
II Health insurance

5 Innovations and barriers in health microinsurance

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Health microinsurance (HMI) offers a promising way to mitigate the risks of disease and ill health, which are disproportionately borne by the world's poorest citizens. In developing countries, illness is mentioned more frequently than job loss as the main cause of poverty (Dodd et al., 2002; Asfaw, 2003) and many low-income individuals cannot afford medical treatment. Health risks pose dangerous threats to the lives and livelihoods of the poor, and health security remains integral to accomplishing many of the Millennium Development Goals. Little is known about the impact of HMI on health outcomes and household well-being, though some positive indicators of the value of HMI have recently emerged. Research reviewed in this chapter shows that access to HMI reduces out-of-pocket health expenses, especially for catastrophic health events, and improves access to quality health care for those who are insured.

HMI is one of many potential healthcare financing options for the poor. Other options range from out-of-pocket spending or credit to government-sponsored partial or universal access to healthcare services. Research indicates that 26 per cent of households in low- and middle-income countries resort to selling assets and borrowing to cover healthcare expenses (Kruk et al., 2009), suggesting that there is a huge gap in healthcare financing. Although health care is increasingly perceived as a human right and a public good, in reality resource constraints slow the deployment and scale-up of national health care financing. In these cases, HMI can be a possible alternative; hybrid strategies that combine private-sector-led HMI with the strengths of the public sector also promise to push the frontier in healthcare financing for the poor.

Private-sector HMI programmes aim to fill this gap, but designing valuable, sustainable health products is inherently more complex than with other types of microinsurance. Most health products cover catastrophic risks, which occur with low frequency, are often unpredictable, and result in a need for high-cost services. These catastrophic events are more easily insured than routine healthcare needs, so insurers have focused on them, often designing in-patient-only cover.

However, HMI programmes struggle to reach sustainable membership for these in-patient policies, partly because the poor perceive more value in cover for high-frequency, predictable and often low-cost services.

Despite the positive indicators and potential of HMI, there are many challenges that limit the growth and impact of the sector. This chapter, based on a longer thematic study that includes a literature review of 68 documents covering the period from 1999 to 2010 and interviews with 31 representative experts, discusses these challenges and suggests ways forward. The next section reviews literature on HMI impact, and is followed by a summary of key demand and supply barriers, and innovations that may move the field forward.

5.1 Evidence of the impact of health microinsurance

There is a body of literature focused on assessing the impact and opportunities that HMI creates. While Chapter 3 provides a more comprehensive overview of the impact of microinsurance, this section summarizes specific evidence of the impact of HMI. This impact falls into two major categories: 1) household finances and 2) access to and quality of care. Unfortunately, the literature still lacks information on short- or long-term health outcomes, and this section closes with a discussion of why this problem plagues insurance and related fields.

5.1.1 Impact on household financial vulnerability

Overall, significant portions of the published evidence suggest that clients of HMI programmes experience better financial protection from health shocks than do non-clients. While the extent of the effects varies, programmes consistently help reduce individual and household out-of-pocket health expenses (Galarraga et al., 2008; King et al., 2009; Wagstaff, 2007). In particular, HMI programmes protect the poor from catastrophic health events (Asfaw and Jütting, 2007), although this is not true in all cases (Werner, 2009). Results from Viet Nam indicate that involvement in HMI programmes reduces annual out-of-pocket health expenditure and/or improves access to health care (Waddington, 2009). Positive outcomes from insurance were replicated in Indonesia, Nepal, Senegal, Uganda, United Republic of Tanzania, and some parts of India (Asfaw and Jütting, 2007; Dror et al., 2009; Gertler et al., 2009; Msuya et al., 2004; Wagstaff and Pradhan, 2005).

5.1.2 Access to and quality of care

Despite this general positive impact on household finances, there is mixed evidence showing that not all population segments are benefiting from HMI. A key concern is that the extreme poor (including those living below the poverty line or

those living on less than US\$2/day in purchasing power parity terms) are not being reached. Essentially, the poorest cannot afford to pay the premiums, even in locations where some level of subsidy was supposedly available (Asfaw and Jütting, 2007; Derriennic et al., 2005; Msuya et al., 2004; Jütting, 2004; Wagstaff and Pradhan, 2005). These findings were consistent across programmes and countries, including programmes in India, Senegal, Uganda, United Republic of Tanzania, and Viet Nam.

On a more positive note, while the very poor do not access healthcare services through HMI programmes, research indicates that the poor (but relatively less poor) do experience greater access to care. In particular, many studies reveal that clients of HMI programmes are more likely to use hospital services than are non-clients. One study in rural areas of the United Republic of Tanzania revealed that sick individuals with HMI were 15 per cent more likely to receive treatment than individuals in non-member households (Msuya et al., 2004).

Other positive findings were that people with HMI were more likely than the uninsured to seek malaria treatment earlier in the disease cycle once they realized they were ill (Blanchard-Horan, 2007). The result for malaria was consistent across health-seeking behaviour for other, more general health conditions. For example, focus groups and interviews with programme managers in Uganda revealed that members no longer postpone health care until they are seriously ill, as they had before joining the programme (Derriennic et al., 2005).

Generally, individuals with HMI are less likely to self-diagnose and self-manage illness. For example, enrolment in programmes in Viet Nam increased use of medicines prescribed by a health professional, whereas they had previously used non-prescription drugs and/or relied on pharmacists for diagnostic advice (Wagstaff and Pradhan, 2005). Self-treatment can cause medical complications, such as progression of an untreated or misdiagnosed illness, complications from self-prescribed drugs, or public health problems in the case of infectious disease (Derriennic et al., 2005). Clearly, delays in obtaining health care can lead to increased morbidity and mortality in many cases (Derriennic et al., 2005; Msuya et al., 2004).

Note, however, that many illnesses are cured without intervention, so obtaining medicine early does not always produce the lowest-cost outcome. Moreover, although increased access to care is a generally positive indicator, the benefit design of an HMI programme can also influence use of healthcare services for reasons not related to medical necessity. For example, when an HMI programme covers in-patient care only, there is an incentive for clients seeking benefits and healthcare providers seeking revenue to choose expensive hospitalization for health care that could be appropriately provided in an outpatient setting. Similarly, programmes where patients incur reduced or no out-of-pocket costs for care can encourage unscrupulous healthcare providers to provide unnecessary drugs or even perform medically unnecessary surgery.

One question that has not received significant attention is whether enrolment in HMI programmes leads to an increase in preventive care behaviour, either because insurance promotes or covers such behaviour or because the members demand such changes from each other and their programmes. The issue is broader than examining the impact of discrete preventive care activity, such as immunizations, and includes other interventions in areas such as water and sanitation, hygiene, education and lifestyle.

5.1.3 Health and well-being

Health outcomes remain an elusive target when attempts are made to measure the impact of a health system and the value of HMI. There are a number of factors that mitigate the ability to measure health outcomes. The collection of valid outcome data is still considered embryonic even in developed health systems in affluent countries. Inevitably, it hardly exists in settings with low resources. Furthermore, measuring the impact of HMI requires a high degree of measurement of specific aspects, because health outcomes are highly correlated with the design of the benefits and the quality of the service delivery (Dercon et al., 2008). For example, a programme could have a limited effect on health because the HMI product is poorly matched to local needs or because the quality of care at the hospital or clinic is below par.

While the research is fairly limited on this subject, the ability to define and measure health outcomes must become a routine operational competency for a number of reasons: to help determine where money should be spent on services that make a difference in well-being, to support formative evaluations of HMI policies and processes, to permit identification of best practices for wider adoption, and to foster accountability and transparency in programme design and operations.

5.1.4 Potential of HMI

The emergence of HMI programmes worldwide provides hope that the poor will receive, at a minimum, a reliable, adequate level of access to affordable health care. Research shows that access to HMI reduces out-of-pocket health expenses, especially for catastrophic health events, and improves access to quality health care for those who are insured. There is also evidence that HMI stimulates important health-seeking behaviour such as the use of mosquito nets and receipt of malaria treatment earlier in the disease cycle. Nevertheless, little is known about the impact of HMI on health outcomes and household well-being, especially when it concerns the poorest individuals, who tend to be excluded from HMI programmes and who generally receive a lower quality of care. There is still scope to

expand member benefits in HMI. This can increase the ability of low-income individuals to access medically necessary care at the appropriate time, thus reducing financial catastrophe and promoting economic productivity and efficient use of resources.

5.2 Demand and supply challenges for health microinsurance

5.2.1 Complexity of health microinsurance

The very nature of HMI differentiates it from other forms of insurance. Health microinsurance is about service delivery rather than paying to compensate for a loss. This fact makes it extremely difficult to control demand and ensure that the services delivered are appropriate. The situation is complicated by the fact that healthcare services covered by insurance are delivered by a third party, the healthcare provider, whose motivation may be to maximize revenue. This creates another distortion, encouraging fraud and irrational pricing.

HMI is further complicated by the intense demand for services thought to be required for good health. Standards of care continuously evolve and are influenced by factors such as technology and infrastructure, greater awareness and improved partnerships. As a result, the frequency and number of types of service is increasing (such as diagnostic radiology once equipment and providers are accessible). At the same time, the cost of service is also increasing (e.g. CT scans replacing x-rays), compounding the challenge to deliver appropriate and affordable care. Low-income households suffer disproportionately from infectious disease and the consequences of poor living conditions, and they are also increasingly subject to chronic lifestyle-related diseases such as diabetes and heart disease that are traditionally more common in higher-income populations.

Amidst such challenges, HMI programmes differ on many fronts: they differ in programme design, including the degree of integration with healthcare providers, distribution and servicing approaches in relation to cover or benefits. This complexity exists for a reason; different programme configurations address different needs in the operating environment. Communities vary in relative wealth, health and exposure to health risks, as well as proximity to healthcare providers, pharmacies and laboratories. For example, some programmes attempt comprehensive cover (in-patient and outpatient), while some offer catastrophic (hospitalization) cover only. Further variance relates to whether a product covers pre-existing conditions, maternity, preventive or chronic care, as well as the maximum benefit amount and the degree to which members are required to share in costs.

Other differentiators are the types of organizations that offer the insurance and the types of relationship the organizations have with clients. Microfinance institutions (MFIs) can work with insurers to offer HMI, which should help to attract and/or retain clients, and may reduce defaults on loans. NGOs may offer HMI to increase services and protection for community members. Commercial insurers can move down-market to attract new clients. Governments run social protection programmes at state or national level, and hybrid models exist as well. The relationship between the programme and its clients has implications for the potential scale and viability of the programme, in addition to the kinds of benefits and pricing options that receive priority.

5.2.2 Demand-side challenges

At least 93 per cent of the global burden of disease falls on 84 per cent of the world's poor (Preker et al., 2002). This statistic suggests a potentially high demand for health care and for viable means to finance healthcare services. The fact that risk management options available to the poor are typically very costly and limited in their effectiveness strengthens the notion of pent-up demand for insurance. Many of the poor understand first-hand how healthcare needs become financial catastrophes; they are frequently forced to manage the cost of health care, both routine and catastrophic, through high-interest loans, depleting savings and/or causing the unplanned sale of productive assets at a discount. A survey carried out by the MicroInsurance Centre reveals that respondents in Africa, Asia and Latin America claimed that HMI is the most sought-after type of cover (Roth et al., 2007; Dror, 2007). Despite this demand, few of the HMI products currently available attract and retain the desired number of clients.

A lack of perceived value for products that cover only hospitalization, which less than five per cent of clients typically experience, is thought to be a key reason for low enrolment and renewal rates. Low-income households suffer other catastrophic expenses outside of hospitalization, for example a sustained drug regimen. Routine outpatient expenses have a greater impact on the majority of poor families than the possibility of hospitalization. Besides offering cover that is often perceived as insufficient, few HMI programmes have devoted the necessary resources to educating target populations, which often lack insurance literacy, about the potential and actual value of HMI and how it works (*see Chapter 14* for more on consumer education).

As described in Chapter 7, income constraints and the high and rising cost of health care are serious barriers to stimulating demand for HMI, and many existing programmes cost more than poorer households can pay. In fact, one study in Uganda indicated that only 37 per cent of insured households could pay their premiums from available cash resources (Dekker and Wilms, 2009), further

revealing that many who purchase HMI may be borrowing money or selling assets to do so. Seasonality of income makes it even more difficult for clients to pay premiums, regularly compounding the problems with low capacity to pay.

As many demand challenges are generic and thus relevant for all types of microinsurance products, only HMI-specific barriers have been considered here and will be further discussed in section 5.3. Better marketing and consumer education should solve some of the problems with the demand for HMI and therefore some of the issues discussed in Chapters 13, 14 and 15 are also relevant for health microinsurers.

5.2.3 Supply-side challenges

The literature review and expert interviews identified five key supply-side issues in HMI: 1) health delivery system constraints, 2) insufficient programme scale, 3) pricing and funding concerns, 4) operating model deficiencies and 5) the lack of an enabling environment.

Healthcare delivery system constraints

The capacity of the healthcare delivery system fundamentally affects HMI programme success. Some healthcare delivery constraints include:

- access barriers, such as when patients cannot reach a facility due to distance, transportation costs and lost wages;
- service quality, such as when clinics do not competently offer needed services (for example laboratory and x-ray);
- staffing, such as inadequate numbers of physicians, poor distribution of providers, or deficiencies in skill and training;
- lack of resources, in particular the frequent insufficient availability of medical supplies and drugs (Preker et al., 2002);
- insufficient or non-existent norms for performance monitoring, certification or accreditation, making it more difficult to measure and ensure quality across providers.

The net result of these constraints is a severely limited range of options where individuals can receive care. In many cases, when HMI programmes are not affordable or not available, the alternative for the poor is either to receive no care or to receive care from public-sector providers. There are cases where governments have programmes with significant outreach that function well, but in many locations the reputation of the public-sector services suggests that they are underfunded and understaffed. This current dilemma – where government-sponsored HMI programmes lack sufficient funding or are in the early stages of

development with long gestation periods, and private sector programmes lack essential governmental support – leaves the poor without a short-term solution to this financing and access problem.

Need for programme scale

The size and scale of an HMI scheme can also influence the quality of care, its price, the range of product options, and its sustainability. HMI programmes that limit access to a small number of facilities often fail to offer clients viable options for quality care (McCord, 2007b; S. Ahmed et al., 2005). Larger programmes can often procure more favourable pricing from healthcare providers (Marek et al., 2005), and more easily recruit doctors and nurses to participate in the provider network (Marek et al., 2003).

A study of seven HMI programmes in East Africa revealed that each programme preferred to seek scale by enrolling groups rather than individuals, thus reducing adverse selection (McCord and Osinde, 2005). Group enrolment can be achieved through partnerships with employers with low-income employees, as well as with MFIs or community groups (Kiwara, 2007).

Attempts to enrol groups of workers in the informal sector have been more successful than attempts to enrol individuals from the same area (Kiwara, 2007). In 1998, managers from UMASIDA in the United Republic of Tanzania tested payment frequency and renewal patterns over three years based on individual and group-administered payment plans. They found that renewals were highest when associations paid the premium on behalf of members and members paid daily or weekly sums into the group fund throughout the year (Kiwara, 2007).

Pricing and funding concerns

Improper pricing creates situations where HMI programmes cannot reach their target populations in expected numbers and/or cannot sustain themselves over time. McCord (2007b) indicated that in four of seven HMI programmes reviewed, cover was improperly priced. In all cases, the premiums were too low. Of these, only two programmes had obtained actuarial assistance. Programmes have notably different philosophies on pricing, as some attempt to understand what the market can pay and others price for profitability or financial sustainability (Dror, 2008; McCord, 2007b).

As described in Chapter 21, there are several reasons why HMI programmes make pricing miscalculations. Under-pricing stems from failing to use actuarially sound practices to estimate costs and from setting premiums based on what clients can pay instead of what is required to cover costs and generate minimum margins for expansion and sustainability. Over-pricing can occur when assumptions are based on insufficient or flawed data, on overly cautious margins, or on an expectation to break even or even make profits in too short a period or with

too little membership. It must also be noted that an actuarially sound premium may be unaffordable for clients – in which case either the product benefits must be reduced (enabling the premium to be lowered accordingly), or subsidies must be found.

Other reasons for pricing miscalculations relate to insufficient investment in support systems for the insurance schemes. Research indicates that private-sector, government-sponsored, and NGO-sponsored insurance schemes may not direct sufficient funds to management systems or proper costing techniques, particularly in Africa (Sabri, 2003). In addition, pricing of private-sector HMI programmes is problematic when governments provide free (or nearly free) health care.

Operating model deficiencies

The critical risk factors in HMI are similar to those that exist in commercial insurance. Namely, the behaviour of clients and healthcare providers will be different if there is insurance from what it would be if there were none (moral hazard); only the most sick and risk-prone individuals will purchase the product (adverse selection); and there will be exposure to fraud and potential for cost escalation.

Lack of project management and governance capabilities were mentioned by many experts as core obstacles in scaling up HMI schemes. As those issues are generic, they are not covered in this chapter.

More specifically, deficiencies in the use of technology and reinsurance were commonly identified challenges.

As illustrated in Chapter 24, technology can be employed to mitigate health-care-provider and client fraud. It also can help to control the quality of health-care services and make operations more efficient. However, research revealed that few HMI programmes were utilizing technology and management information systems to improve efficiency, increase quality of care and/or suppress fraud. In fact, in-depth case studies of seven East African HMI programmes revealed that only two were using computer systems to increase controls and provide management data (McCord, 2007b). Derriennic et al. (2005) indicate that only two of the 12 community-based HMI programmes evaluated in Uganda had a general management information system that would enable evidence-based managerial decisions to be made. However, much of the literature is silent on infrastructure elements such as the use of technology.¹

¹ For exceptions, see Derriennic et al., 2005; Leftley, 2009; McCord, 2007b.

Reinsurance supports three areas: financing, general stabilization and catastrophe protection (Dror, 2001). A reinsurance contract obliges the reinsurer to pay some or all of the costs above a predetermined threshold, thus reducing the HMI programme's risk of failure and insolvency. Scenarios run by Bonnevey et al. (2002) indicate that an HMI programme benefits more from paying the reinsurance premium than if it kept the same money for a safety margin in a reserve account. Their findings are robust regardless of how the HMI programmes are configured. The authors further illustrate that while profitable years for HMI programmes are unaffected by reinsurance, the inherent financial safety it provides allows programmes to use surpluses as discretionary monies rather than as reserves. Simulation work by Dror (2001) suggests that reinsurance contracts can stabilize programmes from the first year. Importantly, the author also notes that reinsurance pools may require several years of operation before they operate profitably. Note, however, that reinsurance can also be problematic, such as when it masks institutional inefficiencies.

Enabling environment and role of government

Government support and the regulatory environment for HMI is a critical differentiator between countries and HMI programmes. Accordingly, Dror and Jacquier (1999) claim that, regardless of which organization sponsors or initiates HMI, programmes need political, technical and financial support from the government. Governments can also allow decentralized decision-making to enable local-level decisions and negotiations to be enacted. Some research argues that the role of government is so salient and so varied that it destroys the ability to draw any general conclusions on the state of the HMI sector (Churchill, 2007). Along these lines, one interviewee emphasized that one must look at each country and government in isolation when assessing problems and solutions, and that recommendations should not be made on the basis of generalizations (Adelhardt, 2009).

Certainly, the regulatory environment can stimulate or constrain the development and scaling of sustainable HMI programmes. In addition to improving regulatory support, governments can contribute to HMI via public-private partnerships (PPPs), which are described in more detail in the next section. Seeking out these opportunities for collaboration is an important step towards overcoming the many supply-side challenges discussed in this section.

5.3 Innovations and interventions for health microinsurance

This section moves from investigating issues and impacts to examining options for meeting the needs of the poor through improved HMI business models. Several common themes emerged regarding the areas where HMI innovation is most needed:

- Expanding member benefits
- Organizational models and PPPs
- Overcoming low capacity to pay
- Use of information and communications technology

Enrolment, sales and distribution were other areas with a need for innovation, but as they are not specific to HMI they have not been included in this chapter.

5.3.1 Expanding member benefits

Member benefits should extend beyond hospitalization. Minor health shocks are a pressing concern for most low-income households, and meeting this demand has the potential to increase take-up and improve risk pools. More assistance with the cost of drugs, particularly the drugs necessary for long-term treatments, also has the potential to increase demand. Taking care of the outpatient side should also improve health outcomes and health-seeking behaviour. More regular health check-ups, early diagnoses and timely care for minor illnesses should result in a reduction in overall treatment costs, better cost control and lower claims for in-patient products. For example, VimoSEWA, an insurance arm of a large trade union that provides composite health, life and property cover to more than 200 000 self-employed women in India, discovered that one-third of hospitalization claims are for preventable illnesses such as malaria, gastroenteritis and other water-borne diseases. Leaving diseases like these untreated not only aggravates vulnerability in poor communities, but also undermines the viability of health microinsurance. Several Indian organizations have addressed the outpatient component creatively, as described in Box 5.1.

Box 5.1

Expanding member benefits in India

Established in 2003, as of May 2010 Uplift Health Mutual Fund serves more than 110 000 members in the urban and peri-urban slums of Pune, Mumbai and rural Marathwada. Supported by Uplift staff and systems, members themselves administer the scheme through regular, participatory claim settlement meetings. This mutual system, coupled with strong partnerships with various healthcare

providers, allows the programme to maintain a broad benefits package that includes in-patient surgical services, some outpatient services and all primary healthcare consultations for a very competitive price (INR 400 or US\$9 per year for a family of four with benefits capped at INR 15 000 or US\$333). Uplift also conducts monthly health camps and runs a 24-hour hotline staffed by qualified doctors who assist in navigating the complex healthcare system (Dimovska et al., 2009; Ruchismita and Virani, 2009). The programme is not yet fully sustainable, but the recent growth rate, scale achieved so far, established processes and systems, and professionalism of the core team distinguish the Uplift model from other community-based schemes.

Swayam Shikshan Prayog (SSP), an Indian NGO that promotes social and economic opportunities for low-income women and their families, is piloting a hybrid HMI model to overcome some of the limitations of community-based schemes. Financial risk for in-patient benefits is carried by an insurance company, bundled with a package of outpatient services, implemented by community workers, and delivered through a network of local practitioners, diagnostic centres and drug dispensing units. Besides hospitalization cover, members can receive additional health services and access outpatient primary and preventive services and drugs, saving 30 to 40 per cent on the usual charges.

Research shows that as customers become more knowledgeable and consider existing products, they will increasingly demand customized products. Because of extreme variations in client needs, the cost of health care, the availability of services and client demand, there is no single benefit package that can optimize all factors and receive universal acceptance. Context-specific solutions are most likely to address this issue of heterogeneity. For example, the programme known as CHAT, or “Choosing Healthcare All Together”, is a decision-making tool designed to involve the public in healthcare priority-setting. It includes community members in the benefits allocation process by having them work individually and then in groups to distribute a limited number of pegs on a board. One strength of the tool is that the exercises do not require significant literacy or numeracy for participation. The operating principle is that the poor themselves are well positioned to determine what should be included and excluded in their benefits package. Further, co-creation can create trust, acceptance and willingness to be insured (Dror, 2007; Micro Insurance Academy, 2009).

5.3.2 Organizational models and public-private partnerships

The organizational model used to provide HMI plays a key role in determining the impact of the programme, as the structure affects pricing, benefits and even long-term funding. Dror (2008), examining the insurance industry in India, found that HMI programmes can change models over time. For example, communities may start out by purchasing group insurance from commercial insurers, but later shift to community-based health insurance models, which offer more flexibility and relate better to the client need for customized products. In addition, members may agree to ration benefits more readily when they have a role in the decision-making process rather than when they attempt to understand the acceptance and rejection decisions of a distant and impersonal company. This suggestion hints at just a few of the possible connections between organizational model, marketing and product design.

Typically, grassroots HMI programmes understand low-income communities, but do not understand health insurance, while traditional insurers do not know how to reach communities or gain their trust. Insurers can bridge this gap by working in partnership with delivery channels that are more in touch with poor communities; grassroots HMI programmes can fill their capacity gaps by participating in training and receiving technical assistance. With any potential solution, however, understanding and meeting clients' needs should remain a priority.

When public- or private-sector intervention alone cannot accomplish enough, public and private players may need to join together in innovative and more substantive ways. Importantly, research reveals that advancing the goals of fighting poverty and providing access to health care often requires the cooperation and blended competencies of public- and private-sector actors, with complementary resources and roles (Marek et al., 2005; Cowley and Ehrbeck, 2007; Lomas, 2009).

Up to this point, this chapter has emphasized private-sector interventions and programmes that directly or indirectly provide HMI and access to health care. However, innovative PPPs have the potential to catalyse a greater quantity and quality of healthcare options for low-income individuals and groups. In particular, PPPs can exploit the creativity and efficiency of the private sector in concert with the fund-raising capability of the public sector. Public money may be necessary to pay for most preventive care, for health promotion or to subsidize HMI premiums. Government support for public-private partnerships can be provided effectively in a number of ways. In Ghana and Rwanda, the public-private partnership relationship is one where the government provides significant subsidies to pay for premiums. In Laos PDR, the government subsidizes health care directly. In Cambodia, the government finances equity funds; donors also

contribute to these funds, which are used to subsidize local programmes to distribute insurance to the poor.

The public sector, however, can provide more than just financial and contracting support. It is obvious that HMI needs to be developed in parallel with public health strategies. For example, developing HMI programmes in countries where health systems are very weak does not make sense. If well coordinated, the public sector may be able to provide access to underutilized healthcare facilities that the private sector can use to expand access and lower costs. Public- and private-sector players can also cooperate to create larger, more stable risk pools. Such partnerships can promulgate and enforce quality and accreditation standards. Quality assurance and the need for uniform standards of quality, cost of treatment, and accreditation are other areas where the government can play an important role.

On the other side of the spectrum, private-sector management expertise can drive solutions to reduce fraud and manage programme risk and costs. Broadly speaking, the private sector is inherently more able than government to innovate and respond to market opportunities, and “stay close to the customer”. The application of established business practices, including continuous quality improvement, actuarially-based pricing, robust product research and development, operations monitoring and use of technology are all essential to the success of HMI programmes.

5.3.3 **Overcoming low capacity to pay and liquidity constraints**

Given that affordability remains one of the key factors affecting demand for HMI, many countries support health financing mechanisms such as cost-sharing, government intervention (e.g. rate-setting) and subsidies, and the introduction of private for-profit healthcare services (Kiwara, 2007). Despite this range of options, one of the greatest challenges for HMI is to identify and implement pricing and payment methods that result in an affordable product, while generating sufficient revenue to sustain operations. Good business practices in HMI focus on increasing the flexibility of payments, identifying premium subsidies and providing “cashless” access to healthcare services, which are crucial to making HMI accessible and affordable for poor clients.

Increasing the flexibility of premium payments

Currently, the most common premium collection practice is to collect annual premiums at or around the time of enrolment. However, some HMI programmes are trying alternative approaches to make premium payments more flexible, such as in-kind premium payments and various savings-linked arrangements, as described in Box 5.2.

Box 5.2

Making premium payments easier

VimoSEWA offers clients a special fixed deposit account where interest earned on savings pays the annual premium. The innovation gives low-income clients the option to contribute to a special savings account until they have accumulated a balance sufficient to pay the premium (INR 500 or US\$11). The interest that VimoSEWA earns on the savings eventually covers the cost of the insurance premium. SEWA also offers a consumer loan designed to finance the 500-rupee premium, enabling the client to repay the loan regularly over the scheduled period (Radermacher et al., 2006).

Zurich Bolivia Group has had some success in delivering HMI products through BancoSol, a commercial bank focusing on the low-income market. One contributing factor is that sales and premium payments are linked to savings accounts. The product, sold at bank branches, offers medical consultation cover at 100 per cent, ancillary services and maternity at 80 per cent, and hospitalization and surgery at 70 per cent plus life insurance for US\$3.99 per month. Zurich Bolivia invested in customized management information systems to automate premium collections and integrate them with banking functions. Monthly premium collection is flexible: if the savings account has insufficient funds when a scheduled premium payment is processed, the system retries every day to debit the account until 1) there are sufficient funds to pay the premium, or 2) sixty days have gone by, in which case the policy is cancelled (Harmeling, 2010b).

Subsidizing premiums

Another major way of providing adequate capital is to subsidize HMI premiums. Some donors and governments experiment with temporary subsidies for health insurance. The Health Insurance Fund, a Dutch foundation with funding from the Netherlands government, provides two-year subsidies for their health schemes in Nigeria to allow the poor to experience the benefits of unknown products. The rationale is that clients will see the value of insurance and continue to pay for cover once the subsidies have been removed. Permanent subsidies are also targeted at poorer classes in several countries such as Georgia and Ghana. Given the

inability of the poor to pay for health care, it is hard to imagine valuable HMI programmes for all without subsidies and other support from the public sector.

Cashless or near-cashless payments

Financial constraints also need to be overcome on the claims side. As discussed in Chapter 6, another notable innovation to release liquidity constraints is cashless products, which allow the poor to access health care without having to pay up-front and then file a claim for reimbursement.

5.3.4 Use of information and communications technology

Technology has enormous potential to trim costs and increase efficiency for all types of microinsurance products and across the entire value chain, which is described in more detail in Chapter 24. There are many process-related applications of technology that should offer improvements in operating efficiency.

In the context of HMI, innovations in mobile phone technology can permit cost-efficient, appropriate access to health care. For example, Project Masiluleke in South Africa sends about one million text messages a day, encouraging recipients in their local language to contact a national AIDS hotline. The hotline then directs them to clinics outside their local region where they can avoid the stigma of being tested in the vicinity of peers. Responses have exceeded expectations, particularly from previously hard-to-reach young men (*Economist*, 2009). In other parts of the world, such as Thailand, compliance with a drug regimen to treat tuberculosis jumped to over 90 per cent when patients were sent a daily text reminder to take their medication.

A more direct way to use mobile technologies to improve the supply side is to provide better support for rural health workers serving patients, as there is a significant shortage of trained doctors in rural areas. The Council on Foreign Relations (CFR) has developed a “doc in a box” concept, in which they equip a shipping container to serve as a rural clinic. Trained community health workers offer services from the units, and have access to fully trained professionals by mobile phone (*Economist*, 2009). Medcall Home in Mexico is also using technology to improve health outcomes for people who cannot access clinics, by providing unlimited telephone consultations with doctors for a flat fee of about US\$5 per month (Medcall Home, 2010). CARE Foundation is testing a telemedicine scheme in rural India (*see Box 5.3*). Innovations like these have the potential to make HMI more viable in rural areas by improving early access to care, thus reducing costly claims later in the disease cycle.

*Box 5.3***Mobile technology to connect doctors with rural patients**

Based in Hyderabad, India, CARE Foundation is piloting a rural health delivery and microinsurance scheme that focuses on the provision of outpatient care in the village setting. Community members are trained to be village health champions (VHCs) who provide “health care on the village doorstep”. For routine diagnoses, VHCs use a hand-held terminal with a built-in clinical decision support system to provide appropriate medical advice and order prescriptions. In less routine cases, they liaise with a remote CARE doctor who recommends treatment through a text message. Final testing of the technology, training of health workers, and product design are currently being completed.

5.4 The way forward

This chapter suggests ways in which HMI programmes can become more valuable to clients and more sustainable over time. Specifically, some strategies are highlighted to respond to market demand, to address supply gaps by improving product design, delivery, and operations, and to integrate public- and private-sector efforts.

5.4.1 Expanding member benefits to respond to market demand

Member benefits should extend beyond hospitalization. Minor health shocks are a pressing concern for most low-income households, and meeting this demand can increase enrolment and stabilize risk pools. Furthermore, enhancing outpatient benefits encourages regular health check-ups, earlier diagnoses, and timely care for minor illnesses. These changes should reduce overall treatment costs and lower claims for in-patient care, thus improving the overall viability of HMI programmes.

HMI programmes must simultaneously educate clients in the benefits of health insurance products and respond to client needs. Currently, lack of understanding of HMI is a key reason for the low renewal rates of many HMI programmes – clients often feel that insurance is a wasted purchase if they did not fall sick during the year. Few programmes have devoted adequate resources to segment-specific market research, education and marketing, limiting understanding and acceptance of HMI products on the part of clients and even practitioners.

Compounding these issues is the fact that the poor, by definition, lack the capacity to pay. As a result, stimulating demand for HMI will require careful design of optimum benefit packages, ideally through a participatory process

involving potential clients. Furthermore, low-income individuals require flexible payment arrangements to help them finance premiums.

5.4.2 **Improved supply: Products and processes**

Currently, universal health care is out of reach for many countries. Market-based solutions are not reaching scale and may not meet all needs due to exclusions of populations, limitations of coverage, and constraints on the infrastructure and distribution of healthcare providers in many geographical areas. These factors leave the poor without reliable access to necessary health services or dependable financial risk management solutions. As discussed in this chapter, numerous challenges are restricting HMI programmes' ability to supply valuable products, and overcoming these challenges will require careful, multi-pronged intervention.

Private-sector activity, by commercial insurers in particular, has been limited to date partly because of the perceived complexity of designing and administering comprehensive (e.g. outpatient and in-patient) products. Context-specific solutions must be sought, using carefully constructed benefit packages. Until products are developed that meet client demand while remaining financially viable, a scale adequate for risk-pooling will not be attained. Furthermore, many HMI programmes lack sufficient financial support due to investor concerns about reaching scale, and, ironically, struggle to reach scale due to this same lack of financial support. Additional obstacles to scale include inadequate health infrastructure and insufficient data and technical expertise, highlighting the need for more market research and capacity-building assistance.

Since HMI is characterized by frequent transactions and small margins, efficient claims and policy administration processes are essential to success. Thus far, experience with third-party arrangements has not been satisfactory (*see Box 20.5*), and more innovation is needed in obtaining and implementing third-party support. Appropriate pricing, reinsurance cover and fraud controls also require significant attention and investment, particularly for community-based programmes. Though commercial insurers may have a better grasp of these insurance concepts, they lack an understanding of how to best reach the low-income market. Furthermore, HMI programmes face these challenges in environments that often lack stable political systems and supportive regulatory treatment of HMI programmes.

The best solution is a coordinated effort to tackle multiple challenges simultaneously, involving players from many different aspects of the HMI sector. This effort should be combined with active communication between actors, sharing their discoveries of what works – and what does not.

5.4.3 **Public- and private-sector collaboration**

The presence (or co-creation) of underlying health services provision is critical to advancing HMI and to improving health outcomes in general. Certainly, no HMI programme can be successful unless adequate healthcare services and personnel are in close proximity to the patient. In addition, public health programmes can create supportive environments to strengthen the impact of HMI. For example, public players can improve sanitation conditions to reduce overall systematic health risk and to support the viability of HMI programmes. They can also promote health education and preventive care. Such activities will encourage the kind of behaviour change that will enable HMI to have a greater impact and may also reduce risks for programmes.

In addition, to create an enabling environment, private-sector players need to make full use of the presence of any organizing bodies that consolidate groups of people on non-health criteria. This practice is critical to addressing the adverse selection and risk-pooling problem (Ito and Kono, 2010). Management of health care through treatment protocols, discharge planning and other forms of care coordination can improve consistency and efficiency.

Ideally, governments should provide 1) sustainable sources of financing, 2) a stable yet flexible regulatory environment, and 3) consistent political support. With some or all of these factors in place, the probability of HMI programmes being valued sufficiently by clients to stimulate enrolment and the programmes thriving long enough to achieve scale increases significantly.

5.4.4 **Improve evaluations**

Another element that deserves consideration is improved metrics for programme evaluation. Programmes where managers are testing innovations will certainly move through a trial-and-error stage and evolve over time; some will fail and most will require at least several years to break even. Thus, programme longevity may not be the best indicator of a viable and sustainable HMI programme. Other relevant metrics include standard financial indicators and ratios examining both clinical and administrative performance, robustness of management information systems, credible pricing reviews, and staff training and incentives (Biswas and Devi, 2008).

The selection of metrics and the continuous tracking of performance measurement play a role in advancing healthcare access and quality. Ideally, management attention should focus on measuring and tracking HMI programme indicators as well as client health outcomes.

5.4.5 **A coordinated effort to expand member benefits**

Overall, the evidence review indicates that programmes can approach health financing either to reduce vulnerability (focusing on a catastrophic event or inpatient care) or to improve health outcomes (focusing on outpatient care, prevention and chronic care). These two perspectives present a conundrum: the former is more aligned with principles of insurance, but clients desire the latter. Through efficient business models, customized benefit packages and varied payment plans, HMI programmes should seek a balance between the two perspectives. The solution should also make use of public-private partnerships (PPPs), combining the public sector's ability to source funding, pool large groups and ease regulatory issues with the private sector's innovation, insurance expertise, efficiency and technology.

Thus, the way forward for health microinsurance lies with the combined efforts of policymakers, the private sector, NGOs, government officials, management educators and technology firms. Ultimately, no efforts, even combined efforts, are likely to be successful unless inputs from the most important stakeholder – the potential client – are constantly solicited and utilized.

6 Third-party payment mechanisms in health microinsurance

Pascale LeRoy and Jeanna Holtz

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Some health microinsurance (HMI) schemes require patients to pay cash when they receive healthcare services and then submit the receipts so that they can be reimbursed by the insurer. For low-income households who may have to borrow the funds from family, friends or moneylenders to pay for health care – and run the risk that the insurer might reject the claim – the reimbursement method can cause severe financial hardship that significantly decreases client value.

One way to alleviate this up-front payment is to set up a third-party payment (TPP) mechanism with selected healthcare providers. A TPP can be defined as a model for claims payment in which insured patients are not required to pay for the cost of health services covered by the scheme. With the exception of any cost-sharing (e.g. co-payment, deductible), an insured patient need not make an out-of-pocket payment when using healthcare services, and a third party (the HMI scheme or another entity on behalf of the scheme) pays the healthcare provider for the covered services it has provided to the patient.¹ TPP mechanisms encompass terms of payment negotiated between the third party and preferred healthcare providers, and usually include components to manage medical care such as pre-authorizing hospital admissions.

This approach is not new in health insurance, though setting up and managing a TPP mechanism for HMI poses unique challenges. Using a practice-based approach, this chapter identifies lessons learned on the efforts of TPP mechanisms to provide “cashless” access to insured persons (*see Box 6.1*).

The evidence for this chapter comes from a literature review, an online survey of HMI schemes conducted by the ILO's Microinsurance Innovation Facility in 2009, key informant interviews and, most importantly, in-depth case studies. Seven schemes (*see Table 6.1*) were selected to detail lessons on designing and managing a TPP mechanism. The selection criteria for inclusion of an HMI scheme as a case study included its contribution to geographic diversity, and its size (minimum 10 000 insured persons) and longevity (in operation for at least three years).

¹ Adapted from the glossary of the ILO's Global Extension of Social Security (GESS).

Box 6.1

Understanding the vocabulary: “cashless” and TPP mechanism

Synonyms or related expressions used in the HMI sector to refer to a TPP mechanism include cashless HMI schemes, cashless claims arrangements, cashless systems and cashless benefits.

The term “cashless” reflects the perspective of an insured client, and not that of the HMI scheme or the healthcare provider. Cashless arrangements are made by HMI schemes to enable the insured to access healthcare services with no (or relatively little) out-of-pocket costs. The term cashless can apply regardless of whether the insured patient’s access is truly cashless or whether it involves some cost-sharing, e.g. co-payment or deductible.

Source: Authors.

Table 6.1

Summary of case study information

	<i>Africa</i>		<i>Asia</i>			<i>Latin America</i>	
<i>Name of scheme</i> ³	<i>Microcare</i> ¹	<i>UMSGF</i> ²	<i>Yesbasvini</i>	<i>CBHI</i>	<i>GRET-SKY</i>	<i>FMiA</i> ³	<i>Sol salud (Zurich Bolivia and BancoSol)</i>
Country	Uganda	Guinea	India	Lao PDR	Cambodia	Pakistan	Bolivia
Type of HMI scheme	Commercial insurer	Community-based	Community-based	Community-based	Community-based	Insurer + distribution partner	Insurer + distribution partner
No. covered (end 2008)	29 000	16 120	3 060 000	65 000	39 000	19 000	13 000
Provider payment method ⁴	Fee for service with fixed fee schedule	Case-based payment and drugs	Case-based payment	Capitation	Capitation and case-based payment	Fee for service with fixed fee schedule	Capitation payment/fee for service and case-based payment
Funds transfer method	Electronic transfer or cheques	Cash	Cheques	Electronic transfer	Cash	Cheques	n.a.
Health services covered	Hospitalization and primary care	Hospitalization and primary care	Surgery	Hospitalization and primary care	Hospitalization and primary care	Hospitalization and voucher for one consultation	Hospitalization and primary care (drugs excluded)
Number of providers contracted	150	53	295	24	63	4 hospitals and 25 first line health facilities	n.a.
Member cost-sharing	Claims in excess of benefits	Small deductible	Claims in excess of benefits	None	None	Claims in excess of benefits	Co-payment and claims in excess of benefits
Claims administration outsourced?	No	No	Yes (Family Health Plan Limited)	No	No	No	Yes (PROVID)

¹ The acronyms stand for the following organizations: Union des Mutuelles de Santé de Guinée Forestière (UMSGF), community-based health insurance (CBHI), Groupe d'échange et de recherche technologique (GRET), and First Microinsurance Agency (FMiA). SKY is a Khmer acronym for “Sokhapheap Krousar Yeung”, which means “Health for Our Families”.

² Microcare ceased operations in late 2009 due to a mixture of political and regulatory reasons. Nevertheless, the lessons from this scheme are relevant for this chapter.

³ FMiA ceased operations in 2011, having failed to achieve financial sustainability or to attract new funding. This does not affect the value of the lessons they learned.

⁴ These payment methods are defined in section 6.2.2.

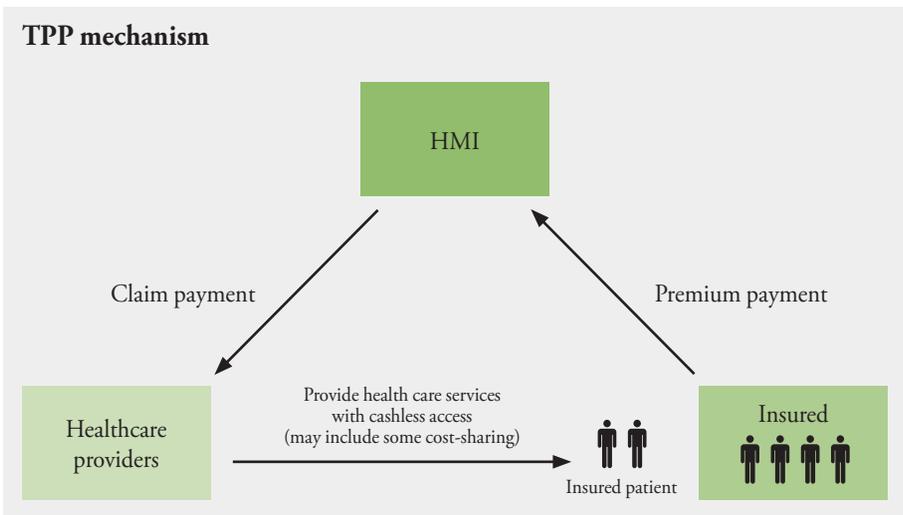
This chapter is organized into two parts. The first part presents the TPP mechanism in the context of claims models available to HMI schemes and assesses the pros and cons of third-party payments. The second part summarizes key issues to address when establishing and managing a TPP mechanism across three dimensions: 1) access to care; 2) cost of care; and 3) quality of care.

6.1 Current TPP practices

When designing an HMI scheme, practitioners must define the conditions for access to health care, and the mechanism and entity responsible for claims submissions and payment. TPP mechanisms are one of three major claims models prevalent in HMI (Radermacher et al., 2006). Two of these models provide cashless access to insured patients, while the other reimburses claims.

- 1) **TPP mechanism:** With a TPP mechanism, the HMI scheme arranges direct payment for covered services to the healthcare provider on behalf of the insured (see Figure 6.1). With the exception of any cost-sharing such as a co-payment or deductible, the patient need not make an out-of-pocket payment at the time the service is provided. As such, TPP mechanisms are frequently cited as a tool to increase the value of insurance to low-income persons, who may otherwise face a significant debt burden to fund the cost of health care, even for a short period.

Figure 6.1

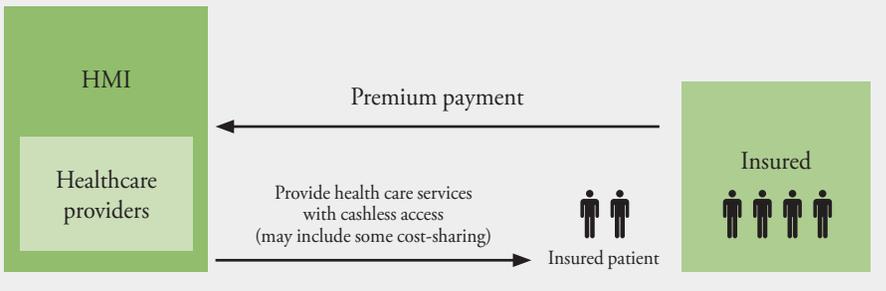


- 2) **Integrated care and financing model:** HMI practitioners may own and manage healthcare facilities (usually to provide primary health care), or healthcare providers may start HMI schemes, thereby integrating insurance with healthcare delivery. In an integrated model, healthcare providers collect the premium from the insured and provide healthcare services according to the terms of the insur-

ance policy (see Figure 6.2). The premiums collected in advance by healthcare providers are expected to cover the cost of the services. In this situation, patients do not have to submit claims. As with a TPP mechanism, in the integrated claim model insured patients have access to care without paying out of pocket or only paying a moderate portion when cost-sharing is in place.

Figure 6.2

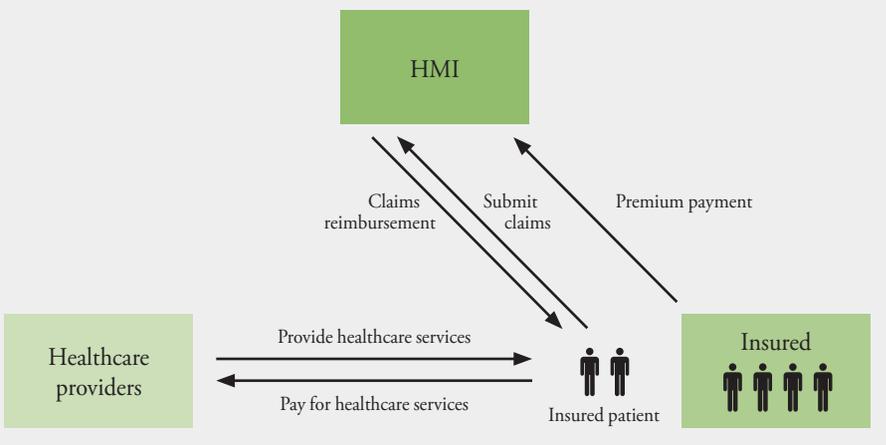
Integrated care and financing model



- 3) **Reimbursement model:** With the reimbursement claims model, the insured member pays for healthcare services at the time of use and then submits claim documents and receipts from healthcare providers to the HMI scheme to request reimbursement (see Figure 6.3).

Figure 6.3

Reimbursement model



Practitioners often mix the different models depending on contracts with providers and services covered (see Box 6.2).

Box 6.2

Claims models in HMI schemes

An online survey conducted by the ILO's Microinsurance Innovation Facility in 2009 confirmed that the majority of HMI schemes use TPP mechanisms. Among the 65 respondents:

- 52 per cent use a TPP mechanism
- 22 per cent use reimbursement models (mostly in Asia)
- 18 per cent use a mix of TPP mechanism and claims reimbursement, depending on services covered or type of healthcare provider
- 8 per cent use an integrated care and claim-financing model

Among the HMI schemes with pure TPP mechanisms, one out of four had not implemented any cost-sharing (e.g. co-payment, deductibles) or benefit limits.

Some regional patterns emerge. In Central and West Africa, TPP mechanisms appear to be a standard feature of health mutuals, for which the UMSGF is a representative example.

In India, Devadesan et al. (2004) reported that only two out of 12 schemes studied were using TPP mechanisms, including Yeshasvini. Five other schemes were integrated into healthcare providers, and offered cashless access to services. In Pakistan, the National Rural Support Programme started with a reimbursement model and is evolving towards a TPP mechanism based on client feedback. All schemes developed by First Microinsurance Agency (FMiA) use TPP mechanisms.

In Cambodia, Lao PDR and Viet Nam, TPP mechanisms were a common feature amongst HMI schemes since they tend to rely less on the integrated care and financing model and since national health-financing systems are oriented toward social health insurance with TPP. In Lao PDR, only one community-based health insurance (CBHI) network has developed so far, under the supervision of the Ministry of Health, with a TPP mechanism. In Cambodia, all five existing CBHI schemes use TPP mechanisms. The Ministry of Health has issued guidelines regarding key design features allowing TPP mechanisms with capitation to be negotiated with public health facilities for both primary and hospital care at district level. At provincial level, HMI schemes typically pay hospitals on a fee-for-service basis according to a fee schedule.

Responses to the survey from Latin America were too limited to paint a fair picture of claims models in that region. Five schemes from Bolivia, Colombia and Mexico responded to the survey. Three of these have adopted TPP mechanisms, including Sol Salud healthcare insurance services from Zurich Bolivia and BancoSol.

Source: Authors.

Compared with reimbursement or integrated models, a TPP mechanism has potential advantages and disadvantages (*Table 6.2*) that differ according to the parties involved.

Table 6.2

Possible advantages and disadvantages of TPP mechanisms		
<i>Party</i>	<i>Possible advantages</i>	<i>Possible disadvantages</i>
Insured clients	<ul style="list-style-type: none"> – Eliminate or reduce cash payment at the time of service – Enhance access to healthcare services – Reduce incidences of people delaying or avoiding the use of health care – Reduce or eliminate administrative burden (e.g. no claims to submit) 	<ul style="list-style-type: none"> – Restrict choice of providers – Require authorization prior to admission – Healthcare providers may render unnecessary services that can increase health risk and out-of-pocket costs
Insurers	<ul style="list-style-type: none"> – Simplify claims management (e.g. batch settlement as opposed to claim by claim) – Depending on the provider payment method, can align incentives for providers to provide efficient, appropriate care – Permit transfer of financial risk (all or part) to healthcare providers – Support market expansion (turnkey operations) – Improve quality of care – Increase efficiency of premium collection from clients 	<ul style="list-style-type: none"> – Increase moral hazard for healthcare providers and members, who might provide/seek unnecessary services if member has no financial responsibility when seeking care – Contracting healthcare providers may be difficult and time-consuming – Some providers may be unwilling to contract if they do not have excess capacity and do not face competition – Increase administrative costs and processes, especially in IT – Increase claims costs
Healthcare providers	<ul style="list-style-type: none"> – Increase utilization and therefore generate additional revenue – Reduce uncollectible amounts from patients – Stimulate quality of care (and therefore enhance reputation) – Depending on the payment method, can generate: <ul style="list-style-type: none"> a) a financial gain b) a stable flow of revenue 	<ul style="list-style-type: none"> – Create additional administration needed to verify eligibility and submit claims – Increased patient volume may not offset any discounts or additional costs – Increased compliance requirements for quality of care – Pressure to eliminate informal charges including bribes – Depending on the payment method and utilization, can generate a financial loss – Depending on the payment method, may increase the time taken for payments to be made

6.2 Establishing and managing a TPP mechanism

The way in which a microinsurance scheme selects, contracts and manages healthcare providers under a TPP mechanism will determine its success or failure. It is critical that HMI schemes establish and maintain minimum standards for each participating provider and for the network of providers overall. These standards should address the adequacy of three key dimensions: 1) access to care; 2) cost of care; and 3) quality of care.

6.2.1 Access to healthcare services

The first dimension relates to access to services for members of the HMI scheme through the selection of healthcare providers. As with regular health insurance schemes, the regulatory environment and geographic and service offerings must be assessed to evaluate which healthcare providers could be relevant partners for

the HMI scheme. In some locations, public healthcare providers are the only available partners that offer affordable healthcare services for the target population (e.g. Cambodia, Lao PDR). Often, the reputation of public providers is perceived as poor, but it may be possible to form productive partnerships under which quality can improve. In other contexts, public providers may not be allowed to engage in contracting with health insurers (e.g. in Pakistan, where public providers officially provide their services free of charge), pushing HMI providers to turn to private providers and negotiate costs of healthcare services in order to make premiums affordable.

One of the most difficult challenges to overcome is when there are simply not enough qualified healthcare providers in a service area. In this case, short-term solutions may be scarce, and it is possible that the TPP mechanism will not be relevant. Long-term approaches include working with governments, donors and other stakeholders to improve healthcare delivery capacity. Alternatives, including mobile clinics, telemedicine and training of community health workers, continue to emerge in an effort to address this dilemma.

Access to healthcare services may be defined by number, type and location of providers, and the mix of services they offer. The adequacy of a provider network to serve the number of enrollees can be monitored through indicators such as waiting time for appointments and the amount and type of care delivered outside the provider network. A network of providers under a TPP mechanism should include providers needed to cover the insured services. For example, if eye surgery is a covered benefit, then ophthalmology providers should be included in the provider network.

Geographic access can be measured using time and distance required to access care. The results of these measurements can be compared to benchmarks, such as 85 per cent of members having access to two or more providers within 20 kilometres or 90 minutes travel time. Such standards need to be tailored to urban and rural settings, and should reflect the existing standards in the community.

6.2.2 **Managing healthcare costs**

Once healthcare providers have been selected, the success of a TPP mechanism depends on establishing a collaborative contract with them to manage cost and align financial incentives to encourage appropriate care. To manage costs, the HMI scheme also needs to manage moral hazard and fraud risks for both health providers and clients.

Collaborative contracting process

Contracting healthcare providers to participate in a TPP mechanism is most successful when the negotiations are transparent and collaborative, and there is recognition of the objectives of both parties. Endorsements from existing participating healthcare providers can help an HMI scheme recruit new partners. HMI schemes often seek healthcare providers that agree to:

- meet minimum standards for the quality of health care, ideally under the supervision of a medical adviser from the HMI scheme;
- conduct regular monitoring of quality of care, both internally and/or by external healthcare professionals;
- payment for services provided under the terms of agreement and the use of rational fee schedules;
- utilize transparent billing and accounting systems;
- establish an acceptable procedure to verify insured patients' eligibility;
- share information with the HMI scheme regarding insured members' utilization of healthcare services;
- support the presence of a help desk on site to assist insured members.

Commitments from the HMI scheme to contracted healthcare providers can include:

- financial guarantees, such as a minimum annual payment until an enrolment threshold is reached, or placing a maximum on potential revenue lost under a capitation arrangement (GRET-SKY);
- minimum or sufficient member enrolment (Microcare, FMiA);
- cash advances (UMSGF);
- tools or support to identify insured clients and determine eligibility for covered services (Microcare, FMiA);
- agreeing to a regular review of results under the HMI scheme (e.g. volume of patients, revenues and costs) with the possibility of renegotiating terms.

Contracting healthcare providers can be time-consuming, as the contract needs to be comprehensive and clear to avoid future complications. For example, at UMSGF it takes approximately three months to contract an outpatient clinic and six months for a hospital. Both parties need to understand what is expected of them and how the relationship will work in practice. Both administrative and clinical teams within healthcare providers should be involved in the contracting process as they have different expectations of the partnership with an HMI scheme. Above all, HMI schemes should take care to make commitments that

can be met, and be prepared to reassess commitments to serve the long-term interests of all parties.

For HMI schemes that contract public healthcare providers, it is necessary to involve the health authorities (that supervise providers) at an early stage to support the contracting process as well as to enforce the contract in some cases (GRET-SKY, CBHI).

Negotiating the payment method

With a TPP mechanism, HMI schemes usually pay contracted healthcare providers according to a pre-determined method of payment. The payment method is critical to the scheme's success. Four common payment methods are outlined below. Each method provides different incentives and disincentives for providers to control the cost and quality of services:

- **Retrospective payment on a fee-for-service basis:** Providers are paid (à la carte) for each service performed that is covered by the HMI scheme. Fee-for-service payments can be based on a fixed fee schedule for each service, group of services or on the provider's billed charges. In the case of the latter, payments may be based on a percentage of billed charges (i.e. when a discount is negotiated or when cost-sharing is in place). This is the most prevalent model amongst the schemes surveyed. In developed countries, this payment method is usually associated with an increase in both the volume of services provided and overall healthcare expenditure (Langenbrunner et al., 2009).
- **Retrospective case-based payment:** Providers are paid an all-inclusive (sometimes called “global”) amount, typically for all services provided in connection with a hospitalization or an episode of care that may include pre- and post-hospitalization care. Per-case payments can be constant, or vary according to factors such as diagnosis or age of patient that can greatly influence the cost of treatment.
- **Retrospective payment per day:** Providers are paid an all-inclusive amount per day of hospitalization. Per diems can vary by type of service or bed, such as intensive care, surgical or medical ward days.
- **Prospective payment by capitation:** Providers are paid a fixed payment per enrollee for a defined period, usually one year. Capitation payments are not affected by utilization of services (volume and type) by the insured; they are made prospectively (in advance) to the healthcare provider that the enrollee selects. Capitation may apply to a specific healthcare service or set of services, such as primary (outpatient) care, or capitation can apply at a “global” level, i.e. for all health care including primary, secondary and tertiary care.

It can be difficult to develop fair payments, regardless of the method used, given the wide variation in baseline charges, and the tendency for charges not to

be based on cost plus a reasonable margin, or to be supported by accurate data. Another challenge with all payment methods is that healthcare providers may attempt to “balance the bill”, or collect additional fees not reimbursed through the payment made by the TPP mechanism.

From the perspective of the scheme, each payment method has advantages and disadvantages, as highlighted in Table 6.3. Measures to offset disadvantages vary depending on the method of payment chosen (ILO STEP, 2006; Langenbrunner et al., 2009).

Table 6.3

Advantages and disadvantages of the different payment methods		
<i>Method of payment</i>	<i>Advantages</i>	<i>Disadvantages</i>
Fee-for-service	<ul style="list-style-type: none"> – Easy to understand and implement; typically the method used by healthcare providers – Encourages provision of services, which can aid access to care for low-income households – Generally well accepted by healthcare providers 	<ul style="list-style-type: none"> – Fuels medical inflation by providing a financial incentive to: <ul style="list-style-type: none"> – over-utilize services (increase volume); – raise billed charges if these are the basis for calculating payments (increase unit costs) – HMI scheme bears entire financial risk and may try to restrict claims by limiting covered services or by being prone to reject claims – Can require unpopular interventions to reduce inappropriate claims
Per case	<ul style="list-style-type: none"> – Simplifies claims administration – Transfers financial risk for length of stay to providers – Encourages efficient care management (shorter length of stay) 	<ul style="list-style-type: none"> – Incentive to diagnose and bill for more complex (higher revenue) cases – Incentive to reduce length of stay and services that may be necessary – Incentive to make unnecessary admissions – Difficult to establish a fair cost per case for all patients (i.e. including outliers)
Per day	<ul style="list-style-type: none"> – Simplifies claims administration – Transfers financial risk for cost per day to providers – Encourages efficient care management (lower intensity of service per day) 	<ul style="list-style-type: none"> – Incentive to increase length of stay – Incentive to reduce services that may be necessary – Incentive to make unnecessary admissions
Capitation	<ul style="list-style-type: none"> – Simplifies claims administration (no claims necessary) – Steady revenue stream (prepayment) for providers (cash-flow advantage) – Allows the transfer of financial risk to healthcare provider – Encourages providers to provide preventive care and encourage earlier and less costly treatment 	<ul style="list-style-type: none"> – Providers generally unreceptive due to inability to manage financial risk of care – Difficult to price accurately without large enrolment due to high variation in cost to care for small numbers of patients and overall lack of data – Incentive to reduce care – Incentive to exclude high-risk groups (elderly, persons living with HIV/AIDS, those with pre-existing and chronic diseases in some cases) – Encourages inappropriate referral to other providers for expensive cases when some but not all healthcare services are covered by the capitation payment – Can be difficult for insurer to obtain utilization (encounter) data to reconcile payments with actual experience

Most of the surveyed schemes with TPP mechanism use a single method for payment, though 36 per cent use a mix of two or more payment methods. The majority (69 per cent) have negotiated fee-for-service payment terms, while 40 per cent use a case-based payment method and 17 per cent have negotiated a prospective payment based on capitation.

The following lessons emerge from the case studies:

- Payment methods that transfer some financial risk to healthcare providers (case-based, per day or capitation) have greater potential to contain costs than fee-for-service payment, but require additional measures to control the quality of care (*see section 6.2.3*). These methods are usually more difficult to negotiate with healthcare providers (*see Box 6.3*).
- Capitation may be an appropriate way to compensate providers for high frequency/low cost (i.e. more predictable) health events, including outpatient care. This is because it is easier to estimate in advance how often people will seek primary health care in a given period and the approximate cost involved. This type of prepayment is more difficult for complicated and infrequent care such as hospitalization. Capitation can also reduce administration costs, because claims do not need to be submitted and processed for each healthcare encounter (*see Box 6.3*).
- Capitation is better adapted to contexts where a critical mass of enrolment can be achieved with a given provider. This is more often attainable when the choice of healthcare providers is limited and/or the population enrolled is significant. Capitation payments are easier to set and manage in settings where the provider can deliver the full range of care.
- Mixed payment methods may be suitable in many respects (i.e. capitation for primary healthcare providers/services and per case for hospital cases), but often complicate administration and increase management costs.

Limiting moral hazard and fraud

Moral hazard and fraud are standard challenges with health insurance. Since insured patients in HMI schemes with a TPP mechanism do not bear the cost of health care at the time of service, the incidence of moral hazard can increase as clients may view the care as free and use unnecessary services. Similarly, healthcare providers often view the insurer as having a greater capacity to pay than a patient who must pay directly and thus may see an increased opportunity to deliver services that are covered but may not be medically necessary.

HMI schemes with TPP mechanisms face similar challenges regarding fraud to schemes that use reimbursement models. Fraudulent behaviour can occur when non-insured patients pose as covered persons, or insured clients seek non-covered services; providers can engage in fraudulent acts by billing for services not delivered or providing unnecessary services to generate additional revenue.

Each of the seven HMI schemes studied has implemented measures to control moral hazard and fraud through strategies to influence both the providers' and clients' behaviour.

*Box 6.3***GRET-SKY's experience with capitation**

GRET-SKY wanted to provide clients with free access to primary health care to limit expensive hospital cases (thereby contributing to the sustainability of the scheme) and offer them an attractive benefit. Capitation was felt to offer the best payment method for primary health care, in part because it could limit the administrative costs associated with the high claims frequency of primary health care and because it limited the financial risk for the HMI scheme.

Establishing a capitation payment arrangement required lengthy negotiations to address concerns of public healthcare providers to generate sufficient revenue. Several factors made this negotiation successful:

- The scheme had support from the Ministry of Health as well as the local health authority.
- The first contracted public health facilities were supported by an international NGO that was open to alternative payment methods.
- The contracted public health facilities had excess capacity and were seeking more patients.
- All calculations to determine the capitation amount were transparent to all parties. GRET-SKY compensated any financial loss suffered by the provider during the first year if the charges for services rendered exceeded the capitation amount.
- When the number of insured clients was limited and providers were reluctant to participate, the capitation payment per client was “boosted” in order to guarantee a minimum amount of revenue to participating providers. This per member “capitation boost” gradually decreased as the membership increased.

Once a year, GRET-SKY evaluates the appropriateness of the capitation amount to achieve financial viability for both parties, and makes any adjustments needed. So far, the capitation amount has progressively decreased for many contracted providers, as rates were initially “boosted” to encourage participation. GRET-SKY's experience showed that approximately two years was necessary to eliminate subsidy of per-person capitation rates (rather than one year as initially envisaged).

Source: Authors.

Moral hazard and fraud by healthcare providers

It is necessary to monitor utilization, cost and patient satisfaction delivered under various payment systems, each of which can generate specific types of moral hazard (*see Box 6.4*). For example, in fee-for-service environments, providers have a well-known tendency to increase the number and cost of services. To manage moral hazard, schemes can adopt a number of approaches, as described below.

Product design: limit maximum total benefit per person for hospital care (FMiA and Microcare). This can be an effective way to limit risk exposure, but it limits benefits for necessary care for those who suffer a catastrophe. This in turn can reduce both the real and the perceived value of the HMI scheme from the client perspective, making the right balance difficult to achieve.

Claims administration: analyse claims and utilization data. A variety of indicators related to high or low costs or utilization can help identify instances of moral hazard. These include:

- number and cost of claims (total, segmented by client category, location, provider, type of service and category of illness);
- frequency and cost per unit (e.g. number and cost of hospital admissions per 1 000 members per year);
- average length of stay, expressed in days per admission (for hospitalizations);
- incurred claim ratio (incurred claims/earned premium);
- billed charges as a percentage of total capitation (for schemes with capitation).

Monthly monitoring of key indicators is essential to scrutinize a scheme's incidence rates and identify moral hazard. Interpreting these indicators requires a management information system (MIS) and knowledge to enable data to be analysed. For schemes that use a case-based payment, the focus should be on ensuring that the length of stay and provision of services during that stay are appropriate, and that providers do not claim more complex diagnoses or treat unnecessary cases to increase revenue. In schemes such as FMiA, the claims were sometimes reviewed twice before being sent to the insurer for payment: a first review was made at the time of discharge by a sales officer, who could then refer questionable claims for a second review to FMiA's medical adviser. Schemes using a prospective payment approach, such as capitation, need to monitor for under-service. Moral hazard can occur in the form of providers restricting care, because minimizing the provision of care can maximize profits.

Medical management: implement utilization controls. Interventions such as pre-authorization or concurrent review can manage both cost and quality prospectively and concurrently and reduce moral hazard. However, such activities (e.g. implementing treatment guidelines) can be complex and costly to administer, and are often perceived as a hassle by providers as well as clients.

Box 6.4

A co-payment to limit over-utilization by clients induces moral hazard by providers

The HMI schemes in the case studies that use capitation do not require any out-of-pocket costs to be borne by clients, even for primary health care (e.g. outpatient consultations). In GRET-SKY, a contracted provider requested that a co-payment be implemented to discourage frivolous use of healthcare services. What happened, however, was that the healthcare provider actually encouraged additional (and potentially unnecessary) visits to supplement the capitation payments with the co-payments. The co-payment has since been discontinued and the provider receives compensation for care solely through capitation, while the GRET-SKY monitors utilization and patient satisfaction to assess whether access to and use of care is appropriate.

Source: Authors.

Moral hazard and fraud by clients

When access to health care is free or nearly free for patients, the risk of over-utilization, especially of outpatient services, increases. A common strategy is to include some form of patient cost-sharing (Microcare, UMSGF). Additionally, many schemes implement a gatekeeper mechanism, which requires a referral by a primary care provider to access specialist consultations or hospital services. Enrolment in an HMI scheme often triggers an initial period of high utilization due to pent-up demand and deferred care, especially for elective surgery (e.g. hernia repair).

Lessons from case studies show that HMI practitioners understand that a target of zero fraud is not realistic. Strategies for preventing fraud include:

- **issuing a family or individual insurance card** with a photograph. Findings from the online survey show that 67 per cent of the schemes with TPP mechanisms use an identification card with a photograph and 14 per cent use a more sophisticated smart card that allows electronic verification of eligibility. Photo ID cards, however, pose challenges and there are ways of verifying identification without such cards (*see Box 6.5*). Issuing cards adds administrative costs, and therefore savings through fraud reduction must compensate for the additional cost. Cards may not be effective in preventing fraud when healthcare providers do not use them correctly, or if the provider is complicit in the fraud, e.g. it receives payment from the insurer for an uninsured client who may lack funds to pay for care. The preparation of photo ID cards can also be a problem, as often the client and insured family members must obtain, pay for and submit photographs to the insurer. Finally, in some locations photographs may be unacceptable for religious or other reasons, particularly for females.
- **checking identification through liaison officer and technology.** A liaison officer can foster a “client culture” by helping clients to better understand the

benefits of their HMI scheme, and ease the burden on providers to verify eligibility. Nevertheless, the healthcare provider still has an important role in managing fraud, and must be trained accordingly. Having an insurance liaison inside contracted health facilities entails a risk of internal fraud that needs to be heeded. For example, Microcare rotated nurses managing the liaison function at a healthcare provider to limit the potential for collusion. Microcare also experienced a reduction in claims of 30 per cent when a computerized check-in desk was introduced in a clinic. The reduction was attributed to a reduction in fraud, which could occur when uninsured persons accessed care using the name of an insured person.

- **requiring pre-authorization of high-cost services.** A gate-keeping function to limit fraudulent healthcare utilization is especially important when providers receive fee-for-service payments (FMiA, UMSGF and Yeshasvini). Typically, the insured person must request an authorization from the scheme to access healthcare services. Rapid authorization is important for client satisfaction. Authorizations for emergency cases are usually given within 24 hours. When possible, a toll-free telephone/fax process can be implemented to speed up the process (FMiA and Yeshasvini). With advances in and more widespread availability of technology, internet-based options using mobile phones, computers or point of service devices are being introduced. Pre-authorization is not applicable to primary health care due to the high frequency of services and less clear criteria available for their use (e.g. when is it necessary to seek medical care for a headache?).
- **providing accurate lists of eligible clients** to healthcare providers, which is critical for schemes with capitation payment. This strategy is simpler for HMI schemes that limit enrolment, e.g. to once a year, but more demanding for HMI schemes, such as GRET-SKY and CBHI, that maintain open enrolment. Both of these schemes have clear procedures and deadlines to ensure that eligibility data are provided to health facilities early each month.

Box 6.5

Preventing fraud without photograph identification

After testing a smart card with photographs that could be used at a hospital's intake desk, FMiA began a simpler identification process that used national identity cards (NIC) with photographs. FMiA issued an insurance card without a photograph, and requested the insured to show his or her NIC at the time of admission. The risk of fraud remained for children, who have no NIC. In cases where a NIC had not been issued or was not available, birth certificates were requested. A thumbprint identification system was considered, but ultimately not implemented due to the time and cost expected to obtain thumbprints for all members at the time of registration. FMiA additionally managed fraud using a pre-authorization process and a "gate keeping" system with FMiA staff located at contracted hospitals.

Source: Authors.

6.2.3 Managing quality of care

In addition to access and cost, the third dimension of standards relevant to setting up and managing a TPP mechanism is quality of care. Quality may be defined using both objective and subjective criteria, and can be measured with clinical indicators as well as non-clinical or service indicators. Clinical outcomes, such as infection rates, are examples of objective quality of care indicators. Since clinical outcome data and/or benchmarks are often not available, other criteria may be used as a next best alternative. For example, the credentials of healthcare providers are often evaluated as a proxy for clinical quality. Sometimes claims data can be mined to develop retrospective assessments of quality, using healthcare professionals to analyse treatment patterns. Service quality, defined by indicators such as hours of operation or scope of services offered, may also be measured.

Subjective quality of care, sometimes referred to as the patient experience, typically reflects a patient's view on the health care he or she has received. Subjective views may be measured through surveys or focus groups on a range of topics such as comfort of facilities, perceived attitudes of healthcare providers and value for money.

HMI schemes require members to use a defined network of healthcare providers when they implement a TPP mechanism. Thus, poor quality of care provided at network facilities – whether real or perceived – can impair client retention and the reputation of the HMI scheme. As indicated in Table 6.3 above, HMI schemes that use capitation payment can be even more vulnerable to quality-of-care issues, as providers have a financial incentive to restrict care.

Measuring quality of care

To promote quality of care, HMI schemes must find objective ways to measure it (see Box 6.6). One way to do this is to compare the actual number and type of services (e.g. admissions per thousand clients, number of contracts to the primary healthcare provider per person per year, number of prescriptions per consultation, percentage of children immunized) to expected morbidity (sickness) and mortality (death) norms. Developing norms can be a challenge. Ultimately, with sufficient quality and quantity of data, the comparison should be possible. However, great care must be taken when interpreting the data because there can be many natural variations in clinical outcomes among patients. These variations may be explained, for example, by nutrition, education, sanitation, and occurrence of natural or man-made disasters.

Box 6.6

Monitoring the service quality of health care

Zurich Bolivia and BancoSol have a TPP mechanism in place with a third-party administrator (TPA), PROVID. PROVID receives a capitation payment (and then pays contracted healthcare providers according to various methods of payment including fee-for-service). PROVID monitors utilization of health services and maintains claims data. It also performs regular spot checks of service quality in contracted health facilities by sending its staff to pose as potential patients to test how they are received and treated.

Because BancoSol distributes the HMI product to its microfinance clients, comment boxes have been placed in BancoSol branches to allow insured clients to comment on the HMI services. It is critical for the microfinance institution to make sure that clients are satisfied with the HMI scheme as it may affect BancoSol's reputation.

Source: Authors.

HMI schemes can evaluate the frequency and type of healthcare services being delivered to individual patients, or by specific healthcare providers. The evaluator (ideally a clinical professional from the HMI scheme) can meet healthcare providers to discuss unusual cases and trends, and develop appropriate interventions.

Setting standards for quality

In all seven case studies, the contracts for healthcare providers establish standards for various aspects of quality. For example, contracts often require that insured patients be treated in the same way as non-insured patients in terms of access to services and clinical standards of treatment. The behaviour of healthcare providers towards HMI scheme members should be monitored for any evidence that members receive inferior service. This can occur because of a perception that a patient not paying cash out-of-pocket at the time the service is provided, or who is receiving discounts or special rates, is socio-economically inferior. Some contracts under TPP mechanisms stipulate adherence to treatment protocols or care guidelines, and ensure availability of essential drugs.

In other contracts, such as that of UMSGF (*see Box 6.7*), healthcare providers are prohibited from requesting additional fees beyond those laid down in the plan of benefits, such as co-payments. Such provisions exist to discourage fraudulent practices, which can be rampant in facilities where salaries are low or a culture of corruption prevails.

For some HMI schemes, a performance-based contract may be a useful way of promoting quality of care. GRET-SKY is testing a performance-based contract

with a capitation payment adjusted by utilization rates. Targets for utilization of services are set with each provider and a capitation payment is associated with this target. If the actual utilization is below target, providers receive a decreased capitation payment. When utilization exceeds the target, healthcare providers also receive a decreased capitation payment, but to a lesser extent. The objective is to encourage health providers to achieve an optimum (desirable) utilization, and to discourage potential over-utilization. The use of utilization as an indirect indicator of clinical quality can be useful in a context where more specific measures of clinical quality may be unavailable.

Box 6.7

Improving quality of care

Despite collaborative relationships with healthcare providers, quality of care is a core challenge for UMSGF. The HMI scheme has taken a number of measures to improve the situation.

Contracted health facilities are under-financed and face significant drug shortages. To improve the quality of care (and client satisfaction), UMSGF began to cover the cost of drugs purchased in private pharmacies when prescribed by a contracted hospital. Unfortunately, this initiative resulted in a rapid rise in claims costs and thus had to be stopped. Now, a revolving fund for drugs has been set up with donor support to purchase a stock of drugs that can be provided to clients when a prescription is not available directly from a contracted provider.

Additionally, financial incentives have been set up to encourage medical staff to provide appropriate care to insured patients and limit unauthorized payments by patients (e.g. bribes for drugs). More recently, a liaison officer was assigned to each contracted facility to ensure that insured patients are appropriately welcomed and served.

Source: Authors.

Promoting clinical quality through medical advisers

Related to clinical quality, cases studies show that medical advisers can play a key role in measuring quality of care against defined standards, especially when a healthcare provider is not directly involved in claims and care management (FMiA, UMSGF, GRET-SKY, CBHI). A medical adviser monitors quality of care with healthcare providers through the following main functions:

- **Assessing whether insured patients receive appropriate healthcare services** according to diagnosis and health status. This assessment can be either 1) prospective, when authorizing treatment or assessing a provider against network participa-

- tion criteria; 2) concurrent, such as through case management of a hospitalization; or 3) retrospective, through analysis of claims, encounters or surveys of patients.
- **Screening and periodically auditing the general quality of care** in contracted health facilities. Quality indicators can include simple and measurable criteria such as hours of operation, availability of medical staff, availability of essential drugs and diagnostic equipment, and hygiene.
 - **Implementing and monitoring compliance with standard treatment protocols.** Such protocols may be in the public domain and published by organizations such as the World Health Organization or a Ministry of Health, as seen in Cambodia and Lao PDR, or they may be proprietary and developed by the HMI scheme and/or its network providers.

Promoting service quality through liaison officers

All seven case studies confirm that clients perceive greater quality of care when a liaison officer assists them in accessing health services. Liaison officers often perform tasks such as:

- welcoming patients and orienting them towards the facility;
- verifying benefits and eligibility;
- registering new enrolees and collecting premiums;
- visiting hospitalized patients and serving as an advocate to ensure that appropriate care and services are being provided, and helping prepare the patient and family for discharge; and
- collecting feedback on patient satisfaction and outcomes through surveys or interviews.

Liaison services can increase the perception of value and quality and in turn increase trust in the scheme and encourage renewals, contributing to the scheme's sustainability. However, since they have a cost, HMI schemes must evaluate when and how to provide such services efficiently. For example, the scheme must decide whether to provide a liaison service just for hospitalizations or also be present in outpatient settings. An optimal cost-benefit arrangement may be achieved by providing a liaison at facilities that have a minimum number of clients or claims (Microcare). Another cost-efficient strategy can be for a liaison officer to cover several facilities on a rotating basis, or only during peak hours (GRET-SKY). Technology developments such as the spread of mobile phones have also stimulated development of call centres, which can provide many of the liaison services desired remotely and at considerably lower cost (five case studies, including FMiA).

Ensuring timely payment to healthcare providers

In a context where healthcare providers often struggle to maintain sufficient cash-flow to fund operations, it is critical for an HMI scheme with a TPP mechanism to make timely payments to providers. Contracts with healthcare providers typically stipulate the terms for payment, including the maximum time allowed for payment of capitation or reimbursements. Failure to abide by contractual terms can lead to refusal to treat patients or to demand prepayment, which can damage the HMI's reputation amongst both insured and providers, and may even result in contract termination. Managing quality under a TPP mechanism therefore includes paying health providers on time. Payment by cheque or electronic transfer can lower the risk of fraud or loss, though some schemes (e.g. UMSGF and GRET-SKY) use cash.

Lessons learned from retrospective TPP mechanisms that pay healthcare providers on time are:

- The claims administration team needs to have a clear structure and spot checks must be carried out on problematic claims.
- A medical adviser should conduct clinical reviews focusing on problematic cases only.
- Computerized systems should be in place to provide data for prices and services covered.
- Decentralized systems are needed to capture data directly at the facility level (admission and discharge).
- Electronic transfers and/or cheques should be used to pay providers to save costs and time and avoid the risks associated with cash transactions.

Microcare reduced its claims payment period from 30 days to 14 days with a reorganization of the claims department into five units, each specialized in one task in the claims process (*see Box 6.8*). At Yeshasvini, claims are sent by healthcare providers to the TPA, which assesses the claims with support from a medical adviser. These claims are reviewed by the Yeshasvini Trust during a monthly meeting and those that are approved are paid by cheque to the TPA, which in turn pays healthcare providers by cheque. Payment terms for healthcare providers vary from 15 days (target) to three months. Delays in payment are often problematic, especially for smaller clinics that tend to have cash-flow problems.

Box 6.8

The claims administration function

In 2009, Microcare restructured its 12-person claims administration team into five units. Each administrative unit fulfilled a distinct function to improve efficiency:

- 1) **Invoicing:** claims were matched to healthcare provider invoices (sent often in batches). Discrepancies were sent to the investigation unit.
- 2) **Data entry:** data from paper claims were entered into the computerized database. The system automatically alerted Microcare staff when charges for key services and drugs exceeded acceptable limits. A query was made to validate the appropriateness of the charge.
- 3) **Data analysis:** a medical doctor reviewed the appropriateness of the diagnosis and corresponding treatment, and a drug specialist checked prices and benefits allowed for drugs to identify possible occurrences of fraud or inappropriate billing. Questionable claims were queried further; approved claims were sent to reporting so that questionable claims did not delay an entire batch associated with an invoice.
- 4) **Investigation:** administrators followed up with healthcare providers to resolve questions on claims (e.g. missing or inconsistent information, unexplained charges).
- 5) **Reporting:** approved claims were sent to a supervisor for a final review and approval, which triggered a request to the accounts department to issue payment.

Source: Authors.

With capitation, the HMI scheme pays a fixed amount per insured person assigned to a healthcare provider. A per capita payment approach can be quite simple when enrolment information is accurate, timely and fixed for a longer period. Capitation payments become complex to administer when a scheme permits open enrolment, or when retroactive adjustments due to delayed or incorrect enrolment data are required. Capitation can be more difficult to administer if the per capita payments are made more frequently (e.g. monthly), and when payments by members vary depending on factors such as age, gender or location (GRET-SKY, CBHI – see Box 6.3). Additional challenges can arise relating to premium collection and policy administration. For example, a waiting period may be mandatory to reduce adverse selection, requiring the scheme to defer capitation payments until the waiting period has elapsed; or a grace period may apply for unpaid premium before a policy is cancelled, making it difficult for the HMI scheme to make payments (see Box 6.9). As these complexities occur and schemes scale up, they will need better MIS.

*Box 6.9***Balancing premium and capitation payments**

Delays or gaps in premium collection can leave an HMI scheme with insufficient funds to make prospective capitation payments to healthcare providers. Two schemes, CBHI and GRET-SKY, allow a three-month grace period for members to pay monthly premiums due. In CBHI, members can avoid cancellation if they pay three months premium in arrears at the time of paying the fourth month's premium, but for many this is unaffordable, and local scheme premium collectors are reluctant to enforce cancellations. Instead, members may pay for one month, then skip two, and then pay for another month to avoid cancellation, at least until planned healthcare services can be utilized. This creates additional administration and affects the schemes' ability to make timely capitation payments to healthcare providers.

To minimize such difficulties, GRET-SKY requests three months premium at enrolment to establish cash reserves for capitation payments and to reduce the incidence of unpaid premiums. This approach has not been implemented in CBHI Lao PDR, as the district schemes are not computerized and lack capacity to manage advance premium payments.

Source: Authors.

6.3 Conclusions

A TPP mechanism was found in a majority of HMI schemes surveyed. This finding is probably due to the potential advantages of a TPP, especially enhancing client value by eliminating all or most out-of-pocket costs for care. A TPP mechanism also offers the following potential advantages to HMI schemes:

- more rational and fair pricing of healthcare services;
- increased quality of care, potentially leading to better health outcomes;
- better utilization of services, leading to improved care and lower costs;
- improved administrative efficiency; and
- better client service.

Despite these benefits, TPP mechanisms also have potential drawbacks that HMI schemes must monitor and manage, such as:

- lack of quality providers to build an adequate provider network that offers clients all covered services as well as choice and convenience;

- unwillingness of healthcare providers to contract as part of a TPP mechanism, in particular to agree to financial and administrative requirements imposed by the scheme;
- lack of information system technology;
- difficulty in monitoring and managing claims expenses and administrative costs without creating onerous procedures (and costs);
- risks of fraud and abuse by both clients and healthcare providers.

HMI schemes cite numerous lessons learned about TPP mechanisms:

- Successful contracting with health providers requires a long-term approach to a partnership. Healthcare providers may agree to alternative payment mechanisms such as capitation provided they perceive the terms to be sufficient for them to cover costs and make a fair profit.
- The ability of the HMI scheme to manage the costs associated with moral hazard, fraud, claims and administration, while providing timely service to clients and healthcare providers, will heavily depend on the quality and efficiency of its MIS.
- Approaches that encourage better-quality health care include: a) assessing the extent to which insured patients receive appropriate services according to diagnosis and health status; and b) auditing the quality of care in compliance with standard treatment protocols.
- Approaches to improve perceived quality of health care include:
 - locating a liaison officer at contracted healthcare providers to support admissions and discharge planning;
 - monitoring simple and measurable indicators of perceived quality of care, such as hours of service and patient satisfaction;
 - setting up a 24/7 help line (ideally, toll-free).
- Payment methods that transfer some financial risk to healthcare providers (case-based, per day or capitation) are better able to contain costs than fee-for-service payment, but require additional measures to control the quality of care. These methods are usually more difficult to negotiate with healthcare providers.
- Capitation may be appropriate for high-frequency/low-cost (i.e. more predictable) health events, such as outpatient care, without jeopardizing the financial health of the healthcare provider, and seems appropriate for contexts where a critical mass of enrolment can be achieved with providers.
- HMI schemes that pay claims based on a fee for service may be tempted to restrict care covered to limit the number and cost of claims in response to the financial incentive of healthcare providers to over-provide services.

Additionally, HMI schemes may be willing to engage a TPA to manage their TPP mechanism and maintain an adequate healthcare provider network, especially when scaling up and expanding geographically. In most developing countries, affordable TPA services tailored for the poor that work well may be difficult to find, though this is changing with the development of internet-based systems, such as the use of mobile phones for data transfer. A more in-depth review of the availability and pros and cons of TPAs merits further consideration.

As a scheme matures and reaches some degree of volume and complexity, investment in information technology and improved collection and analysis of data becomes increasingly necessary, not only to manage moral hazard but also to assess quality of care and to identify ways to improve the product. Deployment of information technology with increased analysis of the scheme's performance should be part of the scheme's business plan to achieve scale and viability.

7 The elusive quest for estimates of willingness to pay for health microinsurance

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Focusing on poor people in low-income countries (LICs) entails a price constraint for those planning to supply health insurance. The challenge is to price health insurance at a level that ensures a balance between expenditure and income, at least in the long term, and remains affordable and attractive to poor people. This balance can be achieved either by limiting expenditure to available premium income where membership is usually voluntary – even though the affiliation unit can include more than one individual, e.g. entire households or entire communities, as is typical for mutual and community-based health insurance – or by defining first the benefit package, and then the premiums needed to cover the cost, which is typical for mandatory and commercial schemes.

This chapter focuses on the issue of voluntary membership in health insurance. We should first explain why persons with low income would wish to buy insurance in the first place, as this can shed light on how much people would be willing to pay. One well-known explanation linked to the expected utility theory is that insurance is a trade-off between an uncertain but potentially huge loss (occurring if the uninsured has to pay for the risk) and a certain but small loss (incurred by paying a premium that eliminates the unaffordable risk). The implied assumption is that all people are risk-averse. However, in low-income settings, this assumption does not hold true in all cases; for one, the premium might be considered a high-risk cost rather than a risk-reducing cost, particularly when people who have paid the premium receive no benefit in return (even when they have incurred some healthcare costs). Furthermore, this theory does not explain how much people would be willing to pay for certainty as to their risk exposure. For example, is it worthwhile paying INR 100 or 150 (US\$2.25 or US\$3.40) for hospitalization cover up to INR 5000 (US\$115)? The theory also fails to address what relationship there might be between willingness to pay (WTP) and income levels (e.g. are richer people prepared to pay a different share of their income from poorer people for the same insurance?), risk exposure levels (e.g. does previous exposure to the insured risk affect the amount people are willing to pay as premium?) or other relevant parameters (e.g. does education influence WTP?). A better understanding of the parameters that are likely to affect

WTP can be very helpful to practitioners and policymakers in designing an insurance product that suits the target population.

One way to estimate WTP is by following the revealed preferences (RP) method introduced first by Samuelson (1938). RP is a predictive modelling approach to WTP that is based on studying actual purchasing behaviour, not of the product we are interested in, but of other, related products from which we wish to identify the value people place on – or would be willing to pay for – a product for which no purchasing information exists. The first applications of the RP approach were made in the 1940s to predict the amount that could be charged for entry to National Parks in the United States; at that time, there was no pricing information because National Parks were new, and this is the case for microinsurance today. People's travel costs were used to infer the WTP. In the context of our investigation, we could not find any published study reporting estimation of WTP for health microinsurance (HMI) using the revealed preferences method, which leaves open the key question of what a suitable inference or anchor to estimate WTP for health insurance would be.

The alternative option, called stated preferences (SP), is to ask people what they would be willing to pay for insurance cover that they do not yet have and that is perhaps not even on the market. There are several ways to value non-market goods. One of the most frequently used, called contingent valuation (CV), consists of using survey methods to present respondents with hypothetical scenarios about an intervention under evaluation (or insurance product in this case). Respondents are required to think about the contingency of an actual market for the benefits, and indicate the maximum amount they would be willing to pay for them.

WTP is presumably mediated by ability to pay and by individual and cultural aspects that determine the perceived benefit. We wanted to examine the evidence for this, and embarked on a systematic review of the literature. When this had been completed (in 2010), we found several studies that were reported from a number of countries in Asia and in Africa on WTP for health insurance among the poor in LICs (the target population for microinsurance). This chapter contains a comparison of the findings of these studies, notably the features that emerged as explanatory variables for WTP, some of which are dependent on time and context, while others seem to describe major determinants of WTP for health insurance among the poor in LICs. The paper ends with a synthesis of the findings that point to the way estimates of WTP could be obtained, whilst at the same time highlighting the limitations inherent to methods used to elicit WTP.

7.1 Methods of eliciting WTP

A crucial methodological question in CV is how WTP information can be elicited. For one, replies could be influenced by the product in question and by characteristics of the target population. However, the process of elicitation can affect the results of CV surveys, in areas such as 1) how the information is obtained and presented; is it clear and complete? Can people imagine the situation? 2) How would people pay for the health event (e.g. out-of-pocket, by taxation or private health insurance?) 3) Over what time period is the product valued? This provides the respondent's budget and cash-flow constraints. 4) How is the survey administered? (e.g. individual or group responses?).

There is considerable debate on the precise format in which the questions should be asked, because each possible format appears prone to some bias (*see Table 7.1*).

7.1.1 Open-ended format

CV applications started with the use of open-ended formats, in which respondents were asked to state the amount that best matched their valuation of the hypothetical insurance package presented. Respondents found it difficult to answer these questions, leading to low response rates and a high degree of variation. Because of the disappointing results, alternative closed-end elicitation formats were developed.

7.1.2 Closed-end formats

The "bidding game" (BG) is an example of a closed-end elicitation format, in which the respondent is asked whether he or she is willing to pay a specific amount. Depending on the answer, the bid is lowered or raised and the individual is asked about this new bid ("bi-directional BG"). This process continues until the maximum WTP amount is found. Alternatively, "unidirectional" BG could be either ascending, in which case the initial bid is very low and is increased until respondents reject the offer; or descending, in which the initial bid is very high and is lowered until respondents accept the bid. The descending BG is assumed to yield a higher WTP. A problem with the BG is that the maximum in the auction process can be influenced by the amount of the first bid; a higher first bid was reported to result in a higher WTP. This is called "starting-point bias".

Another method, called the "dichotomous choice technique" (DC) involves asking subjects to answer the question as to whether they would pay a specified amount for a given commodity with "yes" or "no". The demand curve is estimated by varying the bid amount across respondents and the area under this demand curve represents mean WTP.

A variation of the DC technique is “dichotomous choice with follow-up question”. In the first step, respondents state whether they are willing to pay a specified amount; in the second step, those who said “yes” get a higher bid and those who said “no” a lower bid. According to Asfaw and Braun (2005), the problems with the starting point bias can be partially toned down by the presence of the second bid.

Another variant of the DC is the “take it or leave it” approach (TIOLI), in which each respondent is asked one question during surveys of large numbers of persons. The data are then analysed using econometric techniques to identify the shape of the distribution. The difficulties with this approach are in identifying the relevant range of sample bids needed for precise estimation.

Another similar method is called the “payment card” (PC). Each subject is invited to select his or her maximum WTP from the same specified list of possible values, which provides the respondent with a clear context for making the valuation. The PC method achieved a higher completion rate and generated higher valuations than the open-ended format. It is not exposed to starting-point bias (like the bidding game) or to “yes-saying” (as with dichotomous choice) but the potential bias when using the PC method is “mid-point bias”: respondents tend to state their maximum WTP in the middle of the card. According to Bayoumi (2004), using the PC method with a follow-up bidding process can define the value more precisely.

Table 7.1

Advantages and disadvantages of different elicitation methods

<i>Elicitation format</i>	<i>Pros</i>	<i>Cons</i>
Open-ended formats (OE)	simple and easy method	<ul style="list-style-type: none"> – difficult to answer – low response rate – results are sensitive to outliers – compliance bias
<i>Closed-end formats</i>		
Bidding game (BG)	<ul style="list-style-type: none"> – easy and simple to answer – easy for people who are used to bidding for their daily utility goods 	<ul style="list-style-type: none"> – starting-point bias
Dichotomous choice (DC)	<ul style="list-style-type: none"> – simple and easy method; the respondent only has to make one or two choices 	<ul style="list-style-type: none"> – results in higher WTP estimates compared to OE and PC – starting point bias – yes-saying bias
TIOLI	<ul style="list-style-type: none"> – simple method; the respondent only has to make one choice 	<ul style="list-style-type: none"> – yes-saying bias
Payment card (PC)	<ul style="list-style-type: none"> – comprehensible context for making the valuation – can be self-administered – amenable to data collection (unsupervised or postal questionnaire) 	<ul style="list-style-type: none"> – range bias – anchor-point bias – mid-point bias – hypothetical bias – warm glow effect/social desirability bias

7.2 Search of relevant WTP experiments

To achieve a successful launch of HMI, it is important to understand WTP relative to the stakeholders' context. The three issues that are of particular concern are: 1) what are the difficulties associated with predicting WTP when the investigation has to be performed before the respondents can actually buy HMI? 2) Which variables explain the differences in WTP across households in the same location, and across different locations and points in time? And 3) how can reliable and comparable WTP estimates be obtained with minimal investment of time and money?

With the purpose of reviewing what has been done in this regard, we conducted several searches of literature in 2010, including a search of MEDLINE database; search terms included: "WTP" or "willingness to pay" and "health insurance": 179 hits came up; a refined search was based on crossing the keyword "willingness to pay" with "health insurance" or "prepayment-health" and one of the following keywords: "developing countries"; "Asia"; "Africa"; "Latin America"; "low income"; "poor"; "microinsurance"; or "CBHI (community-based health insurance)". 18 articles that were relevant for the topic "WTP for health insurance in low-income countries" were retained. We also scanned the references of the above-mentioned articles to identify additional papers that did not come up in the online searches; two articles were identified (one on a study conducted in Pakistan and the other in Cameroon) bringing the total to 20 articles.

A detailed screening of the articles revealed that three experiments were reported by more than one article, and thus this chapter is based on 14 experimental field studies eliciting WTP for health insurance among low-income persons in developing countries, but on 20 papers. The countries included Burkina Faso (five articles), Cameroon, China (two articles), Ethiopia (two articles), Ghana, India (two articles), Islamic Republic of Iran, Namibia, Nigeria (two articles), Pakistan, United Republic of Tanzania and Viet Nam.

Table 7.2 summarizes the elicitation methods used in the field studies. All researchers used the CV approach, but with notable differences in the method to elicit the WTP and the definitions of various parameters.

Table 7.2

Overview of the data, locations and method of elicitation of WTP used¹

<i>Authors</i>	<i>Date</i>	<i>Sample</i>	<i>Country</i>	<i>Objective²</i>	<i>Unit of inquiry</i>	<i>Method</i>
Walraven	1996	821 I + 1500 HH	United Republic of Tanzania	WTP for local health insurance scheme	I + HH	OQ
Asenso-Okyere et al.	1997	164 urban + 142 rural	Ghana	WTP for health insurance	HH	BG
Mathiyazhagan	1998	1000	India	WTP for a rural CBHI	HH	OQ
Masud et al.	2003	600	Pakistan	WTP for health insurance primary care	HH	OQ
Dong et al.	2003	2414 I + 705 HH	Burkina Faso	WTP for CBHI	I + HH	TIOLI + BG
Binam et al.	2004	471 rural	Cameroon	WTP for CBHI	HH	BG
Asgary et al.	2004	2139	Iran	WTP for a rural health insurance	HH	BG
Asfaw and Braun	2005	550	Ethiopia	Assess prospects for rural CBHI	HH	DC + F
Bärnighausen et al.	2007	621	China	WTP for basic health insurance	I	PC
Ying et al.	2007	2671	China	WTP for private health insurance (urban informal sector)	I	BG + OQ
Dror et al.	2007	3024	India	WTP for CBHI	HH	BG
Lofgren et al.	2008	2070	Viet Nam	WTP for health insurance	HH	TIOLI + OQ
Gustafsson-Wright et al.	2009	1700	Namibia	WTP for low-cost health insurance	HH	DC + F
Onwujekwe et al.	2010	3070	Nigeria	WTP for CBHI	I + HH	BG + OQ

¹ About 90 per cent of the target population of 1 million chose to remain uninsured during the first year of operation of CBHI.

I = individual; HH = household; OQ = open question; BG = bidding game; DC + F = dichotomous choice with follow-up question; PC = payment card.

A few researchers used open-ended direct questions such as *"How much would you pay for health insurance?"* (with a detailed explanation of the health insurance product in question). Walraven elicited WTP by asking *"How much are you willing to pay per year for each member of your household (to be covered by services in the hospital)?"* Masud et al. also use a direct question, which was: *"Would you be willing to pay [prepay] for health care at the government health facility? ... And what is the maximum amount you would be willing to pay?"* Mathiyazhagan (1998) and Lofgren et al. (2008) first introduced an anchor price by asking respondents whether they would agree to pay a certain amount. The query was of the TIOLI type, and regardless of the reply, all respondents were then asked what would be their maximum WTP; that last amount was retained as the respondents' WTP. Onwujekwe et al. (2010) used the DC-with-follow-up method, followed by a direct question: *"What really is the maximum amount you are willing to pay for CBHI?"* This last number was retained as the WTP.

Binam et al. (2004) followed a bi-directional bidding game to elicit WTP and they used four initial bids as anchors. Ying et al. (2007) used a composite method which consisted of a bi-directional bidding game followed by an open question, which was, however, presented only to respondents that either refused the lowest bid or accepted the highest bid. The open question was “*What is the highest amount that you [the respondent] would be willing to pay?*” It is recalled that respondents knew the last bid, which was their anchor. Ying et al. (2007) explained that they used the open question (in addition to the bi-directional bidding game) in order to avoid truncation of the data. Ying et al. (2007) used a uniform initial bid for all respondents. Other researchers who conducted a bi-directional bidding game chose different initial bids for different groups of respondents. Dong et al. (2003) used 13 different initial bids, randomly assigned to respondents. This multiplicity of initial bids could introduce the starting-point bias, because respondents may think that the initial bid represents the value, or very close to the value, of the good or service in question. Dror et al. (2007) used a unidirectional and descending bidding game, the purpose of which was to obtain a more accurate maximum WTP, which is the most relevant for policy decisions. They used an initial bid which they assumed was too high, with a view to examining the quantitative expression of “maximum WTP for health insurance”; in fact, 18.4 per cent of their respondents accepted the initial bid, which could suggest that if the intention was simply that it should serve as anchor, it might not have been high enough. Asenso-Okyere et al. (1997) also followed a unidirectional and descending bidding game. As 40.1 per cent of their respondents accepted the initial bid, one might think that it was not the best anchor to elicit maximal WTP. It is noted that Dong et al. (2003) and Binam et al. (2004) could not find significant evidence for a starting point bias in their datasets. However, they used bi-directional bidding games with multiple initial bids. It is assumed that a unidirectional BG with the same anchor for all respondents could neutralize the starting-point bias and improve comparability of results across sampled households.

In the articles reviewed, there was also an experiment that applied an ascending unidirectional bidding game. Asgary et al. (2004) applied it in rural Iran to estimate demand and WTP for health insurance. These researchers used three initial bids as anchors, each presented to one-third of their sample. A negative response to the initial bid was recorded as zero WTP; otherwise, the highest accepted bid was recorded. Bärnighausen et al. (2007) used a modified ascending trajectory in their study among informal-sector workers in Wuhan China. They elicited responses by using a “payment card” eliciting method.

Asfaw and Braun (2005) and Gustafsson-Wright et al. (2009) used the DC with follow-up (which they call “double-bounded contingent valuation – DBCV”), whereby respondents are given two bids, an initial bid and a second bid. Respondents who rejected the initial bid were presented with a lower second bid, and those who accepted the initial bid got a higher second bid. After these two bids, the game is over; respondents are then classified into four groups: those that said “yes” + “yes”, “yes” + “no”, “no” + “yes”, and “no” + “no”. Mean WTP values must then be estimated by maximizing a log likelihood function.¹

The most striking insight gained from this review of empirical WTP studies is the large variety in the methods used. This diversity makes it difficult to compare quantitative estimates of WTP across the studies as they use different metrics. It is possible to present qualitative explanations for variations in WTP within each group of respondents, but there are no clear “translation rules” for comparing uni-directional and bi-directional bidding games, ascending and descending trajectories, or those using an open question, those who offer a single bid (TIOLI) and those who estimate WTP after multiple bids. In addition to the methodological diversity, there are socio-economic differences (inherent to different locations, which is covered in the next few sections), and differences related to researchers’ choice to measure WTP of a household rather than WTP of individuals, whilst in other studies the decision was taken to include both units. The diversity of elicitation methods used highlights the difficulty in comparing quantitative results across several studies.

7.3

Key findings

This section summarizes the findings from the identified studies on the willingness to pay for HMI. The results suggest that numerous factors can affect that decision, including socio-economic, demographic and geographic characteristics, and the respondents’ experiences with health care services and expenses.

7.3.1

Income/socio-economic status/demography and WTP

Most studies presume an intuitive expectation that WTP for health insurance will be positively associated with income, because households would be able to afford a higher prepayment as their income increases. We seek to verify this important assumption, by juxtaposing WTP and income (or its proxies) in the studies described above (summarized in *Table 7.3*).

¹ Under this method, WTP values (or the distribution of these values) are not observed directly from respondents’ replies.

Table 7.3

Association between income and WTP

<i>Authors</i>	<i>Income proxy used</i>	<i>WTP (% of income proxy)</i>	<i>Trend¹</i>
Walraven	Weekly expenditure per adult equivalent	3.20	NS
Asenso-Okyere et al.	Self-reported income (HH survey)	1.9 rural and 2.5 urban	Up
Mathiyazhagan	3 categories: low, middle and high (unspecified criteria)	n.a.	Up
Masud et al.	Socio-economic score & income	3.0 (only those where WTP>0)	Up
Dong et al.	Consumption/expenditure	2.15 (calculated)	Up
Binam et al.	Income of respondent	2.54 (assumed average income)	Up
Asgary et al.	“Wealth and income variable” based on assets	1.4 (assumed average income)	n.s.
Asfaw and Braun	Annual farm and non-farm income	1.4 (calculated)	Up
Bärnighausen et al.	Self-reported income (HH survey)	4.6, 7.8, 6.8, 6.9 (4 packages)	Up
Ying et al.	Self-reported income (HH survey)	1.4, 2.0, 2.2 (3 packages)	Up
Dror et al.	Self-reported income (HH survey)	1.35 income, 1.8 expenditure (median)	Up
Lofgren et al.	2 categories: poor/rich households (determined by local leaders).	n.a.	Up
Gustafsson-Wright et al.	Consumption/expenditure	2.25	Up
Onwujekwe et al.	SES index, based on assets	n.a.	Up

¹ Up = WTP increases with income, n.s. = not significant.

It must be emphasized at the outset that estimation of income in our context is rendered very complex and unreliable by the cumulative effect of 1) there being only partial records (or none at all) of income for households working in the informal economy, which represent the majority of the poor in low-income countries; 2) an endemic and persistent irregularity in income flows due to seasonal fluctuations and the erratic employment patterns of day-labourers and self-employed people in agriculture or family businesses; and 3) widespread inaccuracy in self-reported income, due to confusion regarding the monetary value of non-monetary income.

As could be expected, different researchers used different methods to obtain income proxy. A commonly used method is self-reported income, obtained through a survey. Since there could be many sources of income at household level, it is unlikely to obtain a reliable estimate in answer to a direct question such as “*What is the income of the household?*”. Therefore, most surveyors use a series of questions, but there is no uniform standard for them.

Asenso-Okyere et al. (1997), Asfaw and Braun (2005), Bärnighausen et al. (2007), Ying et al. (2007), Masud et al. (2003) and Dror et al. (2007) reported that they had obtained household or personal income information through surveys.

Expenditure/consumption information is often used because it is considered more reliable than income information in developing countries. WHO uses this data, and many low- and middle-income governments, in official surveys, collect information on consumption/expenditure rather than on income (e.g. the Indian National Sample Survey Organization). Masud et al. (2003), in addition to income, created a

“socio-economic score” based on assets. Asgary et al. (2004) and Onwujekwe et al. (2010) constructed slightly different “wealth and income variables” based on assets. Dror et al. (2007) also posed questions on the expenditure of respondent households in addition to income, and found a highly significant correlation between both variables. Other researchers of WTP for CBHI used only consumption/expenditure data, e.g. Dong et al. (2003) (in yet another paper based on the same dataset), Walraven (1996), and Gustafsson-Wright et al. (2009) and Mathiyazhagan (1998) and Lofgren et al. (2008) started by dividing the sample into categories; the first scholar divided it into low, middle and high income (but did not specify the classification method), and the second scholar divided it into “poor” and “rich” as determined by local leaders.

Despite the huge differences in methods of measuring a proxy for income, 12 of the 14 studies reported a significant and positive association between nominal WTP for health microinsurance and the economic situation of households (*Table 7.3*). The remaining three studies reported no significant trend, or did not investigate this issue. This finding validates the initial assumption that a higher income leads to a higher WTP.

In the light of this finding, one might query whether people would be willing to pay a relatively constant share of their income for health insurance. This information is also shown in *Table 7.3* either as reported by the authors themselves, or calculated by us, using the original published data. The results are quite similar, not only when comparing WTP relative to income, but also relative to consumption/expenditure. Furthermore, with the exception of one outlier estimate (4.6 per cent to 6.9 per cent for four different packages, reported by Bärnighausen et al. (2007)), all WTP values were in the range of 1.35 per cent to 3.2 per cent, with a mean value of 2.2 per cent of the relevant income proxy. This rather narrow range for the estimates strengthens the credibility of the results, even though they have been obtained using very different modes of calculation and with very different populations.

However, could the expression of mean WTP as a share of income obscure a different reality in which different income sub-groups actually differ in the portion of their income that they are willing to pay for health insurance? Some of the articles reviewed offer clues to the answer. Bärnighausen et al. reported that for an increase of 1 per cent in income, WTP increased by about half a per cent. Dong et al. (2003) measured this aspect by calculating the measure of inequity (Gini coefficient)² in income and in WTP. Dong et al. (2003) show that the inequity in income is much higher than in WTP (Gini value of 0.68 in individual expenditure and 0.63 in household expenditure compared to a Gini value of 0.15 for individuals’ and 0.08 for households’ WTP). These findings indicate that WTP increases at a lower rate than income, i.e. richer households would be willing to pay a smaller share of their income than poorer households.

² The Gini coefficient (developed by Corrado Gini, 1912) is a measure of the inequality of a distribution; a value of 0 expresses total equality and a value of 1 maximal inequality.

This assumption was tested further with the data from three studies reviewed. Gustafson-Wright et al. (2009) showed that WTP expressed as a percentage of consumption/expenditure was 11.4 per cent among the poorest quintile, but only 1.2 per cent among the richest quintile. Dror et al. (2007) reported that the median value of WTP as a percentage of income decreased from 1.79 per cent among the poorest quintile to 0.84 per cent among the richest quintile, and this negative correlation was significant. Dong et al. (2005) provided the value of WTP for five income quintiles and the average income proxy (consumption) for these quintiles, which enables us to calculate WTP relative to income/expenditure; his results show that WTP was 18.9 per cent among the poorest quintile, and only 0.9 per cent among the richest quintile. We therefore conclude that, while nominal WTP levels increase when household incomes grow, they decrease dramatically as income increases when WTP is measured as a share of income.

Most studies also examined the association between WTP and other socio-demographic variables. Table 7.4 contains the summary results.

Table 7.4

Association of WTP with socio-economic parameters

<i>Authors</i>	<i>I/HH</i>	<i>Gender</i>	<i>Education</i>	<i>HH size</i>	<i>Age</i>	<i>Insurance experience</i>
Walraven	HH+I	n.d.	n.d.	n.d.	n.d.	n.d.
Asenso-Okyerere et al.	HH	m>f	+	n.d.	n.s.	n.s.
Mathiyazhagan	HH	n.d.	+	+	n.s.	n.d.
Masud et al.	HH	n.d.	n.d.	n.d.	n.d.	n.d.
Dong et al.	HH	n.s.	+	n.s.	n.s.	n.d.
	I	m>f	+	n.d.	–	n.d.
Binam et al.	HH	m>f	n.s.	n.d.	n.s.	n.d.
Asgary et al.	HH	n.d.	+	n.s.	+	n.s.
Asfaw and Braun	HH	n.s.	+	n.d.	n.d.	n.d.
Bärnighausen et al.	I	f>m	+	n.d.	–	n.d.
Ying et al.	I	m>f	+	n.d.	–	n.d.
Dror et al.	HH	m>f	+ (>11y)	+,- (PP)	–	+
Lofgren et al.	HH	n.s.	+	n.d.	–	n.s.
Gustafsson-Wright et al.	HH	m>f	+	n.s.	–	n.d.
Onwujekwe et al.	HH	m>f	+	–(PP)	n.s.	n.d.
	I	m>f	+	n.s.	+	+

I = individual; HH = household; n.d. = not determined; n.s. = not significant; PP = persons in household.

As is often assumed, education is a positive explanatory variable of WTP in most cases.

The results (shown in Table 7.4) also suggest that in most cases, males were willing to pay more than females. As for age, five studies showed no significant effect of age on WTP, and six reported a negative correlation. There is no intui-

tive explanation for younger people's willingness to pay more, and it cannot be explained by income or education, as the effect of age is independent of these parameters in the analysis.

7.3.2 Healthcare availability and WTP

It is self-explanatory that paying the premium is relevant only when the insured can access health care in case of need. Therefore, the association between WTP and supply-side parameters (including availability, distance, and satisfaction with care) should be examined. Interestingly, only a minority of WTP/CBHI researchers reported the results of associations between WTP for health microinsurance and supply of health care. Table 7.5 contains a summary of the findings.

Table 7.5

Effect of healthcare availability on WTP

<i>Authors</i>	<i>Parameter used</i>	<i>Effect</i>
Walraven G		n.a.
Asenso-Okyere et al.	Distance travelled to attend clinic	n.s.
Masud et al.		n.a.
Dong et al.	Distance to health facility (individual WTP)	
	Individual WTP	–
	HH WTP	n.s.
Binam et al.	Categorical variable (yes/no) rapidity in the reception at healthcare centre	n.s.
	Categorical variable (yes/no) representing the cleanliness of the healthcare centre	n.s.
	Categorical variable representing the attendance of physician at healthcare centre	+
	Categorical variable representing the availability of basic drugs at healthcare centre	–
	Categorical variable representing confidence in healthcare services	+
Asgary et al.	Drugs available at health service centre	+
	Existence of full-time physician in the village	+
	Existence of pharmacy in the village	n.s.
	Satisfaction with healthcare facilities in the nearest city	+
Asfaw and Braun		n.a.
Bärnighausen et al.		n.a.
Ying et al.		n.a.
Dror et al.	Distance to preferred primary health facility	n.s.
	Distance to preferred hospital	–
Lofgren et al.		n.a.
Gustafsson-Wright et al.		n.a.
Onwujekwe et al.		n.a.

The distance from home to the healthcare point of service is an often-examined parameter considered to represent the accessibility of health care. One might expect that the shorter the distance, the higher the WTP would be. This

assumption has been confirmed in two studies. Dong et al. (2003) obtained significant negative association for individual WTP but no significant association for household WTP levels, and Dror et al. (2007) reported a significantly negative correlation for the distance to the preferred hospital, but not to the preferred primary health facility. Asenso-Okyere et al. (1997) did not discover a significant correlation between distance from clinic and WTP for health microinsurance. The other studies did not examine the association between WTP and this proxy.

Association between perceived quality of health care and WTP for health microinsurance was examined through several proxies. The correlation with the rapidity with which clients were treated, examined by Binam et al. (2004), was not significant. Binam et al. (2004) and Asgary et al. (2004) reported significant and positive association between WTP and the presence of physicians at the healthcare centre. The availability of drugs in the health centre was also found to be positively correlated with WTP in one case (Asgary et al., 2004), but negatively correlated in another case (Binam et al., 2004). This apparent contradiction could reflect differences in the terms of the policy regarding reimbursement of medicine costs, but the full information was not reported in those papers. Asgary et al. (2004) also investigated satisfaction with healthcare facilities in the nearest city and found the positive association with WTP that one would expect, and Binam et al. (2004) also demonstrated a positive association between WTP and a categorical variable representing confidence in healthcare services.

In summary, the results uphold the assumption that better availability and quality of health services would encourage higher WTP for health insurance. However, this assumption should be examined more frequently and in greater detail in the future to provide an up-to-date indication of the specific features of the supply of health care that influence WTP most positively.

7.3.3

Exposure to ill health, financial consequences of illness and WTP

As we have seen, WTP for health microinsurance reflects an understanding that the intrinsic value of health insurance is that it should protect the household from financial shocks by paying costs related to illness and improving access to adequate health care. It therefore follows that households with recent experience of costly health care would be more willing to spend money to insure against the consequences of such events. As seen in Table 7.6, quite a few of the studies attempted to address this point by searching for an association between WTP values and recent experience with costly illness. It is interesting to note the large variability of the proxies used in the different studies to assess this association, including annual healthcare expenditure, episodes of hospitalization, frequency

of illness, experience with chronic illness, payment for health care, borrowing money to pay for health care and loss of income due to illness. Nine of the reviewed studies found a positive association between WTP and at least one of the proxies for exposure to costly ill health. It seems that recent personal experience with the financial consequences of ill health is an important explanatory factor for the variation in WTP.

Table 7.6

<i>Authors</i>	<i>What was measured</i>	<i>Association with WTP</i>
Walraven		n.d.
Asenso-Okyere et al.	Expenditure on health care last month	+
Mathiyazhagan	Illness of respondent	+
	Number of hospital episodes	+
	Working days lost due to illness	+
	Number of consultations with doctor	n.s.
Masud et al.		n.d.
Dong et al.	HH expenditure on western medicine last month	+
Binam et al.	Percentage of individuals in the HH ill 6–12 months prior to survey	+
Asgary et al.		n.d.
Asfaw and Braun		
1st bid	HH head reported illness	+
2nd bid		n.s.
1st bid	Number of HH members reported illness	+
2nd bid		n.s.
1st bid	Borrowed money for health care	+
2nd bid		n.s.
Bärnighausen et al.	Average monthly health expenditure in the past year	+
Ying et al.	Respondent suffered from chronic disease	
	MCDI	n.s.
	IEI	n.s.
	OEI	+
Dror et al.	Hospitalization in HH in last 2 years	+
Lofgren et al.	One or more persons in HH has a chronic disease	+
Gustafsson-Wright et al.	Number of HH members sick	
	WTP, the first bid	–
	WTP, the second bid	n.s.
Onwujekwe et al.	Paid OOP for health care	–
	Paid with own money	+
	Borrowed money to pay for care	n.s.

7.3.4 Package composition and WTP

In our context, the price of different insurance packages might vary due to levels of co-pay, caps and exclusions, but also due to the benefit types included. While one could argue that co-pay and caps reflect economic considerations, the inclusion/exclusion of benefit types could well reflect normative choices. For example, should maternity be included in the package or not? Therefore, it is necessary to examine whether WTP for health microinsurance is influenced by the design of the insurance product, and if so to what extent. Unfortunately, only very few studies examined this issue in detail. Bäringshausen et al. (2007) asked respondents about their maximum WTP for a basic health insurance (BHI) and, separately, for three variations: 1) without the ceiling of the basic option (which was four times the average annual formal sector worker's salary); 2) without deductible (which under the BHI was 9 per cent of the average annual salary), and 3) without coinsurance (that ranged from 10 per cent for in-patient care to 20 per cent for special services and 30 per cent for outpatient care). In this experiment, the options examined represented different levels of financial protection within the same set of benefits covered. In comparison to the BHI, respondents were willing to pay 70 per cent more for BHI without a ceiling, 43 per cent more for the BHI without a deductible and 56 per cent more for the BHI without coinsurance. This increase in WTP was not only nominal but also relative to the respondents' income (respectively 4.6 per cent for the BHI, 7.8 per cent for BHI without ceiling, 6.8 per cent for BHI without deductible and 6.9 per cent for BHI without coinsurance).

Ying et al. tested WTP for three different health insurance programmes: 1) MCDI would reimburse 80 per cent of health expenditure when the insured suffered from a catastrophic disease; 2) IEI would cover 100 per cent of the enrollees' health expenditures on in-patient health services; and 3) OEI would cover 60 per cent of health expenditure on outpatient health services. 43 per cent of respondents chose MCDI (WTP: 110.1 RMB (US\$17) = 2.2 per cent of annual income); 49 per cent chose IEI (WTP: 100.2 RMB (US\$15.50) = 2.0 per cent of annual income); and 25 per cent chose OEI (WTP: 72.4 RMB (US\$11) = 1.4 per cent of annual income). The price elasticity of the demand for MCDI was -0.27 (this indicates that demand for MCDI would decrease by 2.7 per cent if the premium increased by 10 per cent). The elasticity of demand for IEI and OEI was -0.34 and -0.42 , respectively. In this experiment, the demand for MCDI was least elastic, and WTP highest, both nominally and relative to income. These results suggest that WTP for health insurance can reflect not only financial protection but also preferences for different kinds of services.

By contrast, Lofgren et al. elicited the WTP of their respondents in respect of different insurance products: 1) a health insurance that is based on compulsory

affiliation with income-rated premium;³ and 2) health insurance that is based on voluntary affiliation with risk-rated premium.⁴ Although when subjects were asked about their willingness to affiliate with either of these insurance products there was a slight preference for the compulsory affiliation, the mean WTP for both products was practically the same despite the fact that each household was presented with both options.

Dror et al. (2007) also examined the sensitivity of WTP to being packaged in a different way: each third of the sample was offered a different benefit package.⁵ In that experiment, there was no difference in WTP for the three packages. This could be due to the different elicitation method, in which respondents were offered only one option and were not given a choice between options that they could compare or prefer. This suggests that WTP can, at least sometimes, be used as a tool for package design only when the same respondent can choose between options. This would work when the number of options is relatively small, but would be impracticable with the very many options that health insurance packages usually contain. Other methods were developed for benefit package design that enable respondents to choose from 10 or more options, but this is done within a finite budget, i.e. without soliciting the respondents' WTP. The methods that were applied in the context of CBHI in low-income countries include simulation exercises (Dror et al., 2007), focus group discussions and structured interviews (De Allegri et al., 2006). We conclude that the available information on the impact of package composition on WTP is inconclusive.

³ All households in the district are obliged to pay an annual premium to a local healthcare fund when crops are sold. The fee is based on the households' income. The higher the income, the higher the fee. All members in the household are entitled to free health care at the Communal Health Station or District Health Centre and free medicine if it is prescribed by a doctor. If care at higher levels is needed, the insured patient will be supported by an amount based on the cost per bed-day at the District Health Centre level. The fund will be managed by the Commune People Committee (or elected representative).

⁴ Each household can choose to voluntarily pay an annual premium to a local healthcare fund when crops are sold. The fee is based on the number of people in the household and the fee is higher for children under five and elderly over 65 because they are expected to use more health care.

⁵ Version 1 included hospitalization expenses up to INR 5 000 (US\$115) per year and person and reimbursement of costs for prescribed drugs up to INR 1 000 (US\$22.50) per year and person; version 2 included hospitalisation expenses up to INR 5 000 (US\$115) per year and person and reimbursement of costs for general practitioners up to INR 1 000 (US\$22.50) per year and person; version 3 included reimbursement of costs for prescribed drugs up to INR 1 000 (US\$22.50) per year and person and reimbursement of costs for general practitioners up to INR 1 000 (US\$22.50) per year and person.

7.3.5 **Location of residence and WTP**

The discussion presented above, based on the data reported in the cited studies, leads to the assertion that WTP for health microinsurance is highly influenced by various variables, notably the economic and socio-demographic status of respondents, their financial exposure to healthcare costs and availability of healthcare facilities. All these features vary markedly by location, within and between countries. A simple comparison of results of the different studies reviewed here is impossible due to the dissimilarity in methods used to elicit WTP and to interpret the data. Specifically, the question arises as to whether the significant explanatory variables identified at the level of single households can account for the difference across locations.

We submit that the way to address this question with confidence would be to include a “location variable” in multiple regressions performed to identify the explanatory variables at the level of single households when the dataset includes more than one location. Following this process could ensure that household features and WTP levels would be elicited using the same methodology. Only two of the studies reviewed have actually followed this procedure, Dror et al. (2007) (comparing seven locations in India) and Onwujekwe et al. (2010) (comparing six locations in Nigeria). Both studies reported that the location still remained a highly significant explanatory variable for the variation in WTP, even in a multivariate model including all the features of the individual households (economic and socio-demographic status and recent experience with healthcare costs). This finding suggests that the studies published so far on WTP for health microinsurance have not yet identified all of the reasons that explain differences in WTP for health insurance across communities; we cannot exclude that some features, e.g. those reflecting cultural or lifestyle choices, could explain some underlying reasons that have not been recognized. The impact of location as an explanatory variable will need to be explored more thoroughly in future research.

7.4 **Lessons learned and implications for practitioners**

“We had to work backwards taking into consideration what the community could pay, while creating a long-term, self-sustaining scheme.” This testimony of an HMI practitioner in India presents the essential role of WTP estimates, namely that members’ WTP determines the income side, and by extension also what the insurer can offer by way of cover.

This review of field experiments has illustrated that all researchers agree that WTP must be explored locally, because there is no “one-size-fits-all” option to determine the income side of different HMI schemes operating in different settings. The review has also shed light on the difficulties associated with obtaining WTP estimates that would be relevant locally. Such estimates require data that is

usually obtained through household surveys and other costly and time-consuming investigations. These constraints make it impracticable to obtain local data in each place where HMI is launched.

However, if the income of the target population is known, it could serve as an anchor for initial estimation of WTP, based on the analysis of the studies reviewed here and shown in Table 7.2. It has been shown in Table 7.3 that WTP estimates (when expressed as a percentage of income) converge mostly to a relatively narrow range around two per cent of income.

It has also been shown in Tables 7.4, 7.5 and 7.6 that various other parameters influence WTP levels. Therefore, we might be able to extrapolate WTP levels known in one location to other comparable locations using knowledge of these parameters. For instance, if in one location we know the level of education of household heads as well as the WTP values, and in another location we only know that household heads have a higher level of education, we would expect WTP levels in that second location to be higher. Similarly, ample supply of quality health care, or higher cost of care, or higher morbidity would all be expected to lead to higher WTP.

We have also seen that WTP levels are sensitive to benefit package design. Therefore we would expect that involving the target population in the design phase would increase WTP levels.

However, for the time being, it is impossible to devise a simple standard model to predict WTP everywhere, because of the large diversity of methods used to elicit and estimate WTP in the different studies reviewed in this chapter. Such a model could hopefully be devised in line with the methods used to determine WTP and standardized for the purpose of analysing explanatory variables.