 Main definitions

Household assessment: Identification process in which an identifier directly assesses, household by household, who is eligible for assistance.
Means testing: Assessment of the socio-economic status of a household, based on the household's income and/or wealth.
Proxy means testing: Assessment of the socio-economic status of a household, based on observable variables correlated with socio-economic status, such as ownership of assets, characteristics of the head of the household (e.g. gender, literacy, occupation) and family composition (e.g. demographic structure, number of disabled members).
Pre-identification: Assessment for eligibility of individual households, prior to the episode of illness. If the household assessment is done at home, proxies are directly observable by the identifier.
Passive identification: Identification performed at the point of use. It takes place on the hospital premises, when the patient asks for it or when they are referred for financial assistance for health care services. Unlike pre-identification, the proxies used for assessment are not directly observable by the identifier.
Equity certificate: Entitlement document delivered to the household prior to the episode of illness which is sufficient to guarantee subsidized access to the services during its period of validity. In the reported experiences, it comprises the necessary information to verify the household's composition, including a picture.
Voucher: Entitlement document delivered to poor households upon request after the patient falls sick. It gives access to the same services as the equity certificate, but is only valid for one episode of illness. It only includes basic information about its holder, such as name and place of residence.

Table 2 Who does what? Functions and actors in the four HEFs

	Svay Rieng	Pearang	Kirivong	Sotnikum
Actors and Roles				
Design and definition of eligibility criteria	Supporting agency (UNICEF)	Supporting agency (HealthNet International), negotiated with local representatives and authorities	Supporting agency (Enfants & Développement), local representatives and authorities	Supporting agency (Médecins Sans Frontières)
Funding	External (UNICEF)	External (HealthNet International)	Pagodas (with possible complements from Enfants & Développement)	External (Médecins Sans Frontières)
HEF operator (daily management)	Provincial Equity Fund Support Committee (since 2004)	National NGO (Action for Health)	One pagoda committee per health centre. 20 committees for 20 local HEFs in total	National NGO (Cambodian Family Development Services)
Pre-identification	Health centre management committee, community representatives and local authorities	Trained volunteers, village chiefs and community representatives	Health centre management committee members with village chiefs. Endorsement by pagoda chief monks	None
Passive identification	Hospital staff. Approval by monitoring committee	National NGO (Action for Health)	None	National NGO (Cambodian Family Development Services)
Health care services delivery	Provincial hospital	Referral hospital and health centres (deliveries) of the Operational District	Referral hospital and health centres of the Operational District	Referral hospital of the Operational District
Monitoring	Provincial Equity Fund Support Committee (since 2004)	National NGO (Action for Health)	No formal monitoring. Semestrial surveys by Enfants & Développement	Combined team - Provincial Health Department, Médecins Sans Frontières
Data analysis and steering	UNICEF (activity reports)	HealthNet International (activity reports)	Enfants & Développement (semestrial surveys)	Médecins Sans Frontières and Steering Committee (activity reports)

by members of the Health Centre Management Committees in tandem with the village chiefs, and it was endorsed by the respective pagoda chief monks. In Pearang, local trained volunteers were in charge of the initial pre-identification, with assistance from the village leaders and community representatives, under the supervision of the national NGO.

Passive identification requests the presence of an actor at hospital level. In Pearang and Sotnikum, the national NGO detects poor patients arriving at the hospital and conducts interviews to assess their socio-economic status. In Svay Rieng, hospital staff occasionally performed passive identification until the pre-identification process was completed, but new inclusions rapidly became rare.

Daily monitoring is entrusted to the HEF operator in Svay Rieng and Pearang. It mainly consists of securing the provision of health services to assisted patients and verifying the poverty status of pre-identified households. In Sotnikum, a team consisting of the key decision-makers was built up for that purpose. In Kirivong, this function was replaced by the implementation of 6-monthly surveys on the performance of the scheme and the identification process by *Enfants & Développement*.

How are the poorest identified?

In all cases, the poorest households are identified through household assessments. Similarly, all schemes formalized the selection process with identification criteria. But, as summarized in Table 3, there are differences in terms of the place and time of selection, as well as in the criteria, methods and tools that were used.

Pre-identification relies on a community-based targeting approach in Kirivong, and on a formal questionnaire, administered by trained actors, in Pearang and Svay Rieng. In the first case, local knowledge of households' socio-economic status was considered to be at least as accurate as, and certainly less expensive than, proxy means testing. In the second case, the rationale was that poverty status had to be scored in order to ensure both horizontal and vertical equity.

Not surprisingly, the first option provided a faster identification process. In Kirivong, an indicative set of poverty criteria was communicated to local monks and community representatives of each health centre's target population. In a few hours (or days), they listed those that they deemed eligible within their community. A few weeks were needed to reach a consensus about the identified households' eligibility and to get the endorsement from the pagodas' chief monks. The final list was distributed to health care providers and local administrative authorities. In Pearang and Svay Rieng, a standard questionnaire was filled in for each new investigated household. Each question of the household assessment relates to one of the retained criteria. A score is set for each question. The total of all scores is then compared with a threshold that is considered to represent the border between poor and poorest of the poor. The completion of the pre-identification process took about 9 months in Pearang (200 000 inhabitants) and 2 years in Svay Rieng (530 000

Table 3 How are the poorest identified? Procedures and criteria used in the four HEFs

	Svay Rieng	Pearang	Kirivong	Sotnikum
Identification process				
Identification method	Household assessment	Household assessment	Household assessment	Household assessment
Selection place	Household	Household	Village	Hospital NGO office
Selection time	Ex-ante	Ex-ante	Ex-ante	At the illness episode
Selection process	Pre-identification (proxy means testing) Verification (Data entry (database)	Pre-identification (proxy means testing) Verification (Data entry (database)	Pre-identification Approval by Chief Monk Edition of entitled list	Passive identification (proxy means testing) at episode of illness, at hospital, by local NGO staff
Selection tool	Formal scored questionnaire	Formal scored questionnaire	Informal list of criteria for community-based targeting	Informal. Non-formalized interview.
Entitlement document	Equity certificate Database	Equity certificate Database	Voucher (non-permanent) Entitled list	None (except records in the books of the NGO)
Alternative process	Passive identification at episode of illness, at hospital, by hospital staff	Passive identification at episode of illness, at hospital, by NGO staff	Certification letter signed by the pagoda chief monk	None
Criteria				
Household characteristics	Occupation of household head Marital status No. children <18 years No. elderly dependents	Occupation of household head Marital status No. dependents	No. dependents (alt. criteria)	Marital status No. disabled members No. dependents No. children at work
Health status		Length of severe illness during the previous year		Chronic disease in household
Productive assets and belongings	Type of housing Transport means Size of land No. cows, buffalos and pigs	Roof and wall and m^2/person Size of productive land Electronic items Transport means Farm assets and livestock Power supply Quantity of rice harvested	Type of housing Size of farmland Transport items (alt. criteria) Farm animals (alt. criteria) Electronic items (alt. criteria)	Size of land/rice fields Productive assets
Income/ expenditures		Cash income/expenditures Health expenditures during the previous year	Household income	Lack of food security
Others				Appearance and social capital
Scoring	Score/criteria and threshold	Score/criteria and threshold	None	None

inhabitants). The main steps were an initial household assessment, screening of the selected households to verify the assessment and a search for eligible households who had been excluded, taking a photo of the household and distribution of vouchers to ensure access before the distribution of definitive equity certificates. Identification questionnaires were compiled into a database that then computed the total score of the household and compared it with the set threshold. A list of eligible households was edited and distributed to health care providers.

Passive identification is used either in isolation (Sotnikum) or in combination with pre-identification techniques. In Pearang and Svay Rieng, passive identification is based on the same questionnaire that is used for pre-identification. The only difference is in terms of assistance: passively identified patients do not receive an entitlement document. In Sotnikum, passive identification is based on indicative criteria. A check-list exists, but these criteria are neither communicated outside the NGO, nor formalized in a systematic questionnaire, reportedly to avoid gaming of the interview by the applicants. The NGO staff sometimes make home visits to a selection of beneficiaries to verify their poverty status. No certificate or voucher is issued. Monthly records give an overview of the total services provided per patient and their cost, but it does not link these data with the profile of selected households.

In Sotnikum, Pearang and Svay Rieng, regular home visits are conducted to verify the socio-economic status of a sample of beneficiaries according to a list of criteria. These visits are also an opportunity to assess the satisfaction of the users with the health care services and social assistance. In Kirivong, 6-monthly surveys fill a similar function. In addition, the population's willingness to contribute financially to the scheme gives an indication of its social acceptance, including the reliability of the pre-identification process.

Table 4 How are beneficiaries assisted? Procedures to get assistance and the benefit package in the four HEFs

	Svay Rieng	Pearang	Kirivong	Sotnikum
Assistance				
Process to get assistance	Show equity certificate	Show equity certificate	Show ID card and get a voucher from the district hospital	Ask for interview by the NGO
Alternative process	Ask for interview at provincial hospital	Ask for interview by the NGO	Get a certification letter signed by the pagoda chief monk and get a voucher from the district hospital	None
Benefit package				
Health services at hospital level	100%, 75% or 50% of the user fees. Depends on the scoring	Theoretically, 90% of the user fees. In practice, 100%	100% of the user fees	Usually 100% of the user fees. In certain cases, partial exemption
Health services at health centre level	None	Free deliveries	100% of the user fees	None
''Extra services''	For 100% exempted patients: - referral transportation costs - daily allowance for food	Health services outside health district at approved facilities All transportation costs Daily allowance for food Other benefits if needed	None	Transportation costs Food Basic items

How are beneficiaries assisted?

The HEF schemes under review provide different documents for formalizing the entitlement of applicants (equity certificate, voucher or nothing). The process of requesting assistance then differs, as does the benefit package. These dimensions are summarized in table 4.

In Svay Rieng and Pearang, pre-identified households only have to show their equity certificate to the HEF operator to benefit from HEF assistance in case of illness. It is valid for all listed household members. The equity certificate includes a photo of the household as a means to ascertain the identity of beneficiaries.

In Kirivong, pre-identified households did not receive a certificate, but they were informed about their eligibility and benefits by community representatives. When sick, HEF beneficiaries visit the health care provider with their identity card or election card. They get certification from the health care provider upon receipt of the health care services delivery. They hand it over to their local representatives for administration purposes. Non-selected households may also ask their respective pagoda chief monk for inclusion after the pre-identification process is completed.

In all schemes, passive identification does not give a right to any entitlement document. Applicants have no guarantee that they will be admitted under the scheme or not. In the course of an episode of illness, they may directly ask for an interview with the HEF operator based in the hospital compound, or be detected and referred by hospital staff. A screening procedure is then conducted to assess their eligibility. In all cases, passively identified patients are only entitled to the benefit package for the current episode of illness. This differs from the situation for pre-identified patients, who know that they may benefit from HEF assistance any time illness strikes.

Pearang, Kirivong and Sotnikum systematically offer full exemption from user fees at hospital level, but partial exemptions are an exception. In Svay Rieng, the percentage of exemption of user fees depends on the poverty score of the patient's household.

In most schemes, a variety of extra services are provided, including transport to the hospital. Initial needs assessment and regular ward visits by the HEF operator are essential to identify other services needed by the patient. This may require other expertise, as in Pearang where extra services include referrals to upper levels outside the health district (mainly in Phnom Penh). These additional benefits are more restricted in Sotnikum and Svay Rieng. Kirivong does not provide additional benefits (no presence of the HEF operator at hospital level), but it is noticeably the only scheme to offer (fully exempted) health care services at health centre level as well.

How is the provider made accountable?

The willingness of the provider to contribute to the system also matters. Different mechanisms and payment methods have been used to enforce their accountability, as summarized in table 5.

In the two approaches using a national NGO as the HEF operator (Sotnikum and Pearang), a contract formalizes the relationships between the donor (foreign agency) and the HEF operator. A second level of contracting between the HEF operator and the district hospital was added. These contracts are intended to ensure accountability of the HEF operator and the health care provider, and to set quality standards to be reached. The relationship with the HEF operator was not formalized in Svay Rieng or Kirivong.

All of the schemes compensate providers based on the official flat rate fees. Calculation methods are simple and transparent; fees are those used for paying patients, and disbursements are made on a regular basis. In Pearang and Kirivong, the health care provider assumes part of the exemption, while they are fully subsidized in Svay Rieng and Sotnikum.

What are the outcomes in terms of utilization?

Table 6 reveals important differences in the proportion of the population deemed eligible. Svay Rieng presents twice the proportion of pre-identified persons as Pearang. Seventy-one

Table 5 How is the provider made accountable? Contracting options and reimbursement method in the four HEFs

	Svay Rieng	Pearang	Kirivong	Sotnikum
Contracting				
Donor/purchaser	None (only a Memorandum of Understanding)	Contract; HealthNet International/national NGO	None	Contract; Médecins Sans Frontières/national NGO
HEF manager/ provider	None (only a Memorandum of Understanding)	Contract; national NGO/health care provider	None	Contract; national NGO/ health care provider
Reimbursement				
Allocation base	official flat rate fees	official flat rate fees	official flat rate fees	official flat rate fees
Extent of the reimbursement	100% of user fees incurred and not covered by the patients	90% of user fees incurred and 10% to be (theoretically) paid by the patient	100% of user fees if the patient was referred; 70% if not	100% of user fees incurred
Frequency	Monthly	Monthly	Monthly	Monthly

Table 6 Pre-identified persons on the four sites

	Svay Rieng	Pearang	Kirivong	Sotnikum
Identification				
Total population	528 394	196 380	205 643	220 000
No. pre-identified persons	123 746	23 332	32 200	n.a.
% pre-identified persons/total population	23.42%	11.88%	15.66%	n.a.
Population living below the poverty line	43.00%	58.00%	35.00%	76.00%

Table 7 Utilization/hospitalization rate at the four sites (from September 2003 to August 2004)

	Svay Rieng	Pearang	Kirivong	Sotnikum
Inpatients Utilization				
No. inpatients/year	5216	2139	3525	3625
Av. HEF beneficiaries/year	1689	1122	249	1521
% of HEF beneficiaries	32%	52%	7%	42%
Hospitalization rate				
General	10/1000	11/1000	17/1000	16/1000
For non-beneficiaries	9/1000	6/1000	19/1000	n.a.
For HEF beneficiaries	14/1000	48/1000	8/1000	n.a.

per cent of the Svay Rieng pre-identified members may benefit from 100% exemption, 15% from a 75% exemption and 14% from 50% exemption. As mentioned above, the initial Sotnikum scheme did not include pre-identification.

It is noticeable that thresholds used for pre-identification are more restrictive than the US$1 poverty line (Ministry of Planning and United Nations World Food Programme 2002). This is particularly striking in Pearang. This, however, does not take into account the proportion of the population that may be selected through passive identification.

Table 7 shows major differences in terms of the utilization of services[3] by HEF beneficiaries.

For the reported period, the Kirivong model presents the highest general hospitalization rate. Yet it presents the lowest rate for the group of individuals entitled to HEF assistance. It is the only scheme in which, on aggregate, HEF-entitled individuals use hospital services less than non-entitled individuals. In Pearang, the average hospital admission rate is eight times higher for HEF-entitled individuals than for paying patients. This difference is less striking in Svay Rieng. HEF beneficiaries represent between 30 and 50% of hospitalized patients in Pearang, Svay Rieng and Sotnikum, and less than 10% in the Kirivong hospital.

Hardeman *et al*. (2004) have found that implementation of the HEF in Sotnikum led to a sustained increase in access to health care services for HEF beneficiaries. The same applies to at least two of the three other schemes, as illustrated in Figure 1.

In Sotnikum and Svay Rieng, there was a gradual increase in patients accessing the services after the launch of the HEF. This occurred in the fourth trimester of 2000 in Sotnikum and the third trimester of 2002 in Svay Rieng. The same trend is observed in Pearang after distribution of the equity certificates (during the second and third trimesters of 2003). The impact of the HEF before this was marginal.

In these three schemes, HEF beneficiaries are additional to the average number of hospitalized patients who paid their own fees in previous periods; on aggregate, there seems to be no transfer from paying patients to HEF beneficiaries. This suggests that HEF patients represent new patients, who were unable to pay for health care services.

In Pearang, we observe a high peak in the third trimester of 2003, partly due to a high demand for untreated surgical care from the newly entitled HEF members. In 2004, HEF patients represent more than half of the patients of Pearang hospital. During the same time, the proportion of paying patients is slightly less than the average in previous periods.

In Kirivong, HEF beneficiaries represent only 7% of the total hospitalizations. This does not allow for a conclusion of clear causality between the impact of the HEF and hospitalization numbers.

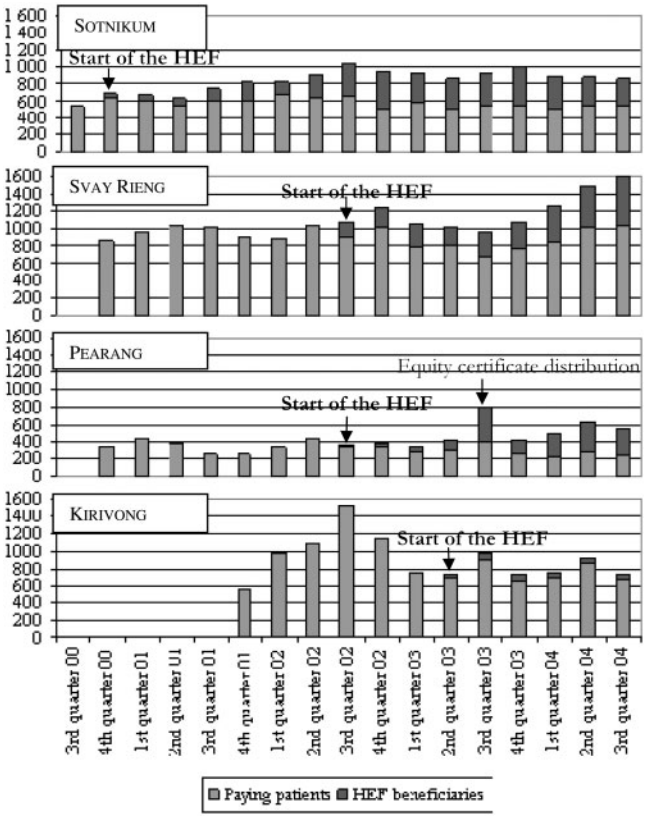

Figure 1 Hospitalizations for HEF beneficiaries and non-beneficiaries in the four HEFs

What are the consequences in terms of costs?

Table 8 shows the costs of the four HEFs, comparing the expenditures for direct assistance and for running costs. Pre-identification costs are considered to be an investment and are analysed separately in Table 9.

The expenditures on medical assistance[4] per beneficiary at hospital level are similar for Sotnikum, Svay Rieng and Pearang. In Pearang, expenditures on extra services equate to more than this amount, mainly for referrals outside the district and transportation. Medical expenditures per beneficiary in Kirivong equate to half the amount of the other HEFs. In fact, the largest portion in Kirivong that was allocated to direct assistance was consumed by services at health centre level, which are not included in this study.

In combination with other funding sources (including government subsidies), the amount invested in user fees is far inferior to the real costs of hospital care services obtained for the poor. In Sotnikum, it has been demonstrated that the payment of US$7–10 in user fees enabled access for the poorest to an average US$53 worth of health care services (Hardeman *et al*. 2004). This is mainly because the government guarantees a quite reliable supply of drugs, even with utilization increases due to HEF beneficiaries.

Running costs differ strongly.[5] The two NGO-managed schemes, Sotnikum and Pearang, present the highest costs. In both cases, staff salaries account for about 40% of the costs. The remaining difference is caused by frequent travelling by the Pearang HEF staff (mainly for monitoring). In Sotnikum and Kirivong, the reported running costs are slightly overestimated

Table 8 Direct assistance expenditures and running costs in the four HEFs (from September 2003 to August 2004) (US$)

Expenditures	Svay Rieng	Pearang	Kirivong	Sotnikum
Costs per year at hospital level				
Hospital medical expenditure	25 974	14 822	1733	19 811
Medical expenditure outside district	0	9299	0	0
Transportation costs	1060	5532	0	2531
Other benefits	1965	5599	0	0
Total expenditures	29 000	35 252	1733	22 342
Assistance per beneficiary at hospital level				
Hospital medical expenditure	15.4	13.2	7.0	13.0
Expenditure on extra services	1.8	18.2	0.0	1.7
Total expenditures	17.2	31.4	7.0	14.7
Running costs and staff salaries				
Total/year	7920	20 082	600	10 436
% of total costs	21%	36%	26%	32%
Total costs per year	36 920	55 335	2333	32 778
Total cost/beneficiary	21.9	49.3	9.4	21.6
Total cost/enrolled member	0.3	2.4	0.1	n.a.

Table 9 Pre-identification costs in the four HEFs (US$)

	Svay Rieng	Pearang	Kirivong	Sotnikum
Pre-identification costs	7177	13 528	2200	n.a.
Cost per capita of total population	0.01	0.07	0.01	n.a.
Cost per capita of total no. pre-identified	0.06	0.58	0.07	n.a.

since they include expenditures related to the services delivered at the health centre level.

The calculated costs per beneficiary and per year must be interpreted cautiously. They certainly give an indication, but are not sufficient to compare the economic performance of all schemes. They must be analysed in consideration of the benefits proposed to poor households and in consideration of the qualitative dimensions of the scheme, which may not be represented in the figures.

The yearly cost per enrolled member is interesting. It gives the cost of insuring a single person, under the specific conditions of benefit package, hospitalization rate and administrative workload. With these assumptions, protecting the poor would cost between US$0.1–2.4 per 'insurance member'. Ideally, expenditures for passively identified beneficiaries should be withdrawn. Also pre-identification costs should be expressed as a yearly cost, and integrated into the calculation. Table 9 presents the total costs invested in pre-identification in the reviewed schemes.

Pre-identification costs were the most difficult to assess.[6] These costs are not expressed on a yearly basis as the actual validity period of the pre-identification is unknown. As compared with Svay Rieng, the Pearang expenditures probably provide the most realistic picture of the cost incurred by a rapid pre-identification strategy, with continuous support of an external agency, photo taking and printing of equity certificates.

When pre-identification is expressed per capita, we can observe that a simple community-based approach (Kirivong) provides a cheaper solution than a 'volunteer' approach supported by an NGO, with delivery of a strong entitlement (Pearang). The quality of the targeting method should be assessed before drawing further conclusions. Pre-identification costs should also be appreciated with respect to the validity period of the entitlement. Most schemes were planned for 2 years but, except in Kirivong, this period has been extended without review of the pre-identification.

Discussion

Main findings

This paper confirms that a HEF can enhance access to hospital services by the poorest people. This study is not a benefit-incidence assessment (Gwatkin *et al*. 2005). Yet, there are good reasons to believe that HEF beneficiaries are among the poorest group: (1) in Kirivong, Pearang and Svay Rieng, the pre-identification was a transparent and monitored process, including field cross-checks and involvement of actors with limited stakes; (2) in Sotnikum, the international NGO organized its monitoring ex-post (via hospital bed census). While cases of under-coverage were reported, cases of leakage were not. Moreover, in at least three of the four sites, the increase of HEF beneficiaries has coincided with a constant utilization by paying patients. This gives an indication that HEF beneficiaries are, as an aggregate, new users of the hospitals.

In the reported sites, the utilization increase by the HEF beneficiaries tends to confirm that the HEF model is superior to the exemption system that was previously in place. The comparison of HEFs with other Cambodian experiences that rely exclusively on hospital resources during the same period also favours the HEF model. In such cases, where the provider identifies the patient for exemption and bears the cost of the health care services consumed, exemption rates remained at a maximum level of 3% (Akashi *et al*. 2004; Barber *et al*. 2004), far below the lowest results reached by the reported HEFs.

The success of social assistance mechanisms also depends on the advantages conveyed for other stakeholders (Wagstaff *et al*. 2004). The HEF model pays attention to the constraints faced both by the providers (necessity to recover costs) and by the poor (inability to cover the different participation costs). It then tackles a major flaw in the design of traditional waiver schemes (Gilson 1997). In Cambodia, the influx of HEF patients means a supplementary income for health facilities. It improves their financial stability and it increases staff salary bonuses and the money available for running costs. This offers justification for quality demands and contracting of the provider.

The comparative study reveals that there are different ways to implement the HEF model. Pros and cons of the various options are discussed below. Although they would benefit being tested on a larger scale, we believe that these results can already provide useful landmarks for readers interested in design, operation and evaluation of similar strategies. They are summarized in Table 10.

Who does what?

As far as distribution of roles is concerned, there are commonalties and differences across the four schemes.

A central common feature is the need to identify a driving force from the start of the scheme. In the reviewed experiences, international agencies have filled this role. Their financial capacity is only part of the explanation. Good knowledge of the field and local actors (thanks to decentralized projects), public health expertise, and operational flexibility have been key assets. Their commitment to results, pragmatism and the fact that they could, politically speaking, take risks, have allowed them to fully play a catalytic role.

Who will fund the approach is another determining question. Experience shows that external funding is essential for (expensive) hospital services. It may be seen as a weakness in terms of sustainability, but external funding also permitted testing the model freely, with only minor budget restrictions. Evidence gathered concerning the efficiency of the approach is now being used to orientate the Cambodian government and international donors in the preparation of the national HEF

Table 10 Summary of the main lessons learnt from the comparative study on the four HEFs

	Preliminary lessons learnt	Comments
Who does what?	Need for a driving actor from the initiation of the scheme	An actor who sets the agenda, orchestrates the formulation and implementation process and acts as a go-between for other stakeholders.
	Secure an external funding source	Local sources of funding alone cannot meet the cost of hospital services for the eligible poor. External funding is paramount to reach the HEF objectives.
	Better to split the purchaser and health provider functions	Create a real third-party payer mechanism. Assigning both functions to a single actor is likely to create conflicts of interest.
	Different options regarding the HEF operator	As long as they meet a set of key criteria: knowledge of local socio-economic conditions; managerial capacity; no conflict of interest; accountable; present at hospital level.
	Involve local community in pre-identification	In order to benefit from their insider knowledge. Possibly in collaboration with other actors.
How are the poorest identified?	Targeting techniques can be used in combination	Complementarity and cross-validation reduce the risk of leakage and exclusion.
	Prefer proxy means testing to means testing	A method based on income or expenditures is more expensive and less reliable in poor rural areas.
	No single answer regarding the identification tool	We found no evidence that a formal household assessment questionnaire was superior to other tools.
	There is no firm evidence in favour of pre-identification	It also has time and budget implications. The minimal option may be passive identification by a social worker at hospital level. Both can also be used in combination.
How are beneficiaries assisted?	Subsidizing hospital care is an absolute need	The cost of accessing hospital services is a major financial barrier. The answer is not as clear cut for first-line health services.
	Non-health-related costs should be considered	User fees are not the only barrier. Distance and related costs can also act as major deterrents. The presence of a social worker can secure the provision of services.
	Make targeted households feel secure about their entitlement	Granting an equity certificate can be an option. But knowledge and confidence also depend on communication and perceived quality of care.
How is the provider made accountable?	Agree on a fair and timely reimbursement mechanism	In order to make sure the provider is willing to welcome supported poor patients.
	Formal contracting is not the only way to make the provider accountable	There is no evidence it gave better results than more simple social control mechanisms.

framework. The Kirivong approach of raising resources locally is an alternative, but its limits are clear: coverage and the benefit package are constrained by the community's contribution capacity. 'Matching grants' (e.g. for every US$1 collected at the local level, the central government or donors commit another US$1) could be a way to combine the two approaches.

The active role taken by international agencies should not create the illusion that the government was indifferent to the experiments. In fact, at this level, an important role played by the Cambodian health authorities can be identified. Since the very start, they have been very supportive of the strategy. It is also thanks to their openness that a variety of approaches have been tested.

Our review also shows that a clear separation of functions is a requirement in the four HEFs: neither purchasing nor identification should be entrusted to health care providers, in order to avoid conflicts of interest. An external HEF operator is then assigned for daily operation of the HEF. The four schemes adopted different tracks, which all appear to be effective. The experiences of Svay Rieng and Kirivong seem to invalidate the previous belief that contracting a local NGO was the best option (Hardeman *et al*. 2004). But the operating bodies that they have adopted respect the same key principles: (1) good knowledge of the socio-economic conditions of the population; (2) minimal managerial capacity; (3) no conflict of interest towards patients or providers, so they are not subject to pressure; (4) accountable to the sponsor; and (5) guarantee a presence at hospital level. All options have advantages and drawbacks. For example, the involvement of national NGOs is aimed at tapping national expertise (Sotnikum) or building it (Pearang) in a sustainable way; yet this incurred high recurrent running costs, a high turnover of staff and stronger dependence on external funding. Pagoda management in Kirivong may appear to be a good low-cost

alternative, but it did not allow for passive identification and contributed to low hospitalization due to a poor presence on the premises.

The task of pre-identification seems to require the participation of community members. They were involved at different levels in the three sites concerned. Their insider knowledge avoids the need to screen the entire population. Yet, in the three sites, their expertise has been combined with that of some other actors. This strategy seems particularly relevant to enforce common eligibility criteria across communities and to protect the scheme from capture by the local elite (Conning and Kevane 2001).

In all cases, the provision of health care services was exclusively entrusted to the public sector. Private providers should not be rejected on principle. However, in Cambodia, the absence of binding regulations with respect to the services, quality and costs make them unreliable partners. Also, costs may be considerably higher compared with the public services, which are highly subsidized in Cambodia.

How are the poorest identified?

Reported HEF experiences show similarities in terms of targeting techniques and identification criteria, but they differ in terms of the tools and identification processes used.

HEF experiences clearly confirm that there is not a 'one fits all' targeting technique. Using a combination of targeting techniques according to the context reduces the risk of leakage to non-poor and exclusion of the real poor (Willis and Leighton 1995; Gwatkin 2000; Devereux 2002). In the reported experiences, individual household assessments are central since they are the most appropriate qualifier to target services based on household poverty status (Newbrander *et al*. 2001). Other techniques are complementary, such as self-targeting (HEF assistance is accessed by the utilization of the contracted hospital), geographic targeting (implementation in specific geographic settings) and community-based targeting (through a certain degree of participation by the community).

They also tend to show that proxy means testing is the most appropriate means for assessing the socio-economic status of households in the context of rural Cambodia. In these poor settings, this is far more relevant than means testing which is solely based on income (Bitran and Giedon 2003). Different sets of criteria and weights can be selected, but they should all correlate with poverty, be easily observable, verifiable by a third-party, and be immune to manipulation by applicants (Devereux 2002).

There is no clear answer regarding the tools that should be used for identification. In Pearang and Svay Rieng, criteria were formalized in a household assessment questionnaire. The questionnaire facilitates verification and gives the opportunity to draw up the socio-economic profile of enrolled members in a database. In Sotnikum and Kirivong, criteria were communicated to the identifier but not formalized in a questionnaire for the sake of sensitivity to specific socio-economic conditions. There were concerns that this would open a path to social pressure and increase leakage. This is not reflected in our results.

This study does not allow for a comparison of the performance of the four schemes in terms of leakage and coverage errors. As already mentioned, in the four schemes, monitoring and cross-checking never showed that leakage was a problem. Under-coverage probably remains an issue, as shown by the comparison with estimates of the population below the poverty line in the four sites (Table 6).

There has been quite some debate in Cambodia concerning whether pre-identification should be a 'must' for any HEF scheme. Proponents of this option underline the fact that passive identification as a stand-alone leaves the potential beneficiaries uncertain about their eligibility. This may be a major barrier for potential beneficiaries. Opponents of this option stress the considerable costs that pre-identification may entail. Our study does not settle this debate, but it provides some interesting insights. First, passive identification alone can be quite effective in terms of coverage, as experienced in Sotnikum. To be optimal, however, it may require good information campaigns in the communities, including time for word of mouth. Secondly, passive identification appears to be an easy way to initiate the scheme and gain early visibility. This may be useful to convince stakeholders to support the strategy. Thirdly, pre-identification may indeed require considerable time and energy, as demonstrated in Svay Rieng. But the identification costs seem to depend much more on the identifying agent than on the identification technique. This finding has also been observed elsewhere (Hanson *et al*. in press). The ideal set-up to identify the poorest may be pre-identification in synergy with other social assistance programmes, combined with passive identification at the point of use.

How are beneficiaries assisted?

Securing access to health care services requires addressing various barriers faced by the patient on both the demand and the supply sides (Ensor and Cooper 2004). This section looks into the financial and non-financial demand-side barriers. HEF schemes attempt to address these through a combination of: (1) a benefit package tailored to the needs of the poor, and (2) mechanisms to make targeted households feel secure about their entitlement.

The HEFs offer free hospital care at the four sites. This fits with the diagnosis that the poor in Cambodia face accessibility barriers mainly at hospital level. Giving timely access to effective hospital services may bring both a significant health benefit and some social protection.

A second common lesson is that the benefit package must not be limited to user fees. In Cambodia, non-health-related costs account for an important share of households' expenditure on health (Hardeman *et al*. 2004; Jacobs and Price 2004). Distance appears consensually as the first additional barrier to be addressed (Yanagisawa *et al*. 2004). Furthermore, other services may be needed. The presence of a hospital-based social worker seems to be a prerequisite to tailor the services to the specific needs of the patients. It can be considered a benefit, especially in combination with some social and psychological support.

Only the Kirivong scheme includes first-line health services in the benefit package. Should this be generalized? There is no clear answer. The financial burden is undoubtedly much lower at health centre than at hospital level. But, provision of benefits at health centre level is likely to redirect health-seeking behaviours of poor households (Jacobs and Price 2006) by

reducing reliance on self-treatment and crooks. As the services these deliver are quite ineffective and expensive, early utilization of the public health system can be beneficial in terms of health and wealth.

Regarding entitlement, some authors suggest that granting a formal document to patients is a good way to strengthen their knowledge and confidence about the system and its modalities (Bitran and Giedon 2003). It may influence the patient's health-seeking behaviour and generate both a health and welfare benefit. In this respect, a HEF, with pre-identification and distribution of an equity certificate, acts as a health insurance with payment of the premium by a third-party. In Cambodia, however, the impact of this insurance on behaviour of selected households remains unclear. Sotnikum did not deliver certificates to its beneficiaries, but its results are similar to those of Pearang and Svay Rieng. Other determinants such as communication and the perceived quality of services also exist.

How is the provider made accountable?

As a complement to other strategies, a HEF is a means to influence supply-side barriers by stimulating the health care provider to respect certain standards. This will depend on (1) the payment method and (2) the mechanisms fostering accountability of the health care provider.

Fair and timely compensation of the provider is a major determinant of their accountability. By proceeding to monthly payments based on the official flat-rate fees, all reported schemes act virtually the same as a patient paying for services. This gives the provider a strong incentive to positively consider the access of the poorest, as each additional patient equates to additional income. It is therefore important that the level and conditions of payment are negotiated and agreed upon with the provider. In Kirivong and Pearang, this opened the path to partial (consensual) payments.

Different accountability mechanisms can be considered. In Pearang and Sotnikum, a contract with the provider is an attempt to formalize the pursuit of quality standards in exchange for full payment. It underlines accountability to the donor; while in the two other experiences, accountability is to the population. There is no evidence that formal accountability gives better results. Some health facilities signed contracts with the community and pagoda representatives in Kirivong. In Svay Rieng and the remaining facilities of Kirivong, emphasis was put only on social control, through regular meetings with community representatives.

Strengths and weaknesses of the study

This paper proposes the first comparative framework of HEF experiences in Cambodia. As already mentioned, our analytical framework was developed in an iterative way. It may henceforth be considered as one of the final outcomes of the study. While mainly descriptive, we believe that the framework can be a useful tool for different actors. It has been tested on different fields and discussed through presentations and reviews by peers. In Cambodia, its independent utilization by a consultant (requested by the Ministry of Health and the World Health Organization office) to compare all the HEFs in the country has been a useful source of validation. The first HEF national forum, held in Phnom Penh in February 2006, confirmed that the framework was helpful to structure the debate on some key issues (Ministry of Health *et al*. 2006a). All decentralized experiences were tainted by their context. Making a conceptual step backward was needed before moving toward harmonization. The framework can also be useful for actors willing to design and implement similar strategies in other contexts. It shows that there are alternative options and, as long as key principles are respected, adaptation to local contexts should be favoured. Eventually, the framework may help scientists describe the schemes that they evaluate.

The main weakness of this study is the limited results it provides in terms of measurement of scheme performance. This is firstly due to our exclusive utilization of routine data generated either by the HEF or the hospital, which restricted the number of comparative indicators we used in the framework. A second constraint has been the non-standardization of reports and monitoring tools across HEF schemes. There is clearly a need to adopt a common format for the whole country. This will provide basic indicators that will allow some simple, but quite useful comparison between schemes.

Pro-poor policies

This paper compares different arrangements of HEFs. It explores a range of choices within a specific approach. There are various alternative policies, including the abolition of user fees (James *et al*. 2006). In a recent review, the experience of abolishing user fees in Uganda and the HEF approach have been compared (Meessen *et al*. 2006). This showed that each strategy has advantages and disadvantages.

Much less has been reported on the possible connections between HEFs and community-based health insurance. Community-based health insurance is often presented as a strategy for contributing to poverty reduction and moving towards a system of universal social protection. However, literature shows that very few schemes have reached the poorest (Carrin *et al*. 2005). This requires specific targeted subsidies for the poor, in accordance with a broader health financing context (Bennett 2004; Schneider 2004). Other barriers that may particularly affect the most vulnerable also need to be addressed, including questions related to benefit package and accountability of the provider. In the current set up, HEF strategies meet these conditions. In Cambodia, the HEF is seen as the source of funding of the poorest households' premiums under a future national project of social health insurance, in which poor households would be entitled to the same services as contributing households (Ministry of Health *et al*. 2006b).

This paper provides an estimation of the insurance cost. Under current conditions, the cost of insuring one poor individual for one year would be US$0.10 in Kirivong, US$0.32 in Svay Rieng and US$2.56 in Pearang (with linear depreciation of the pre-identification costs over 3 years). It gives a range from a community-based approach, with related limitations, to a more extended model, supported by external actors. It is likely that individual costs would decrease with an extension of the coverage. The production of an equity certificate, including a picture of the household, in Pearang and Svay Rieng was particularly time consuming and impacted the total cost of the insurance.

The Cambodian experience shows that synergies are also possible with vertical programmes. In Cambodia, as in many low-income countries, AIDS or TB treatment programmes are free to users. Yet, other barriers such as transport and stigma remain. This may be an important cause of low enrolment and further impoverishment of vulnerable households. Some HEF operators have henceforth decided to open their assistance to these groups. This may require opting for characteristic targeting, based on a specific characteristic such as a given disease, instead of the poverty profile.

It would be relevant to further explore the possible synergies between HEFs and other social assistance programmes, such as cash transfers or school allowances. Targeting the poor is not specific to the health sector. Sharing the household assessment with other sectors could be a source of efficiency and provide a more holistic response to the needs of the poorest. The databases developed in the pre-identification processes may represent a useful basis for this.

Finally, the relevance of the approach for other countries must be tested. Some experiences have recently been launched in sub-Saharan Africa (Noirhomme and Thomé 2006). The first analyses highlight necessary differences in the design (importance of food security in the identification criteria, different impacts of distance and road conditions on access, etc.). More importantly, it seems that the principle of identifying the poorest in the community and of granting them (what could be perceived as) privileges could receive less social and political support than in the Cambodian culture.

Unanswered questions and ways forward

Experience with HEFs is still short and limited in terms of settings. Some operational issues have received too little attention. For example, the fact that poverty is a dynamic phenomenon is often not well reflected in the identification techniques of the schemes. Lists of entitled households must be updated after a certain time. Similarly, there should be simple means for previously rejected households to apply for a new assessment of their situation.

These kinds of operational arrangements will come from practice. In that respect, the current variety of approaches in Cambodia is an asset. It will help the government and other stakeholders to appreciate what the best strategy is, given the local needs and constraints. To that purpose, comparison is certainly insightful, but it needs preparation. This study has revealed that some standardization in the routine data systems and definitions would be helpful.

There are also issues at the policy level. A clearer statement of pursued objectives would be useful. This would allow sharpening of indicators to assess performance, and would set clear directions for implementers. Aside from improving access to hospital care, other objectives deserve consideration. Putting protection against catastrophic health care expenditure high on the agenda may dictate specific operational orientations (e.g. progressive integration of HEFs into community-based health insurance, extension of the benefit package to third-line services). Conversely, if the HEF is conceived, first of all, as a social assistance strategy for the poorest, scheme operators will have to be more pro-active and holistic in their approach. In practice, we have observed that HEF staff often operate more as administrative clerks than as real social workers. Core poverty is difficult to tackle and granting free health care will not be enough. Capabilities such as security, self-esteem and dignity have to be addressed (Sen 1995; Alkire 2002).

The limits of this study also indicate possible tracks for further research. A real benefit-incidence analysis would be useful. Assessment of the impacts of the scheme on households requires specific primary data collection. Household surveys and dynamic studies of poverty, such as panel data analysis, would be very valuable. This could confirm the social protection function of the HEFs.

A last challenge for the scientists active in Cambodia will be to keep pace with the general development of pro-poor policies in the country. Before being a 'field of study', poverty is an unacceptable reality. Fighting it requires bold actions, including actions in the political arena. In Cambodia, as elsewhere in the world, we need to better understand how pro-poor policies emerge and we need to gain support from national actors. This understanding will be the real key to change.

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Endnotes

[1] These data were taken from the WHO website on 8 November 2006: [http://www3.who.int/whosis/core/core_select_process.cfm?country=khm&indicators=nha&language=en]

[2] Later, *Médecins Sans Frontières* launched decentralized HEFs on a pilot basis in some health centres. The Sotnikum project was taken over by Belgian Technical Cooperation in mid-2004 and is undergoing new adaptations. In the same period, the Swiss Red Cross replaced *Enfants & Développement* in the management of the Kirivong Operational District, and made modifications of the HEF at the Referral Hospital, whereby pagodas collect money for health services only, and a local NGO operates the HEF for the hospital with external funding.

[3] The hospitalization rate was calculated by using the number of pre-identified individuals as the denominator and total number of beneficiaries (both pre-identified and passively identified) as the numerator. This induces an over-estimation. In Pearang, activity reports on HEF beneficiaries do not allow a distinction between enrolled members (who have received an equity certificate) and non-enrolled beneficiaries (passively identified when they seek care). In Svay Rieng, this information is only available for aggregated figures of hospitalizations and ambulatory consultations, while this paper only focuses on hospitalizations. In Sotnikum, the figures presented above also include a small portion of beneficiaries from pilot zones in which equity certificates and health vouchers were distributed to pre-identified poor households.

[4] The HEF's medical expenditure in Sotnikum could not be disaggregated. They comprise some partially exempted patients and minor expenditures on other benefits. Total beneficiaries of the Svay Rieng scheme include patients benefiting from 75 and 50% exemptions only (30 and 11% of the beneficiaries, respectively). For the reported period, 100% of exemptions amounted to a total of US$25 073, i.e. $25.9 per beneficiary, which is significantly higher than the $21.9 presented in Table 7.

[5] Svay Rieng running costs are estimated as a portion of the salaries of two UNICEF staff members in Svay Rieng. In Kirivong, as pagodas coordinate almost all the daily management of the fund, running costs comprise only the per diems paid to the interviewers during the biannual surveys. These surveys were paid by *Enfants & Développement* and did not consume the donations collected by the pagodas.

[6] According to the collected data, Pearang invested the highest amount in pre-identification, at the beginning of the scheme. Almost half of it was spent on per diems for 'volunteers' who proceeded to the pre-identification visits. The remainder was allocated to salaries of national NGO staff during the pre-identification period, to training and to the development of material. In Svay Rieng, per diems for the control team represent half of the pre-identification costs. An additional 23% was spent on administrative staff. UNICEF did not include salary costs of its own local staff in the calculation, although it took a considerable amount of their time during the 2 years of the pre-identification process. We suspect that some other expenditure might have to be allocated to pre-identification. In Kirivong, *Enfants & Développement* donated collection boxes for the pagodas and printed vouchers for a total of US$2200. As a reminder, no equity certificates were distributed. Apart from this, pagodas were attributed an initial grant amounting to about US$3700. This is considered to be part of the pagoda's income, rather than a pre-identification cost.

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