HEALTH POLICY AND PLANNING; 11(3): 219–237
https://academic.oup.com/heapol/article/11/3/219/607576

Review article

Ability to pay for health care: concepts and evidence

STEVEN RUSSELL

Health Economics and Financing Programme, Health Policy Unit, London School of Hygiene and Tropical Medicine, UK.

In many developing countries people are expected to contribute to the cost of health care from their own pockets. As a result, people's ability to pay (ATP) for health care, or the affordability of health care, has become a critical policy issue in developing countries, and a particularly urgent issue where households face combined user fee burdens from various essential service sectors such as health, education and water. Research and policy debates have focused on willingness to pay (WTP) for essential services, and have tended to assume that WTP is synonymous with ATP. This paper questions this assumption, and suggests that WTP may not reflect ATP. Households may persist in paying for care, but to mobilize resources they may sacrifice other basic needs such as food and education, with serious consequences for the household or individuals within it. The opportunity costs of payment make the payment 'unaffordable' because other basic needs are sacrificed. An approach to ATP founded on basic needs and the opportunity costs of payment strategies (including non-utilization) is therefore proposed. From the few studies available, common household responses to payment difficulties are identified, ranging from borrowing to more serious 'distress sales' of productive assets (e.g. land), delays to treatment and, ultimately, abandonment of treatment. Although these strategies may have a devastating impact on livelihoods and health, few studies have investigated them in any detail. In-depth longitudinal household studies are proposed to develop understanding of ATP and to inform policy initiatives which might contribute to more affordable health care.

1. Introduction

> '(F)amilies do, on occasion, encounter great difficulties in paying for health services. They persist in using the services because they do not see that they have any choice if they are to save their relatives. The money used to pay for health care may otherwise have been used for food, agricultural development or education. Payment for health services is thus made at considerable social cost to the family and can scarcely be said to represent a ''willingness'' to pay in the normal sense of the word.'[1 (p.38)]

This paper explores the question of people's ability to pay (ATP) for health care, or the affordability of health care. The affordability of essential services like health care has become a critical policy issue in many developing countries because people are expected to contribute more from their own pockets as a result of health sector financing reforms (e.g. user fees, community financing). In many countries expenditure on private services has also increased across income groups in response to the low quality of government health services. Even in countries where services are delivered 'free', informal charges and time and transport costs incurred by households can be considerable.[2]

In countries undergoing stabilization and structural adjustment programmes, the question of affordability is particularly urgent because households often face combined user fee burdens from various essential service sectors such as health, education and water, while food prices are rising and employment and real wages are falling.[3] Ironically, donor and budgetary pressures to introduce user fees have been greatest

in low income countries, mainly in sub-Saharan Africa, where large sections of the population may face difficulties in paying for health care.[4,5]

Most policy debates and research on cost recovery have treated willingness and ability to pay as synonymous. Indeed willingness to pay (WTP) studies using the contingent valuation method have become fashionable ways of estimating potential cost-recovery rates for health projects. People's WTP is an important factor for decision-makers to consider, because consumer responses to prices will influence service utilization patterns and revenue collected. But the main premise of this paper is that WTP and expenditure studies leave some important questions unanswered, namely: what are the complex forces which influence household behaviour, expenditure priorities and resource allocation decisions; what is the impact of increasing health care expenditure on household budgets, consumption and investment decisions; and ultimately, what is the impact of household health expenditure decisions on livelihoods and the household production of health.[6]

The aim of this paper is to begin to address these questions, and to raise issues for further debate and research. Conceptually, it argues that WTP is not synonymous with ATP, because health expenditures may impose considerable costs on household consumption and investment patterns, and may start a process of asset depletion and impoverishment.[7,8] The paper shifts the focus of attention from the health facility, where knowledge about policy outputs is accumulating (such as the impact of fees on utilization), to the household, where decisions on how to allocate limited resources to health, education and other essential commodities may have serious consequences for the household and individuals within it.

Section 2 critically reviews conceptual approaches to the ATP question, and proposes an approach which focuses on the opportunity costs of health expenditure strategies. A framework to examine household capacity to mobilize resources at times of illness is outlined in section 3, drawing on Sen's theory of entitlements[9] and subsequent studies of coping strategies. Section 4 reviews existing research to consolidate knowledge about the resources and strategies which poor households use when faced with payment difficulties. The paper concludes with a summary of gaps in knowledge and suggests future directions for research on ATP, and potential policy approaches which might contribute to more affordable health care.

2. Approaches to ability to pay

In conventional economics there is no accepted definition of an affordable price:

> '. . .advertisers and politicians speak comfortably of an "affordable car", or "affordable housing", but this usually refers only to a product that is cheaper than most others on the market.'[10 (p.51)]

The broad aim here is to critically examine demand-based approaches to ATP, and to move towards affordability principles founded on the opportunity costs of payment. The discussion below owes much to the work of Fabricant,[10] McPake et al.[11] and Hancock,[12] who have explored different approaches to affordability.

2.1 Demand-based approaches

Health care expenditure and utilization studies

Economists have a powerful concept to examine ATP, namely demand, defined as willingness and ability to pay. Consumers are assumed to be able to afford whatever they are willing to pay, because they know best how to allocate their resources. Nevertheless, evidence about ATP from demand-based studies is inconclusive. In the 1980s a few econometric demand models concluded that WTP for outpatient services was not influenced by household income. Existing payments for health care by poor and non-poor households were then cited as evidence of potential widespread ATP user fees at government facilities.[13–15] In contrast, other models found that the poor were sensitive to prices and would reduce utilization proportionately more than the rich in response to fees, implying that user fees were unaffordable for these groups.[16]

Longitudinal studies to assess facility utilization patterns before and after the introduction of user fees have also been cited as evidence of (in)ability to pay for health care. The majority of these 'field experiments' report considerable declines in utilization following the introduction of fees, and the magnitude of these declines – falls ranging from 30 to 90% in some countries – show that large sections of the population were unwilling to pay.[1,17–22] However, these declines in utilization do not necessarily show that people were unable to pay.

These longitudinal studies were criticized because they did not consider the influence of quality on demand and utilization.[23] A few studies have tried to address this quality question, most through evaluation of locally organized user fee systems in Francophone

Africa where quality (drug availability) improved as a result of fee revenues. These studies found that fees plus concurrent quality improvements led to increased service utilization levels.[23–25]

In Cameroon, Litvack and Bodart's study[23] has been particularly influential because it disaggregated utilization impact by socioeconomic group, and found that fees plus local drug availability caused the poor to increase utilization disproportionately. This counter-intuitive finding is explained by the relative affordability of health care at local government health centres compared to more distant providers which were previously being used. When cheap and effective drugs become locally available after fees were introduced, travel and time costs were reduced, lowering the total cost of care. These results need to be interpreted cautiously, however, since the study was located in cash-rich areas and user fees may not have been 'relatively affordable' in poorer Cameroonian districts.

While this relationship between price, quality and utilization is of vital significance for cost recovery planners, utilization studies do not allow firm conclusions to be made about absolute affordability. The main weaknesses of expenditure and utilization approaches to affordability are summarized below.

- The complexity of factors which influence a person's decision to spend or not to spend money on health care make it impossible to determine whether payment (or non-payment) is due to ability to pay, or other factors. The decision to use or not use health services is a complex one, determined not only by price, but by other factors such as perceived quality, the availability of other providers, or perhaps the stigma associated with using the service (e.g. STD clinics). In most of the countries where utilization declined, there had been few, if any, concurrent improvements in service quality. As a result 'people react to fee increases in the manner which economic theory would suggest; they consume less health care services if the services remain unchanged'.[26 (p.16)] For example, in Zambia poor people felt that the journey to the clinic, the long waiting times, the rude staff and the unpredictable drug supplies were not worth the extra price. Their decision to stop using services was on the grounds of poor value for money, rather than inability to pay per se.[18]
- Most studies did not disaggregate utilization impact by socioeconomic group. Logic informs us that the poor are likely to face the greatest financial barriers to utilization, but only two of the studies which found a negative utilization impact shed light on the poor's response to fees. In the Volta Region of Ghana utilization levels in urban areas recovered after two years, but in rural areas, where people had lower incomes and less cash, utilization did not recover.[21] In Swaziland, declines in utilization were greatest amongst those patients who had previously attended the nearest facilities and paid the least, indicating the poorest were disproportionately deterred.[22]
- The demand assumption that WTP is synonymous with ATP must be questioned because payment for care may have serious financial consequences for the household. More information is needed about where the money to pay for care came from, and the implications of these expenditures for households and individuals within them.

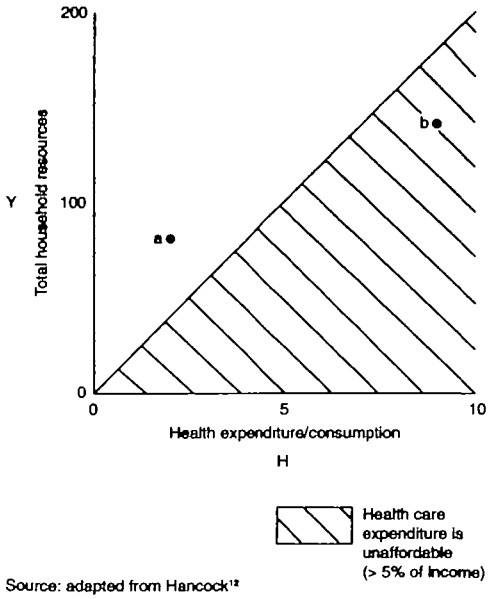
Expenditure ratios: health expenditure as a percentage of income

Health expenditure:income ratios are often cited as evidence of (in)ability to pay, and have been used to help set 'affordable' prices. A 5% health expenditure:income ratio is a common benchmark of affordability because most health expenditure surveys in developing countries show that a 'typical' household spends between 2–5% of income on health care.[27–30] Similar 'affordable' ratios are commonly cited in the water sector.[31] A simple visual representation of the ratio approach to affordability is shown in Figure 1. The 45 degree line plots health expenditure:income ratios of 5%. Any point above the line (e.g. point a) represents health care costs relative to income which are less than 5%, and therefore 'affordable' if a 5% threshold is used. The shaded area below the line represents 'unaffordable' health care expenditure positions (e.g. point b).

Although planners can use survey data to estimate health expenditure:income ratios for different categories of household, and the number of households facing ATP problems (e.g. with ratios above 5%),[28] the ratio approach has both practical and conceptual problems.

Practical problems

- The ratio denominator: measurement of household annual income is fraught with difficulties, since potential household resources are diverse and difficult to observe.[32] Data inaccuracies may be



Source: adapted from Hancock[12]

Figure 1. The ratio approach to ability to pay

exacerbated because monthly income is often simply multiplied by 12 to arrive at an annual figure. Inaccuracies could have serious consequences, since a small mistake could shift a household's expenditure:income ratio across a threshold, for example from 4.9% to 5.1%. The problem of reliable income measures was demonstrated by Pannarunothai and Mills,[29] who found that only 4 of 14 households gave estimates of annual household income in a re-interview that were within 5% of the first interview's estimate. For 10 households the re-interviews elicited values that were up to 62% higher.

- The ratio numerator: for a particular household, health expenditure data are less problematic than income data, but data aggregation raises difficulties. Although useful for planners, it 'standardizes the diverse' and excludes the complex and diverse realities of households.[33] This may be a particular problem with respect to health expenditure data, because health expenditures vary considerably between households; most spend only a small proportion of income on health, while a few may face considerable burdens.[34] As the frequency and severity of illness are key factors likely to influence ATP, the use of averages may underestimate the economic burden for 'sickly' households (such as those with nutritional problems or with many children), or for atypical households which experience catastrophic accidents and serious illness.

Conceptual problems

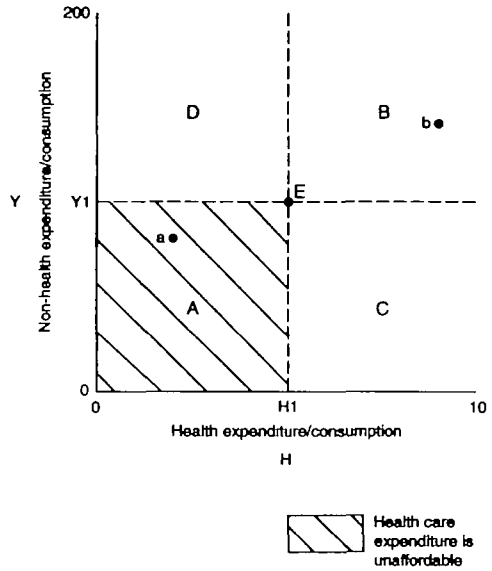
The use of expenditure:income ratios to examine affordability is based on concern that health care expenditure should not impose an 'unreasonable burden' on household budgets. This reflects concern about the *opportunity cost* of health expenditure: if a household spends more than X percent of its budget on health, the ratio approach warns that the household's command over other commodities will be reduced. The opportunity costs of health care expenditure decisions underpin the ATP question,[12] but the ratio approach does not answer two important questions about these opportunity costs:

- the opportunity costs incurred by a household which spends X percent of its income on health care remain undisclosed. A well-off household may simply forego 'unnecessary' expenditures, while an income-poor household may have to make damaging cutbacks to food consumption and education or may be forced to sell assets;
- who judges, and how does one judge, whether the commodities, investments and assets foregone are 'necessary' or 'discretionary';

These questions are explored in greater detail below.

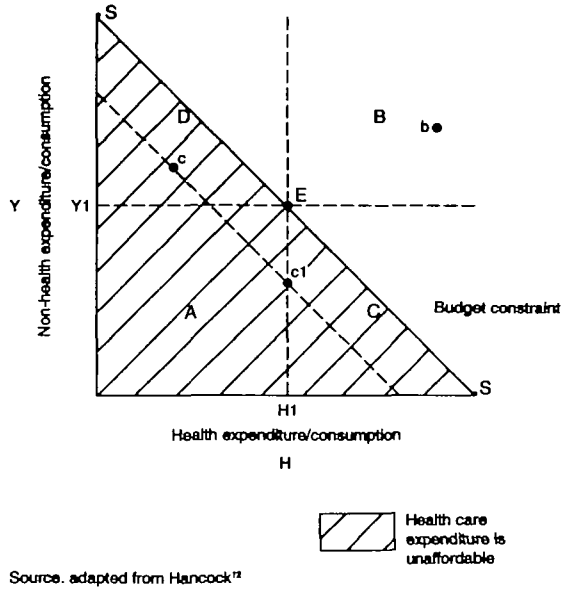
2.2 Opportunity costs, basic needs and affordability in the short run

The costs of accessing health care (e.g. transport costs, health charges) can be considered affordable when utilization is not deterred for financial reasons, and when the opportunity costs incurred do not cause levels of consumption and investment (e.g. on education) to go below minimum needs in the short run. From this perspective, certain levels of health care, and a certain quantity of non-health care commodities and investments, are considered merit goods – or basic rights and needs defined by society.[12] Figure 2 illustrates a simple opportunity cost approach to affordability. For the moment the diverse and complex decisions open to households are simplified down to two consumption or expenditure dimensions, health care commodities and non-health commodities. H1 represents a household's minimum health care needs and Y1 its other minimum commodity consumption needs – minimum needs externally defined by society or professionals. Point E represents a minimum need consumption bundle for a household; the household is, for the moment, taken as the unit of analysis. For abstract analytical and presentational



Source. adapted from Hancock[12]

Figure 2. Approaching ability to pay through basic needs and opportunity costs



Source. adapted from Hancock[12]

Figure 3. Ability to pay with an income constraint

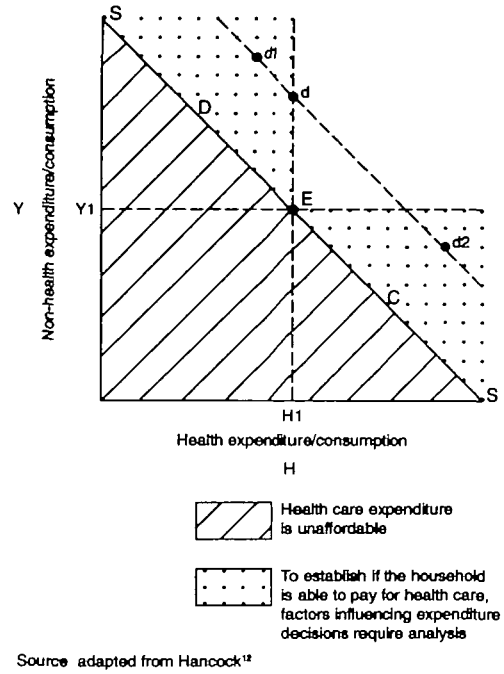
purposes, the difficulties of establishing a person's health 'need' are put to one side.

Consumption patterns in Region A indicate that health care expenditure is unaffordable: the household can afford neither the minimum level of health care it needs (H1) nor a level of other goods and services considered socially necessary (Y1). Conversely, Region B indicates expenditure on health care is affordable, since nowhere in this region is the household forced to lower its consumption of other goods and services below a minimum level.

This approach exposes the logical flaws in the ratio approach. A household which spends under 5% of its income on health care (point a in Figure 1) might not be spending enough to obtain minimum levels of health care and other commodities needed (point a in Figure 2). Conversely the ratio approach defines point b as unaffordable (Figure 1), but from the perspective of opportunity costs point b in Figure 2 is affordable: the household has a consumption bundle large enough to consume levels of health care and other commodities deemed socially necessary.

Regions C and D are more problematic.[12] The household consumes sufficient quantities of one commodity but insufficient quantities of the other. If the household is located in Regions C or D because of an income constraint, then health care can still be considered unaffordable. A simple income constraint can be added to the scenario using the consumption possibility (budget constraint) line SS (Figure 3), which is enough to allow the household to purchase the minimum consumption set E. The position of the budget constraint is determined by available income, and the slope of the curve by the relative prices of Y and H. A household within the shaded area but not on the line SS cannot reach the minimum consumption set E. As a result of the income constraint, therefore, the two triangles Y1SE and H1SE are additional areas representing inability to pay for health care. For example, at point c the household does not consume the health care externally defined as necessary for a given health problem, and it could only purchase the health care it needs (H1) by moving along its own consumption possibility line to point c1, cutting expenditure on other goods and services to a sub-minimum level. c1 is a situation where the household is willing to pay for necessary health care, but unable to pay if opportunity costs are taken into account.

Households whose consumption lies in the dotted portions of Regions C and D in Figure 4 make judgements about affordability far more complex. They have enough income to shift to Region B, but have not done so. To judge whether the household is able to pay for care or not, the reasons why the



Source adapted from Hancock[12]

Figure 4. Can pay or won't pay? Problems with judging ability to pay

household is located in these portions of C and D require further analysis.

First, taking the dotted portion of Region D, a household at point d has enough resources to consume the health care it needs and more than minimum levels of other commodities. But the household moves along its consumption possibility line to position d1 – it has taken a decision to prioritize expenditure on goods and services externally defined as 'non-essential', forcing it to reduce expenditure on health care to sub-minimum levels (i.e. less than H1). The household may have made this decision for the following reasons:

- Informed choice: decision-makers within the household are aware that the health care purchased does not meet health needs, and that the decision to purchase other 'non-essential' commodities will be detrimental to health.
- Ignorance: the household is totally unaware of the health problem and the benefits of investment in prevention or cure.
- Perceived need differs from actual need: payments for externally defined 'non-essential' commodities may be perceived by the household to be essential. In Figure 4, the household at point d1 may be sacrificing needed health care to spend money on 'non-essentials' like cigarettes. This may be considered a 'perverse choice' by outsiders, but smoking by women, for example, has been demonstrated to be a responsible and rational decision which on balance promotes well-being for women and their families.[35] As another example, a household may feel it necessary to pay rent on expensive property to keep it in the family for emotional and kinship reasons. The property cannot be sacrificed to health care needs. In some cultures, households may have to sacrifice health care to pay for perceived social necessities (marriage ceremonies or dowry payments) and to invest in future claims (e.g. through various 'gifts').
- Intra-household resource allocation decisions: the household must be disaggregated to understand why non-essentials are given higher priority than health care. A male household head may prioritize personal consumption of non-essentials (e.g. alcohol) over health expenditure on children or his spouse, resulting in a consumption position similar to point d1 in Figure 4. He may still have enough money to spend on health care for himself, but not for those considered less of a priority, perhaps because they are economically unproductive. A study in Haiti,[36] for example, found that two mothers had not taken their children for immunization because their husbands had expensive surgery which depleted their finances and required wives to devote considerable time to care. While the household can 'afford' health care, individuals within it who do not have a voice in resource allocation cannot. When resources are limited intra-household conflicts will become more intense. At point a in Figure 2 or point c in Figure 3 the household as a unit cannot afford adequate health care for all its members: some may receive the health care they need, but others will not.
- Expense of accessing distant providers: to purchase the treatment needed the costs of transport and time lost may force the household to purchase cheaper alternatives closer to home which are not adequate to meet the health care needed.
- Perceived severity of illness: the illness may be perceived to be so severe that payment for treatment is not considered worthwhile. If the quality of care is perceived to be poor and ineffective, non-essentials may also be purchased at the expense of health care.

The range and complexity of demand and supply factors which might influence a household's expenditure

priorities raises the fundamental problem about an ATP approach based on needs and opportunity costs – an external judgement about a household's expenditure priorities is required,[11] including judgement about all of the household's expenditure patterns. Given the list of reasons why a household might be located in the dotted portion of D in Figure 4 (e.g. at d1), only the first (informed choice) suggests a clear cut 'can pay, won't pay' situation. All the other reasons make judgement difficult, and suggest that the household is facing an affordability problem, even though the price of health care may not be the cause of this problem. Consequently, the policy response might not focus on prices but on information campaigns, sensitive advice and counselling on dowry expenditure obligations, or ensuring better perceptions of health care quality at government facilities.

Second, take the dotted portion of Region C in Figure 4. The household moves along its consumption possibility line from d to d2 – it has taken a decision to spend more on health care than 'needed', forcing it to reduce expenditure on non-health commodities to sub-minimum levels (i.e. less than Y1). The household may have made this decision for the following reasons:

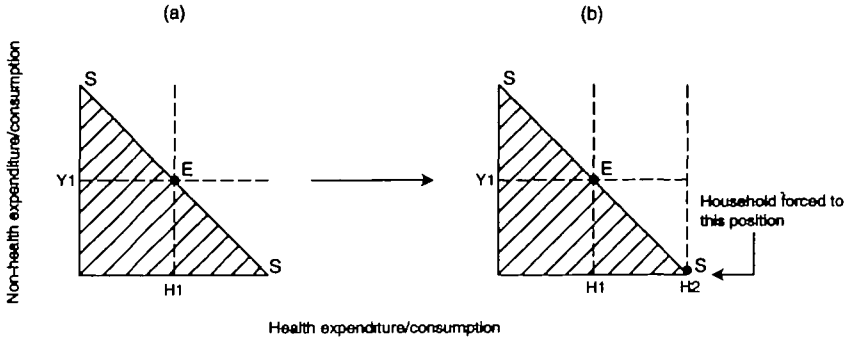
- Informed choice: the household is fully aware that effective care can easily be purchased at a lower price with no stigma or social cost, but it still chooses to pay more at the expense of other essentials on the grounds of status (i.e. snob value).
- Perceived health need versus actual health need: a household might locate at point d2 due to poor information. It believes that more sophisticated and expensive biomedical treatment is more effective when in fact cheaper biomedical alternatives are available; or it may spend lots of money on ineffective drugs. In addition, in many societies the cause of certain illnesses may be perceived to be interpersonal, based on witchcraft or the interventions of spirits, ancestors or gods. Treatments for these symptoms can be more expensive than the treatments prescribed at the clinic, and although 'not needed' from a biomedical perspective, are necessary in that particular context.
- Poor quality of cheap alternatives: the household spends more on health care because it goes to a mission or private facility instead of the free or relatively cheap government facility. This may not represent a 'choice', since the technical and interpersonal quality of government services may be so low that attendance is simply not worth the effort: drugs may be out of stock, waiting times may incur too many costs, and staff may be rude.

To judge whether the household located at point d2 is facing affordability problems, an external judgement about a household's expenditure priorities is again required. Given the reasons listed above, only the first (informed choice) suggests that the household is able to pay for health. All the other motives for sacrificing consumption of essential commodities to pay for care suggest that the household is facing an affordability problem. Once again the policy response might not focus on prices, but on sensitive information campaigns and ensuring better quality care at government facilities. Given the need for consistent judgement, the space or focus of concern requires definition and consistent application. For example, is concern focused on ATP for biomedical care or on ATP for all forms of care necessary for well-being?

A dynamic model makes it possible to consider the impact of sudden health care needs. Figure 5a represents an 'average' household similar to that represented in Figures 2–4. The morbidity experienced by the household each year requires levels of health expenditure equal to H1. Our typical household, constrained by the budget line SS, locates itself at point E where it can just afford to purchase its health care and non-health care needs. If the household is suddenly hit by serious illness its minimum health care needs may increase from H1 to H2 (Figure 5b). The household can only purchase the health care it needs by devoting all of its resources to health care and none to other basic commodities (Figure 5b). Considerable sacrifices to other consumption and investment needs may be incurred, because for economic and emotional reasons the increased health needs of a family member cannot be ignored. The more serious the illness, the less choice but to pay for treatment and make sacrifices elsewhere. As the opening quote of this paper suggests, this can hardly be considered willingness *and* ability to pay. Alternatively, the household may be forced to stop health care payments.

2.3 Ability to pay as a long-term concept

The discussion so far has argued that health expenditure is unaffordable when utilization is deterred for financial reasons, or when consumption of health care and other commodities falls below minimum needs.



Source adapted from Hancock[12]

Figure 5. Sudden illness, increased health needs and ability to pay

Such sacrifices, however, may not have adverse effects on the household in the long run. For example, temporary inadequate food consumption or the temporary withdrawal of a child from school may be short-term strategies without long-term adverse effects. Some households may even build up non-productive assets or savings for the specific purpose of selling them in times of need, without adverse consequences.[10] The concept discussed above is therefore one of inability to pay in the short run.

The problem of ATP also requires a longer term perspective, to assess whether sacrifices to consumption or investment have adverse consequences in the long term. In the long term, the costs of accessing health care can be considered affordable when consumption of and investment in essential items such as health and education does not fall to levels which threaten health and future earning capacity, and when health expenditures do not threaten productive assets, livelihood sustainability, capacity to pay for minimum needs in the long run, and ultimately health.

3. Household resources: entitlements, coping strategies and ability to pay

When faced with a sudden contingency like ill health and medical costs, the costs and sacrifices incurred by the household will depend on:

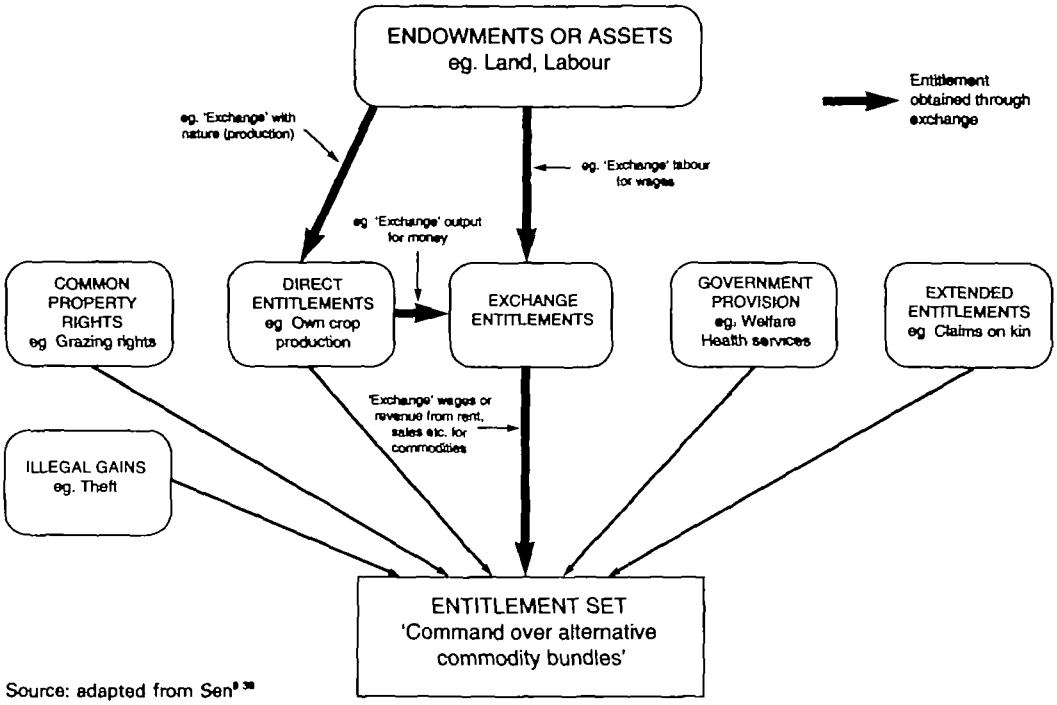
- the nature, frequency and duration of illness and the cost of treatment needed;
- the various resources available to the household;
- the responses it adopts – the way it mobilizes (or does not mobilize) these resources.

The nature of the illness will be critical to ATP. An acute illness may impose sudden costs on the household which require sudden resource mobilization, while a chronic disease such as TB or AIDS will emerge as a 'long-wave disaster',[37] with long-term cost, response and resource implications.

Cash income is not the only determinant of ATP for health care, and is not the only resource available to households. Potential resources might include cash, assets, education and the ability to organize resources effectively, and investments in and claims on social networks.[32] A framework to examine household resource mobilization, which addresses the question of asset sales and threats to future livelihoods, can be drawn from studies which examine household capacity to cope with a different contingency, namely famine. The key conceptual tools in this framework are 'entitlements' and 'coping strategies'.

Sen's concept of entitlements[9] examines how households gain command over commodities. The 'entitlement set' of a household, or the bundle of commodities it can command, is primarily determined by the following entitlements (Figure 6):

- its **endowments** (assets) or initial ownership bundle, normally labour and land;
- with its endowments the household can command **direct entitlements** through own production of crops or livestock ('exchange' with nature);
- endowments (labour, land) and direct entitlements (cash or food crops) can be exchanged for money, which can then be used to purchase other commodities. These are called **exchange**



Source: adapted from Sen[8,38]

Figure 6. A typology of potential household resources or entitlements

entitlements. For example, a household sells its labour and purchases commodities with the wages, a landowner rents out land and purchases commodities with the rent, or sells land to purchase essential health care. Farm produce can also be sold to purchase commodities;

- **common property** or open access rights – rights to common land for grazing, foraging and food;
- **government provision** of essential services, social security or welfare: these can form an important component of a household's entitlement set, possibly threatened by government budget cutbacks and financing reforms such as user fees;
- **extended entitlements** – while the above entitlements focus on existing legal rights, extended entitlements are not necessarily legal rights to command commodities but are part of broader social relations which make certain claims legitimate but not enforceable by law. For example, the household head might traditionally consume more food than other household members, or inter-household resource transfers in times of financial crisis may be legitimate through moral economy or kinship relations: ' . . . such socially sanctioned rights may be extremely important in determining the amount of food or health care or other commodities that different members of a family get . . . '.[38 (p.11)]
- **illegally obtained commodities**: through theft or violence – not 'entitlements' in the true sense of the word.

This disaggregation of household resources is central to an analysis of household ATP for health care, since it highlights the different resources and potential strategies available to an individual, a household or different occupational groups (contrast the economic positions of subsistence farmers, landless labourers, urban proletariat, capitalist farmers, female-headed households etc.).[38]

Finally, there is an important distinction between access to resources and how individuals or households actually use them.[39] Vulnerability, or the ability to mobilize resources to cope with financial contingencies, is an important factor influencing ATP, and understanding of such coping strategies has been developed through work which examines vulnerability to famine.[40–43] For example, Swift's disaggregation of assets into investments, stores and claims improves understanding of the potential asset

Table 1. The disaggregation of assets

Asset categories and examples
Investments
human investments: education; health
individual productive assets: labour; land; trees; livestock; farming equipment
collective assets: common property rights
Stores
surplus farm produce or food stores: food and non-food crops
valuables/possessions: jewellery; radios, bicycles
savings
Claims
claims within household/kinship networks: extended entitlements; remittances
claims on other households: neighbours and friends
claims on patrons, big men, chiefs etc.
claims on local and national government: welfare; user fee exemptions

Source: Swift[43]

strategies available to households when medical costs arise (Table 1).

Entitlement theory and coping strategies form the building blocks for an empirical analysis of ATP in the short and long run. Their strengths include the systematic classification of tangible and intangible resources available to households, and consideration of the longer term opportunity costs of foregone investments and productive asset depletion. The concepts of entitlements and coping strategies also allow a link to be made between household ATP and wider socioeconomic and cultural contexts, for example: reduction of a household's entitlement set and ATP due to macro-economic recession and adjustment (rising food prices, rising fees for health and education; falling real wages and unemployment);[3] reduction in a household's ATP due to a breakdown in its capacity to use normal coping strategies as a result of social disruption, violence, population displacement and disease epidemics;[44] the importance of local land, labour and credit markets to ATP; and the importance of strong moral economy or 'traditional' safety nets.

4. (How) Are the poor coping?

Loss of work and income due to illness can dramatically reduce a household's entitlement set and ATP.[45] This paper accepts these losses can be considerable, but focuses on the questions: do households allocate limited resources to health care costs, or reduce or abandon treatment, and what are the opportunity costs of these decisions?

Households may mobilize resources to pay for insurance strategies which reduce the likelihood of ill health and increase ATP for medical treatment. Insurance strategies which might improve ATP for health care include:

- preventive measures to reduce the risk of illness, including purchase of clean water, mosquito coils, impregnated bed nets;
- expenditure on health insurance;
- investment in informal savings and credit schemes;
- investments in liquid assets or 'buffers', which increase the 'resilience' of the household when it must cope with sudden contingencies;
- and 'investments' in support networks and similar resources on which claims can be made in the future.[32]

In many countries the household must pay for these insurance strategies. In Dar es Salaam, for example, an average household spends about 10% of its income on domestic mosquito control because there is no effective urban mosquito control programme.[46] While these ratio data cannot tell us about affordability in terms of opportunity costs, they raise questions for investigation, particularly whether households are able to pay for and can prioritize preventive strategies.

Coping strategies are employed once the household needs to mobilize non-routine resources for pay for necessary treatment. Studies which have examined ATP from a perspective of coping strategies and their opportunity costs are reviewed below.

4.1 Evidence from household survey data

A few studies have used household surveys to generate information on household cash availability and the different ways households mobilize resources. In a review of the Bamako Initiative in five African countries[11] survey results were inconclusive. Widespread inability to pay was indicated by answers to general questions which asked whether people were prevented from using services due to a lack of cash (e.g. 70% of the sample of Kenya, 66% in Uganda, 96% in Nigeria); but the problem was more restricted (10–30%) when the respondent was asked to remember a specific experience when they actually

used a service but were denied drugs due to lack of cash. The authors assumed answers to the more specific questions were more reliable. However, more serious ATP problems were also indicated: in certain communities nobody used government services due to the cost; and while Bamako Initiative services were often considered affordable, a much larger proportion of households may have found the price of more sophisticated services prohibitive.

A survey in Sierra Leone[10] found that cash to pay for care was not available in 56% of households, and that a lack of cash deterred 34% of illness cases from seeking medical treatment. In Tanzania, 32% of rural households surveyed and 22% of urban households found it difficult to pay for health care, figures interpreted to be a 'substantial proportion' of the population.[2] A survey in Kenya reported similar findings: 59% of respondents did not have cash available to pay for care.[19]

The surveys described above also generated data on households' preferred responses to cash shortages at times of illness. In Sierra Leone money was obtained through coping strategies in over a third of the cases where money was not readily available. Respondents mentioned borrowing from friends and relatives most frequently, followed by the sale of food crops and receipt of gifts (Table 2).

Other community surveys asked all respondents about the resources used to pay for care (Table 3). In Tanzania and Kenya about 40% of respondents used regular household income and did not need to resort to other sources. The survey instrument used by McPake et al. in Kenya, Nigeria, Burundi and Guinea found that nearly all respondents resorted to non-routine cash sources, suggesting a lack of routine cash income and widespread payment difficulties.[11] However, the question asked: 'How do you solve the cash problem in the case of urgent need for health services?', which may have encouraged respondents to consider only those situations where cash was not readily available.

These findings indicate that the dominant resources mobilized when cash is not available are extended entitlements (or claims on support networks). Selling stores of value (farm produce, belongings and livestock) were also common responses, but it was unclear whether the farm produce sold was surplus to requirements or essential to current consumption needs. Other household surveys in Thailand and

Table 2. Mobilizing resources to pay for care in Sierra Leone

Households without available cash: responses by sub-sample (n=545)	Frequency (%)
make claims on kin or other households (borrow)	44.4
borrow cash from money lender or bank	1.7
sell food crops	20.9[a]
forego investments in other essential areas	1.3[b]
sell cash crops	4.4
use, sell or pledge stores and assets:	
sell belongings	4.0
sell livestock	0.7
pledge land	0.7
use savings	—
gifts, charity or begging	9.4
delay payment	3.9
other	9.3
Total	100.0

[a] it was unclear whether the food sold was normally consumed by the household, or whether it was surplus to requirements

[b] business capital

Source: Fabricant[10]

Uganda reported a similar reliance on claims from relatives and sales of cash and subsistence crops to pay for care.[47,48] Again it is not clear whether such sales were surplus or essential consumption items.

4.2 Evidence from other (mostly qualitative) studies

Qualitative research has explored household expenditure decisions in greater depth. The strategies and responses identified in the literature are categorized in Table 4. Responses refer to specific actions within a broader strategy.[41] The five strategies listed in the table are briefly reviewed.

Continue to spend cash on health care

Health care is likely to be purchased despite financial difficulties if the illness is perceived to be severe. Making claims on kin and friends was the resource most frequently identified from qualitative studies,[1,3,10,18,49] and often a critical buffer for households:

> 'Perhaps the most important factor promoting equality of utilization of primary health care units is the possibility of borrowing (from friends and relatives) . . . According to focus group discussions, the system works because borrowing is taken seriously: loans are nearly always paid back

Table 3. Mobilizing resources to pay for care

Sources of money for health expenditure: responses by total sample	Tanzania	Kenya	Kenya	Uganda	Nigeria	Burundi	Guinea
routine wage or salary income	40.2%	41.2%	-	-	-	-	-
make claims on kin or other households (borrow)	35.6%	21.1%	45%	49%	36%	35%	25%
borrow cash from money lender or bank	-	-	-	-	1%	1%	2%
forego consumption of other essential commodities (e.g. food)	-	-	-	-	-	-	-
forego investments in other essential areas	-	-	-	-	-	-	-
sell farm produce[a]	32.3%	19.3%	9%	-	23%	18%	20%
use, sell or pledge stores and assets:							
sell belongings	15.1%	-	15%	15%	9%	22%	2%
sell livestock	16.6%	13.2%	-	-	-	-	-
use savings	-	-	4%	-	6%	-	12%
begging or charity	-	-	2%	-	3%	16%	11%
delay payment	-	-	-	-	11%	-	18%
other	-	4.4%	25%[b]	33%[c]	15%[d]	-	7%
Total[e]	139.8%	99.2%	100%	97%	104%	91%	97%

[a] It was unclear whether this category of response referred to sale of food surplus to consumption requirements: it was referred to as sale of farm produce or sale of food

[b] Included delaying payment, not seeking care and borrowing money from money lender

[c] In the Uganda survey, 29% of respondents were categorized as using a 'combination' of responses which were not reported - the other 4% was classified as other

[d] Included not seeking care and paying in kind

[e] Totals of more than 100% indicate respondents gave more than one answer; totals less than 100% were due to low response rate. Sources: Abel-Smith and Rawal,[2] McPake et al.,[11] Mwabu et al.[19]

> because there is no recourse in emergencies once a good reputation is lost; in that case a family may have to leave the area and start anew'.[10 (p.172-4)]

These findings strengthen the conclusion that support networks are heavily relied upon by households. These networks are occasionally organized into 'money exchange networks' with members contributing small sums each week.[49] In Zambia a more desperate strategy was to beg for assistance from friends and kin.[18] Heavy reliance on support networks incur costs, however, namely support networks being placed under increasing strain (see section 4.3).

Delaying payment due to immediate cash shortages is likely to be a response preferred and adopted in farming communities where income patterns are seasonal, and by poor wage labourers awaiting the next pay packet. The survey data from Nigeria, Guinea and Sierra Leone identified these responses (Tables 2 and 3), while rural focus group discussions in Ghana called for greater flexibility in payment methods and credit facilities to improve ATP in farming communities: traditional healers and drugstores were said to be more affordable than government facilities because they allowed payment in-kind or offered credit facilities.[1]

Although the sale of farm produce was a common response, only a few studies have examined whether this was surplus produce or necessary food for consumption. Coreil's study of allocation of household resources for health care in rural Haiti found that families spent considerable amounts on medicine for children aged 2-5 years, but as a result they could not afford adequate diets for these children to prevent nutritional deficiencies.[50]

In the few studies available, the main area of investment reported to be under threat, excluding health for the moment, was education.[1,3,27] In Ghana, for example, a man who paid 2000 cedis for his wife to spend four days in hospital with jaundice also needed to make subsequent payments for drugs. These payments coincided with the reopening of schools, creating financial difficulties:

Table 4. No cash to pay for care: a typology of strategies and responses

Trigger event	Consumption behaviour	Strategy	Response
Health care costs beyond routine budgets	Protect consumption of necessary health care	Continue to spend cash on health care	Make claims on kin/other households Begging or charity Delay payment Forego consumption of essential commodities Forego investment in other essential areas Sell cash crops Borrow cash from money lender or bank Use or sell stores and assets
		Receive health care without spending cash	Avoid payment Seek exemption
	Modify health care consumption	Delay or reduce consumption	Delay consumption Reduce attendance rate, length of stay Cut level of treatment Do not complete treatment regime
		Diversify consumption or reduce consumers	Shift demand to other providers Only treat priority individuals
		Stop consumption	Do not seek treatment

Source: adapted from Devereux[42]

> 'The money spent on my wife's illness was earmarked for the payment of the children's school fees and buying of school uniforms'.[1 (p.29)]

Sales of productive assets and stores also suggest payment difficulties and raise concerns about the consequences of health care expenditure. Pryer's study in Bangladesh found that medical expenditure was higher for those households with assets to sell:

> 'In all such households the cost of medical expenditure was borne by the sale of assets. As soon as the receipts from the sale of the last asset had been spent, all further costly medical expenditure ceased'.[45]

In a detailed household history profile, the husband had become partially paralysed in 1968 and his wife had sold the marriage gold, her husband's tools, and various household possessions to finance treatment by religious and homeopathic healers. After a period of better health and accumulation, the husband was incapacitated again, and remaining assets were sold to meet consumption needs and to finance medical treatment.[45]

Studies in Thailand[51] and Kenya[52] reported that 60% and 24% of land sales, respectively, were due to illness. The sale of these productive assets may have a costly impact on the household's future livelihoods and earning capacity, and 'distress sales' of this kind suggest the household has reached a critical threshold in its capacity to cope (ability to pay), having exhausted other responses such as reduced food consumption and sale of possessions, which entail lower opportunity costs. However, the socioeconomic status of those selling the land and the longer term impact of these sales on future livelihoods had not been investigated.

(Attempt to) receive health care without spending

An alternative strategy is to obtain treatment without charge, through payment avoidance or exemption claims. In Papua New Guinea staff at a rural district hospital (120 beds) reported that inpatients would tell the clerk they could not pay, and would then abscond before the clerk's second visit. Staff also noted the development of 'informal' arrangements to avoid payment:

> '. . . many patients without money waited until the government cashiers finished work and then were attended to by the health staff. Health staff reported high outpatient attendances outside normal working hours'.[20 (p 1111)]

In many countries policies to exempt the poor exist in principle,[53] so that patients attending facilities without enough money can claim free care. However, exemptions for the poor are often not available in practice, due to lack of administrative capacity, inconsistent policy implementation across facilities, overzealous fee collection, and staff reluctance to grant exemptions.[54,55] Studies in Papua New Guinea[20] and Zambia,[18] where officially patients can claim exemption, observed that patients without money were sometimes refused treatment, with serious health consequences.

Delay or reduce health care consumption

After user fees were increased in 1991, in five poor Zambian communities women expecting difficult deliveries left their admission to the last moment for fear of paying more.[18] In Zimbabwe delivery admissions remained constant after fees were raised in 1991, but the number of babies born before arrival increased by 10% and unbooked mothers who delivered at facilities increased by 30%.[56] In Niger outpatients who paid fees delayed seeking care for longer,[57] and in Uganda some mothers waited until their child was critically ill before attending the hospital to ensure they were eligible for free admission to the acute ward.[58]

Other responses to cash constraints include the purchase of partial drug doses, non-completion of treatment courses and reduced length of stay.[1,10,18,20,23,56] As exemptions were rarely granted in Ghana: 'it was more common practice to reduce the quantity of drugs sold and to ask the person to return for more drugs if they had access to some money'.[1 (p.36)] With malaria cases, for example, the amount of paracetamol and chloroquin prescribed was halved.

Diversify consumption or reduce consumers

While quantitative facility-based studies cannot discern whether non-attendance is due to inability to pay or reluctance to pay, qualitative studies have begun to explore this question in greater depth. In Ghana the poor resorted to local drugstores or drug pedlars because they were cheaper than government health centres:

> '. . . if she had about 20 or 30 cedi she would go to the drugstore, buy something like paracetamol for the child to chew in order to reduce the illness 'till she was able to borrow some money. Then she could bring her child to the health post'.[1 (p 28)]

Reducing the number of health care consumers in the household is a potentially damaging response which focuses attention on intra-household resource allocations and potential conflicts of interest along age or gender lines within the household. Cash shortages may force decision-makers to prioritize the health care needs of economically productive household members above the needs of children or the elderly.

Stop health care consumption

The response most likely to have direct adverse health consequences is the decision not to seek treatment if the household does not have adequate resources or if the costs are likely to impoverish the household. As mentioned above, qualitative studies can start to distinguish between 'can't pay' and 'won't pay' responses to health care charges. Focus group discussions held in Ghana reported non-attendance because of lack of cash, and noted the vulnerability of young mothers who do not work or do not have access to cash within the household.[1] In Zambia non-attendance due to inability to pay was a commonly identified strategy.[18] In Papua New Guinea all members of a focus group discussion stated that they knew someone or had themselves been in the position of being sick, and not attending the facility due to inability to pay.[20] In rural areas where people do not receive regular cash incomes the transport costs and small fee levels were seen as prohibitive:

> 'The people in the town are OK but for us in the bush we do not have money to pay for a vehicle to come to town . . . For women too they do not have money to come to town and stay and die at home. We are very sad about this. It is hard for us village people. . . . If they put up the fees we couldn't cope. We would stop in the village and die.'[59 (p.37)]

Directly asking users if they did not attend for financial reasons does not totally solve the problem of understanding motives for non-utilization, since respondents may be expressing preferences or a feeling about the 'fairness' of fees, as much as their inability to pay.[11] Other information about the household's access to resources, ability to mobilize

resources and expenditure patterns may also be needed.

4.3 Household strategies and responses: what are the consequences?

Household surveys generated useful descriptive data on the extent of payment difficulties and the strategies most frequently adopted in response to such difficulties, but the reasons why these particular strategies were adopted and the potential adverse consequences of them were not explored in any detail. In contrast, the qualitative studies generated richer information about affordability, since they explored in more detail the dilemmas, priorities and decisions facing households.

The qualitative studies also began to identify the groups most vulnerable to payment difficulties. Since common strategies included borrowing from kin or friends, or the sale of possessions and farm produce, affordability problems are likely to arise for those who cannot make claims upon strong kinship or social networks and for those who have few stores to sell. Through participatory research techniques, the following groups were identified as those least able to pay in Zambia:[18] women, especially widows, divorcees and unmarried women with children (i.e. female-headed households); the very old, especially those who live alone and are too old to earn income; the ultra poor – those with minimal income generating capacity; and those without extensive or strong social networks. In addition, households with high dependency ratios, and especially those with many young children and elderly dependants, are likely to face more sickness and may have fewer resources to cope with the costs of sickness.

Qualitative studies also began to explore the consequences of the strategies adopted by households with payment difficulties. For example, although support networks were identified as important resources, they were increasingly under strain. In Ghana respondents stated that reliance on these networks had high economic and social costs for their extended families.[1] In a study examining the social impact of structural adjustment in Harare, demands on paternal uncles and older siblings who are expected to help with school fees were exacerbating tensions between family members, often along gender lines.[3] In Zambia 'traditional' support mechanisms could no longer be relied upon as safety nets for the ultra-poor:

> ' . . . kinship ties have weakened in some places to the point where people no longer feel able to help each other. As one woman put it in a Jumbe focus-group session, the high cost of living has killed off extended family ties: "it is now each one for herself!" '[18 (p. 80)]

These findings highlight the impact that wider economic recession and entitlement reduction have on mutual support networks and a household's ability to make claims on others.

The potentially serious consequences of other strategies, such as cuts to food consumption, withdrawal of children from school, 'distress sales' of assets, and the decision to delay or not seek treatment, were not followed up in the studies reviewed. The decision to delay or reduce treatment may have cumulative adverse impacts in terms of resistance to drugs, worse health and higher health care expenditures, but no evidence of these impacts was reported. Non-treatment may have very serious consequences, but only in Zambia were some of these adverse effects explored. Maternal mortality rates were increasing and immunization rates declining because women were staying at home to have deliveries. More tragic impacts were also reported: patients being turned away and subsequently dying, or patients 'staying at home to die'. These cases were argued to be the tip of an iceberg of hidden suffering.[18]

5. Conclusions on ability to pay: future research and policy directions

The underlying rationale of this paper is concern about the impact of health service and other charges on households' limited budgets, their expenditure priorities, and their consumption and investment patterns. The paper's main premise is that WTP is not synonymous with ATP. In particular, WTP and expenditure studies do not examine where households obtain resources to pay for care, and the consequences of the strategies adopted when payment difficulties arise. These costs are central to the concept of ATP put forward here.

Ability to pay is a complex empirical question. Household priorities, resources and vulnerability are multi-faceted. Each household and individual within it will face different illness and cost burdens, resource flows and constraints. Furthermore the ATP approach outlined in this paper implies that external value

Table 5. Coping strategies: what are their opportunity costs?

Response	Opportunity costs in short and longer term
Claims on kin/friends	Support networks under strain - can they be relied upon?
Borrowing outside family	Debt repayments - impact of repayments on future consumption and investment? Impoverishment?
Forego essential food consumption	Nutritional deficiencies? More prone to illness?
Forego investment (e.g. on preventive health, education, business or farming inputs)	Future health endangered? Future earning capacity reduced? Future crop yields reduced?
Sale of productive assets (e.g. land)	Loss of livelihood? Impoverishment?
Sale of stores	Fewer buffers and greater vulnerability in future?
Delay or reduce health care consumption	More complications? Greater cost in long run? Risky reductions in length of stay? Greater resistance to drugs? Ineffective treatment regime?
Diversify health care consumption or reduce consumers	Who's care is sacrificed? What implications?
Stop health care consumption	Increases in preventable morbidity and mortality?

judgements about what is 'needed' and about household expenditure priorities and patterns are required to judge ATP. This raises a fundamental dilemma, since definitions or perceptions of need differ between individuals, households and groups. These dilemmas have been raised but not fully addressed in this paper, and require further debate. Possible directions for research and policy development relevant to the problem of affordability are outlined below.

5.1 Gaps in knowledge

Although the evidence presented in section 4 identified various resources and coping strategies used by households when payment difficulties arise, there is still only fragmentary information on the following issues relevant to affordability.

- Why do households adopt the different coping strategies and responses listed in Table 4? How does severity of illness influence the response(s) adopted? What are the trigger or threshold points which force households into strategies with more serious consequences, such as the sale of productive assets or the abandonment of treatment? Are there common response sequences?
- How do households respond to the combined impact of fees from different sectors? Which expenditures are considered essential or non-essential? How do households prioritize their expenditures?
- Which population and illness groups are most vulnerable to, or least able to cope with, health care costs? In particular, the question of ATP requires disaggregation of the household, to investigate how limited resources are allocated to the health care needs of individuals, especially women and children.
- How do supply-side factors, such as distance, quality of services or payment methods, influence ATP for health care?
- ATP is founded on the principle of opportunity costs but there are basic gaps in knowledge about the short and long term consequences of coping strategies adopted by households when payment difficulties arise. Table 5 lists the common strategies identified in the literature, and outlines some broad questions about their impact on households which require further research.

The informational requirements for assessing ATP are complex. Survey methods could generate stable and representative data about payment difficulties and strategies used, but these should be complementary to qualitative methods, since many of the questions listed above require in-depth investigation of household priority-setting and expenditure patterns. And because the impacts of such decisions need investigation, longitudinal household studies should be a key component of future research into affordability. To date there have been few qualitative longitudinal studies of this nature.

Rapid and participatory appraisal techniques could complement these longitudinal studies, since they generate rich information on community and household livelihoods, perceptions of well-being, and perceptions of health need.[60,61] For example, wealth ranking and social mapping techniques could identify

different socioeconomic groups, different types of household and different types of vulnerability for subsequent in-depth study.[62] These techniques might later be developed into cost-effective methods for assessing ATP.

5.2 Problems and prospects for policy development

Although ATP is a critical policy question, the large administrative and informational capacities required to assess ATP pose problems for policy-makers and cost-recovery planners in developing countries.[54] As a result the policy response to differential ability to pay has been fraught with difficulties.

In the majority of countries with user fee systems there is an official policy to exempt patients who are 'unable to pay', but there is no guidance on what 'unable to pay' actually means in practice, and it is very difficult for health staff to assess a patient's financial situation. Staff are often reluctant to grant exemptions, they are inconsistently implemented across facilities, and those eligible for exemption often fail to take-up the benefit. As a result exemption policies are normally ineffective in reaching their whole target group.[54] A few countries (e.g. Thailand and Zimbabwe) have established national 'inability to pay' income criteria below which people are judged to be eligible for exemption, but these income thresholds do not help health staff or community leaders to actually measure each patient's income.

The evidence presented in this paper indicates the necessity and urgency for policy development to protect those who are facing increasing burdens from cost recovery in a variety of sectors. Policy initiatives must be appropriate to local contexts.[63] For example, safety net policies might build upon existing welfare distribution schemes which already have in place information systems and administrative capacities. Community-based screening procedures which can harness local sources of knowledge about people's resources and ability to pay may be another option.[18] Supply-side interventions can also contribute to ATP, for example by raising the perceived quality and acceptability of cheaper sources of care or by reducing the distance and transport costs to health facilities.

The strategies and local organizations which households currently rely upon to help pay for sudden contingencies might also be supported by local and central government, NGOs and donors. For example, local savings schemes or rural health insurance schemes, based on existing community institutions, could be supported or developed to make health care more affordable. Unlike user fees, prepayments, possibly through instalments, 'would allow households to make direct financial contributions to the cost of their health care without placing financial barriers to obtaining care at the time of illness'.[5] Examples of such schemes include the Abota rural health insurance scheme in the Gabu region of Guinea and the Carte d'Assurance Maladie in Burundi.[64,65] Government and NGO policy development will therefore need to be innovative and sensitive to household or community strategies. Such interventions should not be avoided because they are costly or difficult to achieve.[66] As a first step, the question of ATP needs further investigation to assess the nature and extent of the problem, the potential for policy initiatives, and the appropriate design of policy interventions.

References

1 Waddington CJ, Enyimayew KA. A Price to Pay: the impact of user charges in Ashanti-Akim District, Ghana. *Int. J. Health Plann. Manage.* 1989; **4**: 17–47.

2 Abel-Smith B, Rawal P. Can the poor afford 'free' health services? A case study of Tanzania. *Health Policy Plan.* 1992; 7(4): 329–41.

3 Kanji N, Jazdowska N. Structural adjustment and women in Zimbabwe. *Review of African Political Economy* 1993; **56**: 11–26.

4 World Bank. *World Development Report: Investing in Health.* New York: Oxford University Press, 1993.

5 Arhin D. Health insurance in rural Africa. *Lancet* 1995; **345**: 44–5.

6 Berman P, Kendall C, Bhattacharyya K. The household production of health: integrating social science perspectives on micro-level health determinants. *Soc. Sci. Med.* 1994; **38**(2): 205–15.

7 Gilson L. *Government Health Care Charges: Is Equity Being Abandoned?* EPC Publication No. 15. Evaluation and Planning Centre for Health, London School of Hygiene and Tropical Medicine, 1988.

8 Corbett J. Poverty and sickness: the high costs of ill-health. *IDS Bulletin* 1988; **20**(2): 58–62.

9 Sen A. 1981. *Poverty and Famines.* Oxford: Clarendon, 1981.

10 Fabricant SJ. Community financing in Sierra Leone: Affordability and Equity of Primary Health Care Costs. 1992. Unpublished PhD thesis, University of London.

11 McPake B, Hanson K, Mills A. *Implementing the Bamako Initiative in Africa.* PHP Departmental Publication No. 8, London School of Hygiene and Tropical Medicine, 1992.

12 Hancock KE. 'Can pay? Won't pay?' or economic principles of 'affordability'. *Urban Studies* 1993; **30**(1): 127–45.

13 World Bank. *Financing Health Services in Developing Countries: An Agenda for Reform.* Washington DC: World Bank, 1987.

14 Heller P. A model of the demand for medical and health services in Peninsula Malaysia. *Soc. Sci. Med.* 1982; **16**(3): 267–84.

[15] Akin JS, Griffin CC, Guilkey DK et al. The demand for adult outpatient services in the Bicol region of the Philippines. *Soc. Sci. Med.* 1986; **22**(3): 321–8.

[16] Gertler P, van der Gaag J. *The Willingness to Pay for Medical Care: Evidence from Two Developing Countries*. World Bank and Johns Hopkins University Press, 1990.

[17] Bennett S. The impact of the increase in user fees: a preliminary investigation. *Lesotho Epidemiological Bulletin* 1989; **4**: 29–37.

[18] Booth D, Milimo J, Bond G et al. Coping with Cost Recovery: A Study of the Social Impact of and Response to Cost Recovery in Basic Services (Health and Education) in Poor Communities in Zambia. Report to SIDA, commissioned through the Development Studies Unit, Department of Social Anthropology, Stockholm University, 1995.

[19] Mwabu G, Mwanzia J, Liambila W. User charges in government health facilities in Kenya: effect on attendance and revenue. *Health Policy Plan.* 1995; **10**(2): 164–70.

[20] Thomason J, Mulou N, Bass C. User charges for rural health services in Papua New Guinea. *Soc. Sci. Med.* 1994; **39**(8): 1105–15.

[21] Waddington C, Enyimayew KA. A price to pay, part 2: the impact of user charges in the Volta Region of Ghana. *Int. J. Health Plann. Manage.* 1990; **5**: 287–312.

[22] Yoder RA. Are people willing and able to pay for health services? *Soc. Sci. Med.* 1989; **29**(1): 35–42.

[23] Litvack J, Bodart C. User fees plus quality equals improved access to health care: results of a field experiment in Cameroon. *Soc. Sci. Med.* 1993; **37**(3): 369–83.

[24] Jancloes M, Beck S, Van de Velden L et al. PHC in a Senegalese town: how the local people took part. *World Health Forum* 1982; **3**: 376–9.

[25] Knippenberg R, Levy Bruhl D, Osseni R et al. *The Bamako Initiative: Primary Health Care Experience*. Children in the Tropics 184/185. International Children's Centre, Paris, 1990.

[26] Bennett S, Ngalande-Banda E. *Public and Private Roles in Health: A Review and Analysis of Experience in sub-Saharan Africa*. SHS Paper No. 6, Division of Strengthening of Health Services, World Health Organization, March 1994.

[27] Barton T. Household spending for health and non-investment in vulnerable groups: plenary discussion. Proceedings of the dissemination seminar 'Health and Economics in Uganda' edited by R Claesson. International Conference Centre, Kampala, March 7th, 1995.

[28] Huber JH. Ensuring access to health care with the introduction of user fees: a Kenyan example. *Soc. Sci. Med.* 1993; **36**(4): 485–94.

[29] Pannarunothai S, Mills A. Researching the public/private mix in health care in a Thai urban area: methodological approaches. Unpublished paper, London School of Hygiene and Tropical Medicine, 1996.

[30] Sheperd DS, Benjamin ER. User Fees and Health Financing in Developing Countries: Mobilising Financial Resources for Health. In: DE Bell and MR Reich (eds) *Health, Nutrition and Economic Crises: Approaches to Policy in the Third World*. Mass., USA: Auburn House, 1988.

[31] McPhail AA. The "Five Percent Rule" for improved water service: can households afford more? *World Development* 1993; **21**(6): 963–73.

[32] Wallman S, Baker M. Which resources pay for treatment? A model for estimating the informal economy of health. *Soc. Sci. Med.* 1996; **42**(5): 671–79.

[33] Chambers R. Poverty and livelihoods: whose reality counts? *Environment and Urbanisation* 1995; **7**(1): 173–204.

[34] Over M, Ellis RP, Huber JH et al. The Consequences of Adult Ill-Health. In: R Feachem et al. (eds) *The Health of Adults in the Developing World*. Washington DC: World Bank, 1991.

[35] Graham H. Women's smoking and family health. *Soc. Sci. Med.* 1987; **25**(1): 47–54.

[36] Coreil J. Social and psychological costs of preventive child health services in Haiti. *Soc. Sci. Med.* 1994; **38**(2): 231–8.

[37] Barnett A, Blaikie P. *AIDS in Africa: Its Present and Future Impact*. London: Belhaven Press, 1992.

[38] Dreze J, Sen A. *Hunger and Public Action*. Oxford: Clarendon Press, 1989.

[39] Bond VA. *Death, Dysentery and Drought: Coping Capacities of Households in Chiawa*. Community Capacity to Prevent, Manage and Survive HIV/AIDS, Working Paper No. 7. University of Hull, University of Zambia and Karolinska Institute, 1993.

[40] Chambers R (ed). Vulnerability: How the Poor Cope. *IDS Bulletin* 1988; **20**(2).

[41] Corbett J. Famine and household coping strategies. *World Development* 1988; **16**(9): 1099–112.

[42] Devereux S. Goats before ploughs: dilemmas of household response sequencing during food shortages. *IDS Bulletin* 1993; **24**(4): 52–9.

[43] Swift J. Why are rural people vulnerable to famine? *IDS Bulletin* 1988; **20**(2): 8–15.

[44] de Waal A. A re-assessment of entitlement theory in the light of the recent famines in Africa. *Development and Change* 1990; **21**: 469–90.

[45] Pryer J. When breadwinners fall ill: preliminary findings from a case study in Bangladesh. *IDS Bulletin* 1988; **20**(2): 49–57.

[46] Stephens C, Masamu ET, Kiama MG et al. Knowledge of mosquitoes in relation to public and domestic control activities in the cities of Dar es Salaam and Tanga. *Bull. World Health Organ.* 1995; **73**(1): 97–104.

[47] Mongkolsmai D. Survey data from research project, "Public Sector Health Financing in Thailand". Faculty of Economics, Thammasat University, 1993.

[48] Barton T, Bagenda D. Family and household spending patterns for health care. In: Proceedings of the Dissemination Seminar 'Health and Economics in Uganda', edited by R Claesson. International Conference Centre, Kampala, 7th March 1995.

[49] Tungaraza F. Social networks and social care in Tanzania. *Social Policy and Administration* 1993; **27**(2).

[50] Coreil J. Allocation of family resources for health care in rural Haiti. *Soc. Sci. Med.* 1993; **22**(3): 335–43.

[51] Baum B, Strensky T. Thailand: current public health perspectives. *Int. J. Health Plann. Manage.* 1989; **4**: 117–24.

[52] Chambers R. Health, agriculture and rural poverty: why seasons matter. *Journal of Development Studies* 1982; **18**: 217–38.

[53] Russell S, Gilson L. *User Fees at Government Health Services: Is Equity Being Considered? An International Survey*. PHP Departmental Publication No. 15. London School of Hygiene and Tropical Medicine, 1995.

[54] Gilson L, Russell S, Buse K. The political economy of user fees with targeting: developing equitable health financing policy. *Journal of International Development* 1995; **7**(3): 369–401.

[55] Nolan B, Turbat V. Cost Recovery in Public Health Services in sub-Saharan Africa. Mimeo, Economic Development Institute, Human Resources Division, The World Bank, Washington DC, 1993.
[56] Hongoro C. The Effects of User Fees on Health Care Delivery in Zimbabwe. Report prepared for the Ministry of Health and Child Welfare by the Health Systems Research Unit and the Blair Research Institute, funded by UNICEF, June 1993.
[57] Weaver M. User-fees and patient behaviour: evidence from Niamey National Hospital. *Health Policy Plan.* 1995; **10**(4): 350–61.
[58] Personal communication, Jessica Ogden, Research Fellow, Health Policy Unit, London School of Hygiene and Tropical Medicine, UK, 1996.
[59] Thomason J, Mulou N, Bass C. User charges in Papua New Guinea: a review of recent experience. Interim Report on charges for rural health services, Papua New Guinea National Department of Health, submitted to USAID, 1992.
[60] Chambers R. The origins and practice of participatory rural appraisal. *World Development* 1994; **22**(8): 953–69.
[61] RRA Notes. Rapid Rural Appraisal Notes No. 16: Special Issue on Applications for Health. Sustainable Agricultural Programme, International Institute for Environment and Development, London, July 1992.
[62] RRA Notes. Rapid Rural Appraisal Notes No. 15: Special Issue on Applications of Wealth Ranking. Sustainable Agricultural Programme, International Institute for Environment and Development, London, May 1992.
[63] Walt G, Gilson L. Reforming the health sector in developing countries: the central role of policy analysis. *Health Policy Plan.* 1994; **9**: 353–70.
[64] Arhin DC. Institutionalization of prepayment for primary health care: lessons from the Abota in Gabu Region, Guinea Bissau. Research report to the Bamako Initiative Management Unit, New York, UNICEF, 1993.
[65] Arhin DC. The health card insurance scheme in Burundi: a social asset or a non-viable venture? *Soc. Sci. Med.* 1994; **39**: 861–70.
[66] Nabarro D, Cassels C, Pant M. Coping strategies of households in the hills of Nepal: can development initiatives help? *IDS Bulletin* 1988; **20**(2): 68–74.

Acknowledgements

This paper owes much to Lucy Gilson, who planted the initial ideas and provided much of the inspiration. Her subsequent comments were, as usual, incisive and important. Many thanks also to Anne Mills, Jessica Ogden and Gill Walt for their important comments.

Steven Russell is a member of the Health Economics and Financing Programme, funded by the Overseas Development Administration (ODA) of the United Kingdom. The ODA can accept no responsibility for any information provided or views expressed.

Biography

Steven Russell, BA, MA, is a Research Fellow in the Health Policy Unit, London School of Hygiene and Tropical Medicine. After graduating from Cambridge University in 1988 he spent three years living and working in Sri Lanka as a teacher, researcher and then translator for the International Committee of the Red Cross. After completing his MA in Development Studies at the University of East Anglia in 1993 he joined the Health Policy Unit at the London School. His current interests include the role of government in health financing and delivery, willingness to pay studies, exemption policies and the affordability of health care.

Correspondence: Steven Russell, Health Policy Unit, London School of Hygiene and Tropical Medicine, Keppel Street, London, WC1E 7HT, UK.