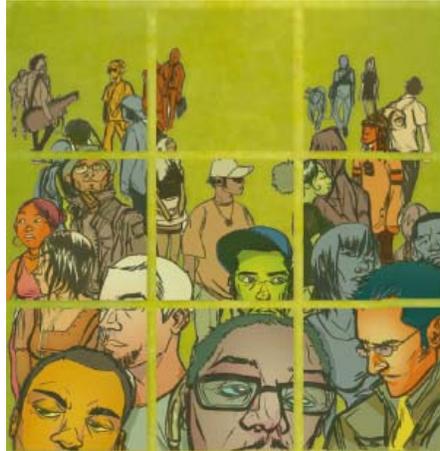




# **Protecting the poor against health impoverishment in Pakistan: proof of concept of the potential within innovative web and mobile phone technologies**

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**World Health Report (2010)  
Background Paper, 55**



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## **Protecting the poor against health impoverishment in Pakistan: proof of concept of the potential within innovative web and mobile phone technologies**

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\* Heartfile

\*\* Valentia Technologies

‡ Advisor to Heartfile on Resource Mobilization for the HHF program

§ Rockefeller Foundation

¶ Advisor to Heartfile on Technology for the HHF program

## **ABSTRACT**

Protection against catastrophic health expenditures and health shocks is a health systems goal most developing countries struggle to achieve.<sup>1,2</sup> The insurance option is often not a viable means of pooling to protect poor populations in the informal sector due to the inability to levy payroll taxes and limited capacity of governments to make contributions due to fiscal constraints. Cash transfers from health equity/social protection funds to health providers on behalf of patients to underwrite user's fees or to patients to offset out-of-pocket payments can improve access to services and help achieve equity. Such demand side financing instruments exist in many countries, but are fraught with systemic challenges, in particular, abuse, leakage of funds to the non-poor and other inclusion and exclusion errors. This paper presents proof-of-concept of an innovative model, Heartfile Health Financing (HHF), developed in Pakistan by an NGO to address these problems. HHF comprises three elements: a technology platform, a health equity fund, and a system of validating poverty and prioritizing patients. The electronic interface helps in reducing abuse and obviating undue delays. Preconfigured eligibility and prioritizing criteria check discretionary targeting and institutionalize accountability. The pilot is currently in its early stages but has the potential to inform policy to bridge gaps in Pakistan's existing health social protection system. The model can be scaled up in Pakistan and replicated in other developing countries.

## BACKGROUND

Fairness in financing and financial risk protection is one of the three health system goals.<sup>3</sup> Most health systems in developing countries do not perform well with respect to these yardsticks. Many have mixed health systems, where the predominant means of financing healthcare costs are borne out-of-pocket.<sup>4,5</sup> The latter are a barrier to healthcare and can exacerbate inequity.<sup>6,7,8</sup> In these settings catastrophic healthcare costs can push people into poverty and exacerbate poverty.<sup>9,10,11</sup> More than a 100 million people become impoverished and a further 150 million face severe financial hardship as a result of health care payments, globally.<sup>12</sup> Seventy eight million people were reported to fall below the \$1.08 poverty line as a result of health payments in 11 countries of Asia alone.<sup>13</sup>

These considerations hold special relevance for Pakistan, a country which is plagued by rampant poverty, a burgeoning population, many human security issues, and a poorly performing health system. All these challenges have been exacerbated by the devastation caused by the unprecedented floods in 2010.

Pakistan's health system comprises many institutional actors. 26.32% of the population is covered for health care costs to a varying degree. Majority pay out-of-pocket (73.68%). Even when attending the government funded system, a patient is expected to cover various costs, user's charges as well as medication and consumables. With more than 25% of the population below the poverty line of less than US \$ 1 a day, many spend catastrophically and are pushed into the 'medical poverty trap', or worst, do not receive any care. Healthcare costs account for more than 70% of the economic shocks faced by poor households.<sup>14</sup> Two-thirds of the households report having been affected by one or more health shocks and spending catastrophically during the last three years. Catastrophic expenditures are more likely to incur in rural areas and increase with the number of women per-household and members over 60 years of age. Lower income households appear to be increasingly at risk of becoming poor due to health payments even though they spend less than rich households and generally appear to have less access to care, and forego healthcare.<sup>15</sup> Household coping strategies, as a response, are reported to range from borrowing and selling assets to ignoring illness and non-treatment, patterns similar to what has been reported for other countries.<sup>16,17,18</sup>

Financial risk protection for healthcare should, therefore, be a priority for Pakistan. A recent reform agenda sets out a road map for achieving that endpoint. Proposed strategies include coverage for essential services through revenues (in view of the existing health system design) and broadening the base of pooling by augmenting health insurance for those in the formal sector and cash transfers from health equity funds building upon existing arrangements for the poor in the informal sector. Pakistan's Social Protection Strategy and a review of international experiences, reaffirm the validity of this recommendation.<sup>14,19</sup> Countries have developed similar strategies where cash transfers fund waiver/exemptions in hospitals, thereby improving access of the poor to healthcare services by paying providers on their behalf.<sup>20,21</sup> Successes with this approach have been demonstrated in Cambodia and Malawi.<sup>22,23</sup>

## **PAKISTAN'S EXISTING SOCIAL PROTECTION ARRANGEMENTS**

Primary healthcare has dominated health sector planning in Pakistan since the early 70s. Revenue funded healthcare is technically part of social protection arrangements. However, Pakistan's model does not serve the purpose of protecting users from financial risk, because of the heavy interplay of users' charges and out-of-pocket payments for services in the public healthcare system. There have been limited attempts to develop pooling arrangements. Donors and provincial agencies have explored options but have not been able to institutionalize arrangements.<sup>24,25,26</sup> Pakistan's current Social Protection Strategy does not include health in its core instruments, although its precursor instruments included a component on pooling.<sup>27,28</sup>

Existing health-related social protection mechanisms include Zakat and Bait-ul-Mal (Panel 1). In terms of total health spending, they account for 0.32% of total health financing (Figure 1). Health also gets low priority within the overall envelope; in 2007/08, only 11% of *Zakat* and 8% of Bait-ul-Mal funds were allocated for health.

A snap shot review of Bait-ul-Mal records for 2009 and 2010 shows that assistance is being provided to 192 hospitals in the country. A tertiary care hospital in the capital territory receives 28.7% of the total funds. We were unable to ascertain the percentage of requests generated from hospitals which were successful in receiving support. It has been observed that there is wide inter-hospital and inter-provincial variation in this respect and that a number of determinants account for these variations. In many hospitals, performance is abysmal. There are also reports of discretionary targeting, abuse and pilferage from the system.<sup>29</sup> It would take a longitudinal survey to document existing patterns in terms of validation of the poverty status of those that receive assistance, the costs incurred and time spent in seeking assistance, and informal payments, if any. These challenges notwithstanding, Zakat and Bait-ul-Mal offer a platform for broadening the base of social protection in health. The system is deeply entrenched and strategies exist to overcome existing deficiencies. Moreover, the institutional mechanism is also conceptually in line with what appears most feasible as an option for financial protection in health in the current environment in Pakistan.

## **HEARTFILE HEALTH FINANCING**

Heartfile Health Financing (HHF) is a demand side financing instrument, which can provide financial assistance to those that are most vulnerable to the effects of catastrophic spending in a transparent and expeditious manner.<sup>30</sup> The rationale for HHF stems from the challenges that exist in the country's social protection arrangements for health and the need to step up efforts to catalyze change. The model was developed after a due planning process (Panel 2)

The objective of creating this instrument was three-fold. First, in its capacity as a civil society agency aiming to catalyze change within Pakistan's health system, Heartfile has developed HHF to offer a solution, which can overcome current problems in Pakistan's existing social protection arrangements, in particular, Bait-ul-Mal. Secondly, HHF as a

standalone civil society-established and -run demand side health financing instrument is a scalable model in its own right, which can continue being operated and expanded by Heartfile. Further iterations of the existing model can be structured in innovative empirical designs to gain insights that can help expand its base and enhance effectiveness. And thirdly, as a replicable model, HHF can be adopted by other developing countries, many of which suffer from similar fiscal constraints and have large segments of poor populations in the informal sector.

HHF comprises three elements: a technology platform, a health equity fund, and a system of validating poverty and prioritizing patients. The technology platform consists of centralized SOAP based web services that are accessible to any computing device connected to the Internet. The SOAP-based data exchange enables creation of graphical user interfaces for computing devices of all form factors, ranging for mobile phones to desktop computers. The platform has many unique features in relation to processing requests, targeting assistance, eliminating abuse, institutionalizing accountability and empowering donors (Table 1). Once Requests for assistance are received, a composite poverty validation system, integrated with Pakistan's National Database Registration Authority (NADRA) ascertains eligibility, subsequent to which cash transfers are enabled from the 'Heartfile Health Equity Fund' (Fund) to pre-qualified providers after proof of service delivery validation (Figure 2).

The seed Fund was established with contributions from a donor agency and is currently supported by charitable contributions. Financial management of the Fund is integrated in the current platform but flexibility has been built in the software to allow for future integration of third party accounting packages or other systems. The Fund enables cash transfers in exemption systems in health facilities where users' charges are levied; it also makes payments to patients directly as a substitute to catastrophic out-of-pocket payments. In future the fund can also be used to make pavements to patient directly to cover expenses on food and travel, which can be burdensome for the poor. In structuring the governance parameters of the fund, attention has been paid to transparency and openness in disclosure and audit through appropriate policies and procedures and participatory oversight of the Fund.

Eligibility ascertainment and poverty validation is performed through a three tiered approach. Tier 1 comprises Gating criteria—anyone eligible to apply should not be covered for health by another source—i.e., should not fall in the 26.62% already covered and the expected expense should be catastrophic in nature, vis-à-vis disposable income. There is no complete consensus regarding the specific threshold for defining financial catastrophe; many operational definitions have been used.<sup>31,32,33,34</sup> HHF adopts a criteria agreed by most experts—health care payments at/or exceeding 40% of a household's capacity to pay in any year.<sup>35,36,37</sup>

Tier 2 constitutes *eligibility ascertainment* using composite scores based on four variables. One, the attending and/or referring doctor's perception with regard to eligibility on a scale of 10. Two, a similar scale of perception for a verifier, HHF staff or a volunteer. Three, a questionnaire-based poverty score adapted from a validated

questionnaire.<sup>38</sup> And four, validation of poverty through an online interface with NADRA, which uses a set of predetermined criteria used for a government-supported income support program.<sup>39</sup>

Tier 3 prioritizes cases for eligibility based on characteristics of the disease and the nature of urgency involved in treatment. Unlike other systems of eligibility ascertainment, which only determine eligibility of the patient with respect to poverty status, HHF's technology platform has the capacity to prioritize patients based on additional preconfigured rules.

## **PROOF OF CONCEPT**

The poor predominantly access public hospitals for diagnostic and therapeutic procedures where a major catastrophic expenditure is likely to incur, even though they preferentially access informal providers and private providers of ambulatory care for outpatient services.<sup>40</sup> This was the basis of selecting a public sector tertiary care hospital in Islamabad as the pilot site. Patients with an absolute lack of ability to pay receive nearly 100% coverage under HHF.

The project was pilot launched in July 2010. Time was spent in streamlining the doctor-technology interface, training staff on request initiation, development of the interface with NADRA, debugging technology, and negotiating price with service providers. To date, 25 requests for assistance have been received (Figure 3). One case could not be assessed as the patient died while in the hospital, immediately after his request was initiated. Of the 24 cases which were assessed, 2 were not approved as they did not qualify for assistance on the point scoring system. Of the 22 that were approved, 4 cases were withdrawn. In all four cases patients left hospital against medical advice due to delays in delivering care, despite the availability of funding. Of the 18 cases that were processed further, 13 have been completed in terms of the care for which funding was sought having been delivered to them. The other 5 are in the queue. Limited capacity of operating theatres is the main cause of delay. The average turnaround time for request processing was 2.5 days (from initiation of the request to approval of funding). However, the mean time from grant of approval to procedure accomplishment was 7.6 days for orthopedics and 39.5 days for cardiology—the two units initially enrolled—indicating the latter's greater workload. During the entire request seeking process, patients did not have to physically visit a third party (Heartfile, the clearing house), and were able to manage their case from within the hospital or by phone. Therefore, there were no ancillary costs (traveling and food expenditures) borne by the patient and/or the family.

HHF has now also been deployed as a tool to provide assistance to patients that hail from areas afflicted by the recent floods in Pakistan. The base of the Fund has been augmented with a view to achieving this objective. The use of this platform for this strategic objective, on its own is proof of concept.

## LESSONS LEARNT

Even at this early stage of the pilot a few strategic insights have been gained. One, it was observed that financial constraints are not the only barrier that the poor face to access care. The capacity of the public system is another factor. This was evidenced by the long wait for cardiac operations even when financing was authorized by HHF. However, the turnaround time for orthopaedic procedures was acceptable, which goes to show that this is not a universal problem. Notwithstanding, the lesson is that certain conditions are needed to enhance the effectiveness of this financing system and that a well-functioning health service is an important complement to this demand side financing tool. HHF is exploring purchasing services from the private sector for HHF-funded patients in cases where the public sector capacity is low in order to overcome this constraint.

Secondly, the system has broad appeal for agencies that are genuinely interested in enhancing the effectiveness of welfare-targeting to the poor. The systems' innovative capacity to stratify patients based on preconfigured rules as opposed to subjective decisions and innovations in workflows, request processing and ingraining transparency are appreciated as valuable. The model of supplanting human discretion with algorithms recalls an e-Government project in Karnataka called Bhoomi, whereby land records were digitized, and kiosks were installed to allow land-owners to request information about holdings, thus avoiding preferential or discretionary treatment by government officials.<sup>41</sup> Evaluation suggests that previous to Bhoomi, 66% of farmers had to pay bribes to obtain their land records, but only 3% reported having to pay bribes after the system was put in place.<sup>42</sup>

Many agencies, especially those that were making donations expressed an interest in using this model. However, for organizations seeking donations, certain features of the system are more attractive than others. By and large they see value in using the donor empowerment features but are less keen to be transparent about other details about donation utilization such as administrative costs.

It was also observed that as doctors have no material incentive to participate in this process, only those that are socially motivated engage in request processing actively; therefore there is an underreporting of those that are likely to run the risk of spending catastrophically. We hope to overcome that constraint by empowering patients in the future, and moving request seeking from being doctor-centric to the poor patient. This will have its own challenges. Advertisements for support may raise expectations unduly whereas the capacity of the system to respond may be limited, particularly with reference to the size of the Fund. An appropriate balance will, therefore, have to be achieved.

Thirdly, we also observed that certain standard operating procedures could not be followed. The system was configured to auto select vendors for delivering medical and surgical disposables in the hospital based on geographical accessibility, quality and economy of services, and efficiency in delivery. However, referring doctors insisted on selecting their own vendors. Later during informal interviews with paramedical staff and pharmaceutical representatives it became clear that there is an institutionalized

mechanism through which vendors promote their products. As HHF operated outside of this channel, it brought no additional ‘value’ to the doctor. We hope that over time, with the increasing trend towards enhancing transparency in the system, this menace would be overcome. It is indeed towards achieving these objectives that HHF has been structured.

Fourthly, important lessons are learnt when HHF is seen in the broader global context. HHF brings together two threads of programme structure and design that come from outside the health field. First, HHF draws from the experiences of Kiva and other crowd-funded micro-donation platforms, through its focus on transparency and donor empowerment.<sup>43</sup> Like Kiva, HHF gives individual donors precise controls over how their money is used, and then uses internet and mobile technologies to keep donors apprised of how their funds were distributed. This level of radical transparency might well become the expected norm for future platforms that rely on donations/public resources for health.

In addition, HHF can be seen as an early entrant into an emerging class of information systems that blend mobile technology, health financing, and health service delivery—what might be called the integration of mobile money into mobile health. In the space of mobile services for development, mobile money is one of the fastest growing areas, with industry association players such as GSMA taking a leadership role in convening around the field, and widely-covered (and copied) successes such as Safaricom’s mPesa inspiring mobile operators to begin deployments of mobile money services in at least 80 countries.<sup>44</sup>

However, combining the sectoral innovations in financial services and products for the poor, and linking these to the health sector, is only now emerging as a new paradigm. While examples of mHealth and mMoney applications are legion, those that combine the two are rare, and even rarely done at scale. As an example of a different model currently being explored, we note Changamka MicroHealth in Nairobi, Kenya.<sup>45</sup> Changamka allows families to save for childbirth by purchasing packages at pre-negotiated rates. These packages can be purchased over time via micropayments on their mobile phones using the mPesa system.<sup>46</sup> We see similar back-end requirements between something like HHF and Changamka, in terms of building a provider network and negotiating service fees, but Changamka is taking a voucher/package-services approach, whereas HHF is taking a health equity fund approach. It is possible that the next generation of models will merge these approaches, along with other innovations in social micro-insurance, to provide a sophisticated suite of financial services for poor people to assist with health expenditures, but it is much too early to predict where and when these models will begin to operate at scale.

If the experience of mPesa is any guide, such services will achieve broad deployment once they have developed strong business model for the operator, the provider, and have a simple interface that meets the needs of the user.

## THE WAY FORWARD

There are three scenarios in which this work can be carried forward. First, HHF is a sustainable model even if it continues to be run by Heartfile, the NGO. Insights gained from the initial stages of the pilot are being taken into consideration to modify workflows. The model is scalable; during the development of technology, scalability was one of the key success factors that were set for technology design as explained in Table 1. With respect to sustainability of the Fund, there is an expectation that with strategic use of philanthropy and the culture of ‘giving’ in the country there will be steady inflow of resources in the Fund over time, and that deductions from donations will be used for supporting operational costs. The donor empowerment features—transparency, efficient use of funds and traceability—are important in this respect. The manner in which funds were channeled into the Fund in the aftermath of the recent floods in Pakistan is evidence of the potential within the system.<sup>47</sup>

Other options for augmenting the base of the Fund are also being explored, in particular, socially motivated investments. In due course this may become an important source of sustaining the Fund, and developing financial instruments for loans to patients, who may not qualify as grant recipients from this system, but who run the risk of spending catastrophically, nevertheless. Many donors are currently exploring options to support this model whilst the NGO continues to operate it. HHF has been included in the final scrutiny process of the German government’s support for developing a ‘demand side’ social health protection system in Pakistan.

To facilitate scale up, technology enhancements are planned. Though the platform is scalable as it is, but it can only add users and processes within the defined scope. Currently, the platform is patient-centric and is best suited for catering to one-time high costs. Enhancements are being planned to expand its scope to enable en-bloc donations to institutions and multiple subscriptions of patients with minimum operational complexity; the latter can be achieved by decoupling eligibility ascertainment from service delivery. Planned enhancements include complete inventory and finance management, addition of Interactive Voice Response module, enabling patients to directly initiate their requests; Business Intelligence features to empower users with respect to self-service reporting and analysis; and linkages with online social networking communities (Face book, Twitter, eBay and Skype) in order to tap non-institutional/individual donors. To enable the latter, HHF Smartphone interface will be developed with social networking platforms that support one-click micro-transactions such as PayPal, iTunes and with mMoney services that enable users to pay via their mobile phone call credits. Pakistan’s impressive mobile teledensity of over 60 makes mobile telephone a ubiquitous communication device, which we hope to leverage for health financing. Banking regulations have allowed payments through mobile phone credits only recently and a few mobile operators have just begun to deploy them on a large scale.<sup>48</sup> Relevant lessons will be factored into planning. Furthermore, in hardware, we plan to shift to low-cost internet access devices (as opposed to Laptops, currently used) for collecting patient data and feeding it into the HHF system in the interest of speed, convenience, and cost.

We are cognizant of the potential threat of larger problems, which may arise in parallel with scale-up, such as leakage of funds to non-poor and other inclusion and exclusion errors. To avoid such perverse effects, HHF will need careful regulation, independent monitoring and evaluation. Alongside, efforts to scale-up this model in Pakistan, we plan to test its impact on health outcomes and health impoverishment in a randomized controlled design with longitudinal follow-up.

The second way-forward option is to make the project know-how available to other NGOs, development agencies involved with cash or other material donations/transfers for health and other social services in Pakistan. The first priority would be Bait-ul-Mal, as by institutionalizing this model, headway can be made towards addressing the institution's current systemic problems. In that capacity, the model has the potential to assist in achieving the government's official policy to exempt the poor from out-of-pocket payments and can serve as an evidence-to-policy bridge. Cambodia is another example where knowledge generated through donor-supported health equity fund pilots is being used to inform policy in the same space.<sup>49</sup>

Thirdly, this model has relevance for other developing countries as most have populations in the informal sector for which risk pooling is a challenge. Many agencies have expressed interest in the project at meetings where it was showcased for experience sharing.<sup>2</sup> HHF is a featured commitment of the Clinton Global Initiative, through which the scope of experience sharing will be further enhanced. Rockefeller Foundation's e-health network offers another opportunity. The current model enables replication. This will be facilitated to promote the public good character of HFF.

## CONCLUSION

In this paper we have presented proof of concept of a demand side health financing mechanism, which has recently been developed and deployed in Pakistan by an NGO. The proof of concept analysis has outlined certain process related lessons that need to be taken into consideration to hone the design further. If these constraints are overcome the model can be up-scaled in Pakistan and has the potential to inform policy to improve the country's health social protection system. The model is also relevant to other low income countries where majority of the poor are in the informal sector.

### **Panel 1: Pakistan's social protection system: Zakaat and Bait-ul-Mal**

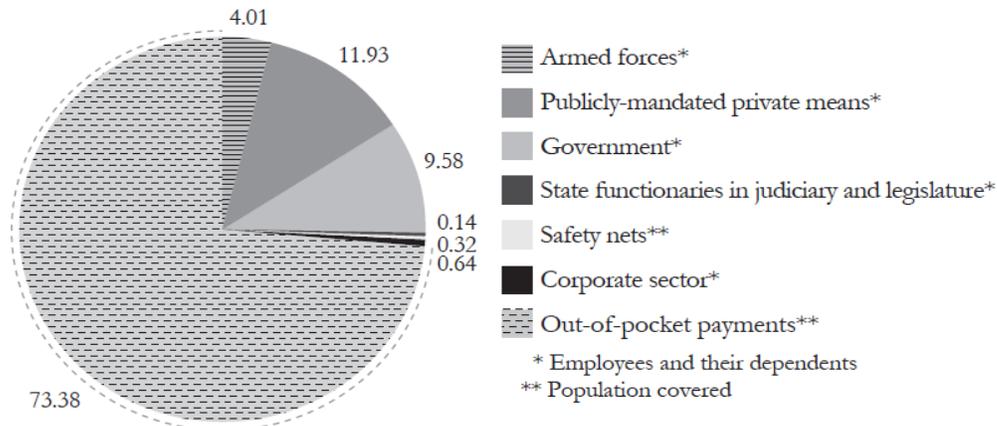
Zakat is the Muslim system of charitable contributions to achieve equity in the society.<sup>50</sup> Pakistan has also devised a mechanism to institutionally levy Zakat on cash deposits by mandating financial institutions and other collection agencies to deduct Zakat at source and deposit monies in a central fund maintained by the State Bank of Pakistan. From there, funds cascade to the provincial and district Zakat councils and committees respectively, on a population basis. In

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<sup>2</sup> The project was featured as an innovative model at the UN ECOSOC Regional Ministerial Meeting in Colombo in March 2009 and the United Nations Social and Economic Council's session in Geneva in July 2009. Another experience sharing session is planned for the First Global Symposium on Health Systems Research in Montreaux in November, 2010 where a session slot for a satellite symposium has been allocated.

addition to financing healthcare, Zakat also funds cash transfers to the poor and finances rehabilitation grants and educational stipends. Bait-ul-Mal on the other hand, is an institutional entity set up by the state to help the disadvantaged.<sup>51</sup> It is funded through the federal government budget and provides assistance for a range of programmes. Theoretically, a local government certified Zakat certificate entitles the needy to free services that involve a user charge in public hospitals; high cost diagnostic and invasive procedures not funded through Zakat are meant to be financed through the Bait-ul-Mal.

**Figure 1. Pakistan, Population receiving coverage for health**



Source: Sania Nishtar. *Choked Pipes*. Oxford University Press, 2010.

## Panel 2: Planning HHF

Systems of the seven largest organizations extending charitable services to patients in Pakistan were studied, in relation to their financial assessment criteria, request processing cycle, donations management system, and IT infrastructure deployed for running charity. Providers of clinical, diagnostic, pharmaceutical and rehabilitative services in hospitals were interviewed to analyze their established practices with reference to service request management, modes of service delivery, and invoicing and payment methods. Lessons learnt from this exercise were employed in refining the business logic of the HHF. The final model, benefited from on-ground inputs.

International models of poverty ascertainment were reviewed Peru's model of operational poverty targeting;<sup>52</sup> Zimbabwean government's PWAS matrix;<sup>53</sup> criteria used for waivers and credits in Bangladesh's family health initiative;<sup>54</sup> and eligibility criteria to benefit from the Health Equity Fund in Cambodia. Means of targeting and poverty criteria deployed in Pakistan by various organizations, proxy means testing used by food support programme of Bait-ul-mal,<sup>55</sup> and the poverty scoring system of a BISP were also studied. None offered a model which could be adapted fully. In addition, certain features of HHF entailed several levels of checks. In the current system, therefore, eligibility for funding is ascertained through a home grown three tiered approach.

The first step in planning technology, involved documenting systems requirement specifications by a senior consultant. Literature searches were conducted for an off-the-shelf solution and to explore if a local application could be implemented. None could be adopted. A three staged selection procedure was therefore adopted to select the technology partner with capacity to develop technology unique to the systems' requirement specifications.

Health Equity Fund strategies of other countries developed to improve access of the poor to healthcare services by paying providers on their behalf, were studied.<sup>56,57,58</sup> The manner in which management of the

fund is usually entrusted to a ‘purchasing body or the health equity fund operator’ which operates independent of the health facility and performs functions of targeting were reviewed. Successes demonstrated in Cambodia, Malawi and China bolstered confidence in this approach.<sup>59,60</sup>

**Table 1. Heartfile Health Financing: unique features of the technology platform and health equity fund**

| <b>REQUEST PROCESSING INNOVATIONS</b>   |   |
|---|---|
| Automated workflow with parallel tasks for various system users ensures rapid and timely response   | Quick processing obviates delays. Patient/family does not have to make follow-up visits, bears no additional costs of travel, and doesn’t make informal payments or lose working days. Health providers receive early decisions, stay updated on the request processing cycle, and do not waste time in lengthy file work |
| A bi-directional interface with SMS technology through which SMS messages can be received and sent to users   | The system enables more than 90 million cell phone owners in Pakistan to use this system  |
| Hierarchical management of tasks and records for organizational users: Ability to automatically generate messages required for processing requests at every stage and sends them to relevant users. | Organizational as well individual users are kept current on the processing of their donations   |
| Ability to send an automated alert to a relevant user via SMS/email in case of delay  | Request processing is monitored at frequent intervals   |
| Configurable request processing workflows at a granular level   | New workflow paths can be implemented as the process evolves and experience is gained   |
| <b>INNOVATIONS IN DONATION MANAGEMENT AND TRANSPARENCY</b>  |   |
| <b>Visibility:</b> i) real-time viewing of fund utilization detail at a micro-transaction level   | Capacity to update donors on a micro-transaction basis is an innovation unprecedented by international standards  |
| ii) ability to view administrative cost of managing each disbursement and the percentage of funds utilized for administrative overheads   | Highest possible level of transparency is ensured so that funds are utilized as per the criteria defined by the donor   |

Donor empowerment: donors have the ability to control donations via selection of recipient criteria (e.g., age, gender, disease, geographical region, and/or specific environmental event, e.g., disaster). Scope can be extended depending upon donor feedback or emerging situations without a need for any structural changes in the software. Can also limit the amount of a specific donation or request a pre-approval for larger amounts case-by-case

Measures to empower the donor are unique by international standards

Feedback on poorly performing recipient selection criteria to encourage donor to change their preference that are more suitable to the population cohort served by the system.

This and the previous two attributes of the system are a step towards strategically enhancing the base of the Health Equity Fund over time.

Respect for choice: Depending upon donor's preferences funds or portion of funds is placed in various virtual pools. Each pool is dynamically managed depending upon the inflow and outflow of the funds.

This complex but innovative logic enables donations to be spread to a larger number of recipients as majority of recipients would qualify funds allocation from more than one pool. The approach ensures that minimal numbers of applicants are rejected while at the same time ensuring respect for donor's preferences.

Scheduling, reminding and tracking of all pledges

Automated reminders are sent to potential donors thus reminding them of pledges made

## ELIGIBILITY ASCERTAINMENT

Integration with the National Database Registration Authority

This enables validation of poverty status based on a set of criteria used by the state

Ability of the system to categorize patients by urgency level of treatment required and financial need.

This enables setting of priority setting in case of resource constraints

## SCALABILITY

Scalability was one of the success factors set for technology design. The system is built on Services Oriented Architecture and is being run as SaaS using internet connectivity

System has the capacity to enroll thousands of donors, services providers and requesters who have Internet access and/or a cell phone.

An application, which can be accessed remotely, most commonly over the Internet from a secure hosting location, operated by a service provider responsible for security, back-up, disaster recovery, reliability, maintenance and support services

The model enables Heartfile to focus on its core business and not worry about IT management

The system is configurable and allows

The system can be integrated with existing

for integration with other standards compliant information systems

systems of the other organizations or off-the-shelf software through standard interfaces by adding interface specific software with minimal effort

Supports centrally controlled franchise or syndicated models

Conducive for local and regional scalability

## SECURITY

The system is compliant with Payment Card Industry Data Security Standard (PCI DSS) and its operational environment complies with Information Security ISO/IEC 27001 with all software development and change management carried out under an ISO 9001:2008 certified process.

Due to the critical nature of recipient's data and financial information involved, HFF has been designed to comply with number of internationally accepted information security and data transaction standards.

## HEALTH EQUITY FUND

The Fund is managed in an internationally reputable bank, which is maintaining a single dedicated country-wide cash management account. The following features are also available: web services to allow for integration, capacity to send SMS notifications, ability to integrate with routing systems and availability of facilities for drop box, online services and receipt of donations through credit card payments.

The single dedicated country-wide cash management account eliminates the need to use multiple accounts and streamlines the collection-reconciliation process through a specialized enquiry management and customer support infrastructure. Other features are relevant to scale up.

Participatory oversight of the Fund

Helps in institutionalizing transparency

Figure 2. The processing cycle in Heartfile Health Financing

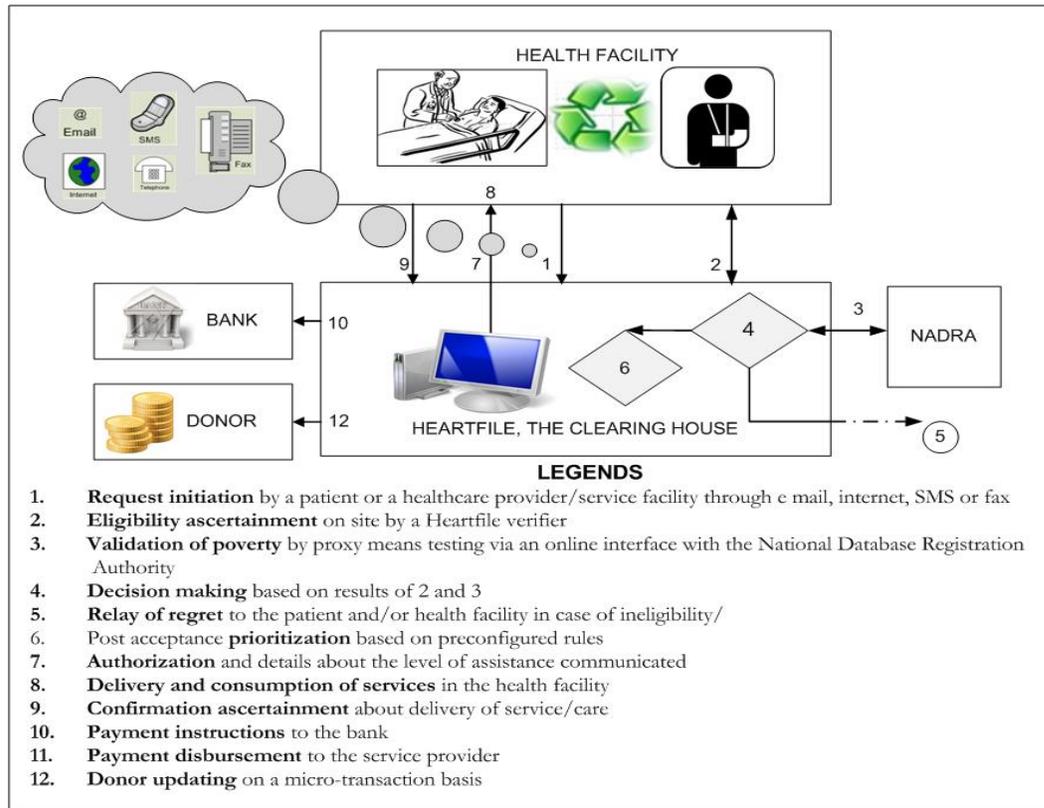
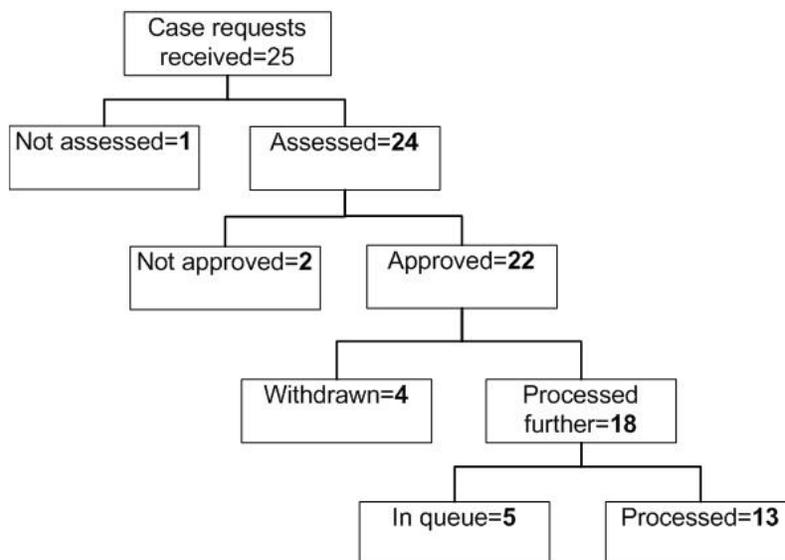


Figure 3. Case Statistics



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