



H N P D I S C U S S I O N P A P E R

# Overcoming Barriers to Health Service Access and Influencing the Demand Side Through Purchasing

Tim Ensor and Stephanie Cooper

September 2004





**OVERCOMING BARRIERS TO HEALTH SERVICE ACCESS  
AND INFLUENCING THE DEMAND SIDE  
THROUGH PURCHASING**

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## Health, Nutrition and Population (HNP) Discussion Paper

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## Health, Nutrition and Population Discussion Paper

### Overcoming Barriers to Health Service Access and Influencing the Demand Side through Purchasing

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**Abstract:** This paper investigates the role of demand-side barriers in impeding access to the use of health services. Demand-side barriers are defined as determinants of use of health care that are not dependent on service delivery or price or direct price of those services. They include distance, education, opportunity cost, and cultural and social barriers. There is some evidence that these barriers are at least as important in determining access to services as the quality, volume, and price of services delivered by health care providers.

The paper is divided into two sections. In the first section literature on demand barriers to accessing services is reviewed. Since the literature on these barriers is so substantial, the review is restricted to an illustrative survey of the main barriers in low-, middle-, and high-income countries.

The second section surveys studies that report and evaluate methods for overcoming these barriers. The literature here is substantially less voluminous even when gray and unpublished sources are included in the survey. Many of the studies relate to access to obstetrical and family planning care. In most cases evaluation is not rigorous, and it is often hard to separate the impact of the intervention itself from other confounding factors.

Few of the studies reported have an explicit poverty focus, although many of the interventions are conducted in poor areas. There is a clear need for further work to examine the most cost-effective ways of reducing barriers to accessing services and in particular to investigate what methods are most effective in expanding access to essential care among the poor.

**Keywords:** resource allocation and purchasing, health care financing, demand for health care, demand barriers, health care utilization, pro-poor interventions.

**Disclaimer:** The findings, interpretations and conclusions expressed in the paper are entirely those of the authors, and do not represent the views of the World Bank, its Executive Directors, or the countries they represent.

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## FOREWORD

Great progress has been made in recent years in securing better access and financial protection against the cost of illness through collective financing of health care. This publication – *Overcoming Barriers to Health Service Access and Influencing the Demand Side through Purchasing* by Tim Ensor and Stephanie Cooper – is part of a series of Discussions Papers that review ways to make public spending on health care more efficient and equitable in developing countries through strategic purchasing and contracting services from nongovernmental providers.

Promoting health and confronting disease challenges requires action across a range of activities in the health system. This includes improvements in the policymaking and stewardship role of governments, better access to human resources, drugs, medical equipment, and consumables, and a greater engagement of both public and private providers of services.

Managing scarce resources and health care effectively and efficiently is an important part of this story. Experience has shown that, without strategic policies and focused spending mechanisms, the poor and other ordinary people are likely to get left out. The use of purchasing as a tool to enhance public sector performance is well documented in other sectors of the economy. Extension of this experience to the health sector is more recent and lessons learned are now being successfully applied to developing countries.

The shift from hiring staff in the public sector and producing services “in house” from non governmental providers has been at the center of a lively debate on collective financing of health care during recent years. Its underlying premise is that it is necessary to separate the functions of financing health services from the production process of service delivery to improve public sector accountability and performance.

In this Discussion Paper, Ensor and Cooper look at the role of demand-side barriers in impeding access to the use of health services. Demand-side barriers are defined as determinants of use of health care that are not dependent on service delivery or price or direct price of those services. They include distance, education, opportunity cost, and cultural and social barriers. There is some evidence that these barriers are at least as important in determining access to services as the quality, volume, and price of services delivered by health care providers. The authors conclude that despite the importance of demand-side barriers, resource allocation and purchasers often direct policies mainly toward improving the supply side constraints. Most government planning models are supply driven, with staff size and capacity of facilities being key determinants of funding flows. The authors recommend that in the future to address known demand side constraints, policymakers involved in resource allocation and purchasers should shift more attention to population determinants of health care needs, poverty dimensions and demand side policy objectives.

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## INTRODUCTION

This paper provides a review of what we term demand-side strategies for increasing access to health care. We are primarily concerned with improving access to health care not by increasing funding to the present supply by adding equipment, staff, or facilities, but by reducing some of the barriers to reaching these services. We are aware that this distinction is not unambiguous since reducing demand barriers may, in some cases, mean supply-side action such as community, rather than institutional, delivery of services.

The large gap in access to health and health care between different groups in developed and developing countries is well established. Substantial differences in child survival by income and ethnic groups have been identified across a wide variety of Asian, African, and South American countries (Wagstaff 2000; Brockerhoff, and Hewett 2000)—see table 1. At the same time evidence is accumulating that access to health services and the distribution of public subsidies favor richer, urban dwellers over generally poorer, rural inhabitants ((Demery 2000; (Makinen, Waters et al. 2000). In many countries traditional investments in public sector health care infrastructure have not primarily benefited the most vulnerable in society. Given that many governments in low-income countries spend less than US\$4 annually per capita on health, the implications of this inequity are significant (Jowett 1999).

**Table 1. Infant Mortality for Richest and Poorest Income Quintile (per 1,000 births)**

	Male			Female		
	Poorest	Richest	Ratio	Poorest	Richest	Ratio
Africa	106.49	66.42	1.78	102.67	59.01	1.86
Maximum <sup>1</sup>	84.60	29.80	3.53	181.60	113.60	3.55
Minimum	70.00	72.90	0.78	46.90	26.10	1.22
Asia	83.13	42.04	2.56	76.42	38.01	2.26
Maximum	116.80	71.80	4.41	110.10	59.80	3.47
Minimum	45.00	18.20	1.46	35.80	15.50	1.32
South America	64.98	29.93	2.54	64.28	17.36	3.61
Maximum	120.80	44.80	3.12	103.10	24.20	7.36
Minimum	32.30	17.60	1.51	30.20	12.20	1.93

*Source:* Data extracted from DHS data by World Bank, site <http://www.worldbank.org/poverty/health/data>, most recent year available between 1992 and 1998 for each country

Effective strategies for improving access to health and health services have assumed greater importance with the development of the Heavily Indebted Poor Countries (HIPC)

<sup>1</sup> Maximums and minimums are based on the size of the ratio not absolute infant mortality.

debt relief arrangements.<sup>2</sup> Eligibility under this initiative has been agreed for 24 countries. A condition for relief is the development of a Poverty Reduction Strategy Paper (PRSP) that shows clearly how poverty will be tackled across sectors. While health is clearly an important sector, the need to demonstrate poverty impact necessarily challenges existing notions of how funding should be used. In many countries “more of the same” simply does not guarantee an increase in access to services by the poorest groups. Indicators for improving health status are particularly challenging given the somewhat tenuous link between much health care and significant improvements in health indices. The recent report on macroeconomics and health reinforced the need to extend essential services in the poorest countries while at the same time emphasizing that structural change in health services, particularly at the community level, are needed to overcome the substantial barriers to access that exist for the poorest groups (Sachs 2001).

In many ways the demand side in health care is more developed in low- and middle-income countries than it is in many high-income economies. Low levels of public spending, sparsely distributed facilities, and the need to negotiate through a network of informal exchanges even once at a facility mean that consumers are often well used to making choices among providers. In the event of illness the average British citizen will visit a general practitioner or, in the case of an emergency, an accident and emergency department (often in an ambulance). In a similar situation an average Bangladeshi has a myriad of complex, and potentially confusing, choices to make. A rural citizen must choose between visiting a local subdistrict or union health center, perhaps a facility run by a nongovernmental organization (NGO), a local drug store (where the owners, qualified pharmacists or not, are only too willing to offer advice), a village doctor (who may have had at least two weeks training), or make the major decision to hire a rickshaw and then pay for a bus ticket to get to the nearest district hospital. To add to the problem, household finances may mean that choices must be made about which household members can receive treatment. Millions of citizens each day make this series of complex decisions.

The supply of services is only one factor in the decisionmaking process. Just as important are the physical and financial accessibility of services, knowledge of what providers offer, education about how to best utilize self- and practitioner-provided services and cultural norms of treatment. Yet the experience in most countries is that supply-side considerations usually dominate the planning process. Most government planning models have historically been supply driven, and staff size and capacity of facilities have determined funding flows. With the development of resource allocation formulas (some approaches are reviewed in Van de Ven and Ellis 2000), attention switched to population determinants of health care need and funding flows. Formulas increasingly take into account small area determinants of need. Most of the funding is, however, still allocated

<sup>2</sup> Eligibility for relief provided under this initiative is based on debt (net present value) to export levels of 150 percent (less for some export-dependent economies). The criteria are applied only once the debt has been restructured according to the so called Naples terms of the Paris Club. Information on the HIPC initiative is provided at <http://www.worldbank.org/hipc>.

to health care facilities and practitioners, although it is increasingly recognized that demand factors can be at least as important in determining use of appropriate services

At the outset it is important to be aware of the limitations of demand-side strategies. Demand creation is not a substitute for targeted interventions in supply. If health services are not of adequate quality, no amount of demand stimulation will induce people to access them. It is also important to realize that many potential interventions on the demand side are extremely wide ranging and often stray a long way outside what is traditionally seen as the health sector. In practice many of the interventions may have to be conducted through ministries other than health—a challenge for cross-government collaboration. The development of poverty strategies provide one forum for such “joined-up” policymaking and suggests a real opportunity for grounding many of the interventions in genuine collaboration.

In this paper we begin by highlighting the main factors that are expected to determine the demand for health care. Evidence on the extent to which each of these factors acts as a barrier to demand is then presented. This is not intended to be a comprehensive review but indicative of the impact and complexity of the effects described.

Next, we present available evidence on a range of strategies that have been used to mitigate the influence of demand barriers. This is not a systematic review for two reasons. First the scope of the subject is extremely broad, both in terms of geography and topic, and the material examined diverse, making it difficult to specify the parameters of such a review. Second, few evaluations meet the strict criteria for developing an evidence base. Some provide quantitative evidence of effectiveness while in other studies a general change is discussed. Few demonstrate effectiveness with the rigor required to show that an intervention has had a quantifiable impact after observational and confounding factor bias has been eliminated.

In the final section we discuss the implications for future policymaking, particularly as they relate to their poverty impact and relationship to the development of PRSPs.

We have chosen to limit the scope of this potentially large study in the following ways. First, in discussing education and information the scope is limited to interventions that are expected to influence the demand for health care. This rules out much health education that is designed primarily to improve knowledge of health, self-treatment, and lifestyles. Second, we include only interventions such as infrastructure development where the main purpose is to influence health care demand. So, for example, a rural road would be included as an intervention if it is built mainly to increase access to a health facility but not if it is built as a general service for the community. In a similar vein, credit and savings schemes are included only if the main objective is to cover the cost of health care. Third, although the extent of risk-pooling is an important demand-side determinant of health care, we have chosen not to review insurance or prepayment schemes that are designed to cover the costs of medical treatment. Instead the discussion is limited to prepayment schemes that finance other demand-side costs. For more general

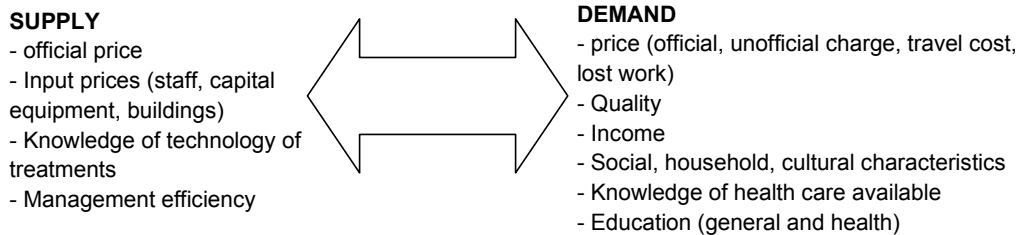
reviews of the community insurance financing literature see, for example, Bennett, Creese et al. 1998 and Atim 1998.

## THE FACTORS THAT INFLUENCE DEMAND

### THE ECONOMIC THEORY OF THE DEMAND FOR HEALTH CARE

Much of the economic theory of health care demand is based on the Grossman human capital approach to health (Grossman 1972; Grossman 2000). In this model the demand for health care is derived from the demand for health. Individuals produce health using a variety of different commodities, including exercise, education, nutrition, and lifestyle choices, as well as health care. These elements are analogous to the factors of production in the theory of the firm. The output, better health, can be viewed as both an investment good, through a stream of healthy days that permit market and nonmarket activities, and as a consumption good, in improved welfare or utility. Since the human capital approach was originally formulated, there have been a series of elaborations, for example, the incorporation of uncertainty into the demand function.

Figure 1. Supply and Demand for Health Care



The model leads to a demand for health care that can be written as (figure 1):

$$Q_d = D(P_m, QL, PS, Y, T, K, E, PH)$$

Where  $P_m$  is the price to the consumer of obtaining medical care. Price is a complex variable and includes, the direct price ( $P_{mu}$ ) and distance cost ( $P_{md}$ ), opportunity (time) cost of treatment ( $P_{mo}$ )—since treatment can be time consuming—and any informal payments made to the facility, for commodities or to staff ( $P_{mi}$ ).  $QL$  is quality of care,  $PS$  is a vector of prices of substitute care at other facilities (private clinics, drug stores, other hospitals),  $Y$  is summary variable for income of the individual or household,  $T$  represents social, household, cultural, and individual preferences,  $K$  is knowledge about the characteristics of, and need for, medical treatment and,  $E$  is education.

The function also includes a vector of prices for substitute commodities that affect health ( $PH$ ). This is because individuals have some scope for choosing healthy lifestyles, safer employment, or better nutrition to improve health or reduce the probability of ill health. This is a time-dependent variable since demand for health care today is likely to be influenced by lifestyle decisions made in the past.



In reality the measurement of health care itself, since it is such a heterogeneous commodity, is difficult to quantify (how do you add medicines to doctor visits to days in hospital?). Social scientists usually fall back either on measuring total spending on health care or utilize discrete choice utility models to proxy the decision to seek care at different facilities.

Supply of medical care is derived from its production function and is made up:

$$Q_s = S(P_{mu}, F_1 \dots F_n, T, M)$$

Where  $F_1 \dots F_n$  are the prices of inputs (production factors) required to “produce” treatment, such as staff time, capital equipment and buildings, consumables and land;  $T$  summarizes knowledge of the technology of treatment available and  $M$  describes management and staff efficiency. The latter variable relates both to the ability of the facility manager to use a given combination of resources effectively and also the incentives for other staff (e.g., size and method of paying providers).

Conventional economic theory assumes that an equilibrium quantity of medical care is supplied and demanded as a consequence of movements in the price of medical care ( $P_{mu}$ ). A further route of influence is provided by the principal-agent relationship, which is common in health care and some other markets suffering from asymmetric information. Consumers are often unable to make an informed decision regarding whether treatment is required and, if so, which therapies are most effective. An agent, often a doctor but it could also be a pharmacist (with or without pharmaceutical training), community worker, family member, or traditional healer, acts to advise the patient on treatment. In the model this effect acts through the variable  $K$  when practitioners influence knowledge of the need for treatment for a particular illness and options available. This represents the legitimate role of the agent in informing the patient. The role of the disinterested agent becomes compromised if the agent allows his advice to be influenced by self-regarding factors such as practitioner payments. It follows that the problem is most acute when agents also supply treatment and where reimbursement is directly related to the amount of treatment provided. The other main principal-agent problem is where the agent is insufficiently informed to provide appropriate advice.

The factors determining demand can be divided into two groups. First those that can be influenced by improving existing medical care services—improving quality, influencing referral patterns (access conditions), lowering price or waiting times. These factors are controlled largely by the overall level of (public) resources allocated to services and also local capacity to manage them efficiently. They are also influenced by factors such as factor market conditions: one area may have to pay more for drugs or staff than another to deliver similar quality. It is desirable, although it does not always happen, that public allocation formulas take account of such circumstances.

The second group is factors, other than direct investment and expenditure on services, that influence demand. Some, such as knowledge of health care need and information on

service providers have traditionally been seen as the concern of the health sector. Others, such as transport infrastructure, may be thought of as the concern of other sectors. A further group, such as family and cultural norms, may be thought to lie outside the remit of state intervention. All are important in determining access and utilization.

That “demand-side” factors are important, perhaps more important, than supply, is powerfully illustrated in one survey conducted in 1995 in Bangladesh (table 2) (Barkat, Helali et al. [1995] reported in Piet-Pelon, Rob et al. [1999]). The survey investigated the

**Table 2. Reasons for Not Seeking Care in Obstetric Emergencies in Bangladesh**

Issue		Percent
Education	Do not know about emergency problems	59.5
Financial	Financial costs are relatively high	45.5
Information	Do not know about the availability of specific service at the facility	39.3
Social/cultural	Required medicines not always available	38.2
Social/cultural	In-laws object	35.6
Social/cultural	Religion does not permit going outside of the house, especially during pregnancy	35.3
Social/cultural?	Shyness	32.3
Distance	Facility too far from home	28.3
SUPPLY	Doctor not available when needed	25.2
Distance	Poor communication facilities	17.8
Family	Husband objects	17.0
SUPPLY	Difficult to get admission	14.1
SUPPLY	Attitude of service providers to clients not very friendly	5.6

*Source:* Adapted from Barkat, Helali et al. (1995), issue added by author.

reasons women do not seek care in the case of obstetric emergencies. Many of the most common reasons can be regarded as demand-side reasons, including lack of knowledge about when to seek treatment, poor information about services, distance, and sociocultural reasons including attitudes of family members and religion. Few of the main reasons are concerned with the quality and availability of facilities themselves.

In this paper we are primarily concerned with the factors that influence demand. It is important to recognize, however, that many are interrelated. The method used to pay physicians may influence both the management efficiency of supply and the information provided to consumers on the types of treatment required.

The demand formulation defined earlier introduces each variable one at a time. There are also likely to be important interactions between variables, in particular an interaction between income/poverty and some of the other demand barriers such as distance and information. So, for example, a higher cost of travel will have a greater impact on the poor, whereas the effect of more information may only benefit (positive higher income

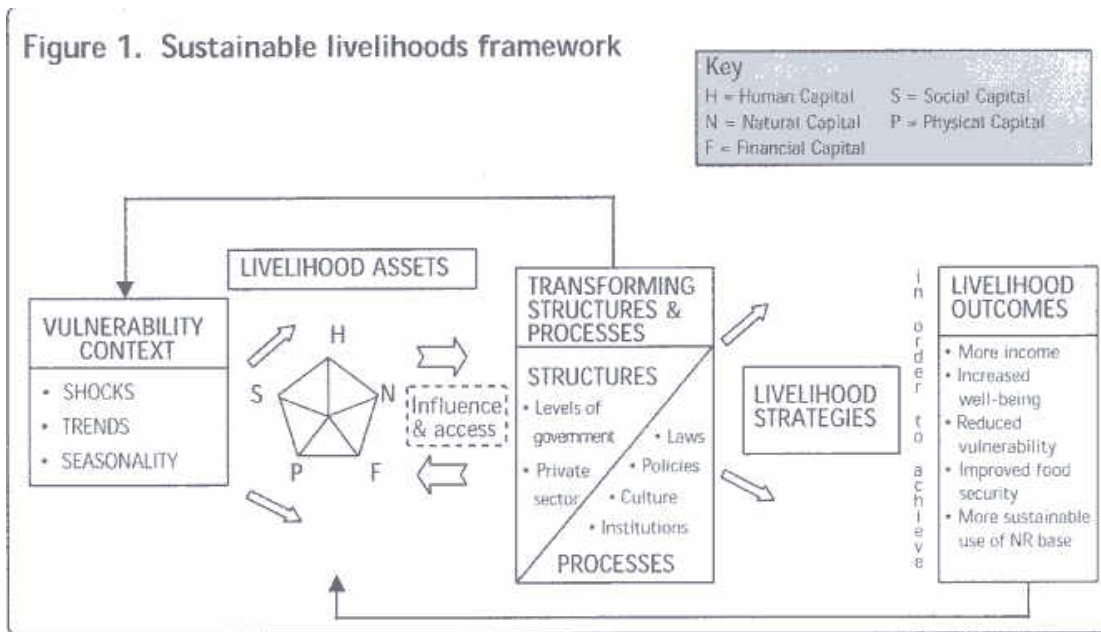
individuals who can use this information to pay for services. Econometrically this can be specified by including a compound term into the regression equation made up of the product of the two variables that are thought to interact.

### **THE LIVELIHOODS FRAMEWORK—A BROADER PERSPECTIVE**

While the Grossman model, and variants, provide important insights into the individual decision to seek medical care, it provides little analysis of broader social and institutional determinants. A broader perspective on the demand for health care is offered by the “livelihoods framework” (LF), which describes the interactions between individual assets, society structures and processes, and the overall vulnerability context (Chambers and Conway 1992). A central idea is that people living within a community embody five key assets—stocks that in turn contribute to a sustainable livelihood (figure 1). In this context the livelihood can be seen as the means of obtaining the desired capabilities. The assets described in the LF are:

- Financial—wealth and income
- Natural—rights to ownership, use, and disposal of land
- Human—health, knowledge, and intelligence
- Social—ability to participate in community decisionmaking and friendship networks
- Physical—entitlement, use, and ownership of productive and nonproductive assets.

The framework recognizes an overlap between holdings of these assets (DFID 2000). The secure ownership of land, for example, may well also ensure substantial access to financial capital. It is important to stress, however, that whether there is such overlap depends much on institutional processes. A person with substantial right to financial capital, for example, may not have right and therefore ability to convert this to natural capital if legal restrictions prevent him from owning land (e.g., excluding certain groups from land holding).



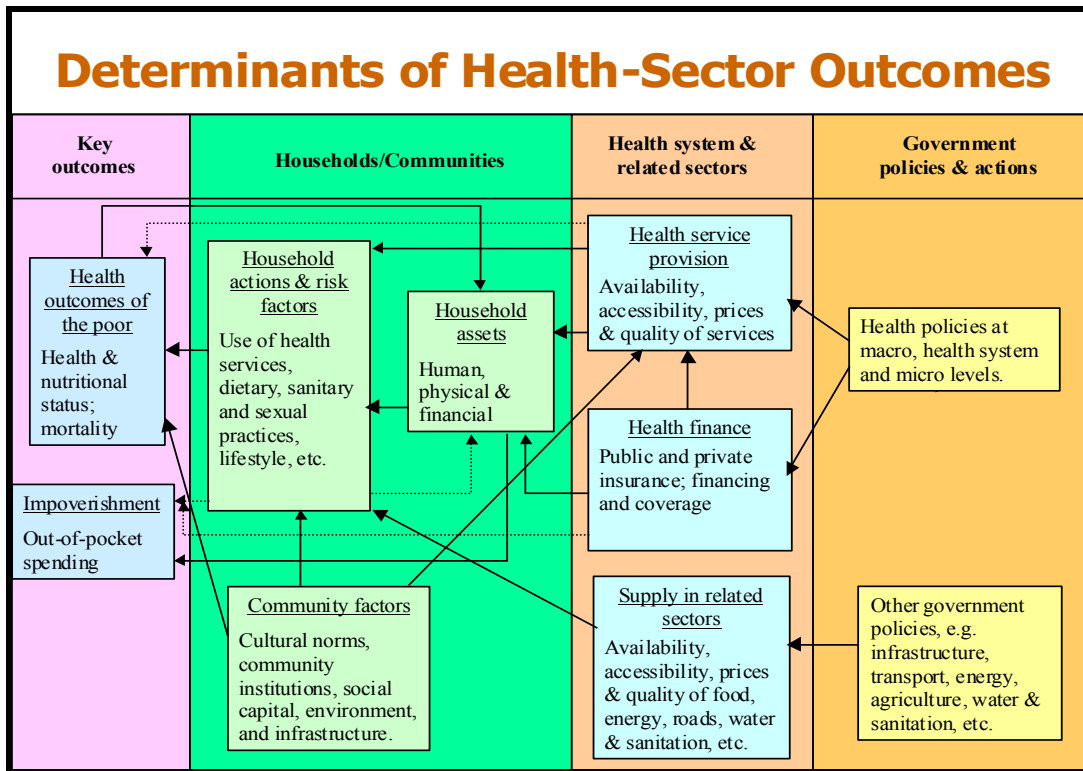
Source: from DFID 2000

This also implies that a straight conversion of all assets into a common currency (e.g., monetary) cannot properly summarize total holdings. Individuals often require holdings of each asset to generate a sustainable livelihood, but the amount of holding will vary between individuals and communities. Ownership of land may be important to someone living in a rural area in order to maintain a secure living; it can be less important to urban residents where opportunities for nonagricultural employment are plentiful.

Within society the structure of organizations and institutional processes is responsible for enhancing or depleting these assets. Faced with a given set of processes, individuals may be able to manage or utilize circumstances to improve their position. These interactions are set against a set of largely exogenous circumstances (the vulnerability context) such as macroeconomic growth (positive and negative), seasonality, and shocks such as natural disasters and changes in world trade relations. The analysis adds to, rather than supplementing, the demand for health by emphasizing the importance of external and institutional factors in determining access. Without recourse to legal or bureaucratic redress if something goes wrong, for example, a patient's access to quality care is impaired even if physical and financial access is maintained.

A similar framework has been developed by the World Bank (figure 2, Determinants of Health Sector Outcomes). This framework concentrates mainly on health and health-sector outcomes, in contrast to the LF's slightly broader perspective, which considers broader social and institutional determinants.

Figure 2: Determinants of Health Sector Outcomes



Source: World Bank (2002).

### WHY INTERVENE?

Before intervening in a market such as health care the reasons for intervention must be clear. Economic theory suggests that under certain circumstances a free market promotes the optimal outcome for consumers and providers. These assumptions include: symmetrical access to knowledge about market transactions and the properties of traded goods, vigorous competition between providers based on free entry into a market, a high level of factor mobility, and a complete market for all products. In health care, as well as in many other markets, it is possible to demonstrate that these circumstances do not always, if ever, apply. It is outside the scope of this paper to go into the full range of market imperfections that may be present in health care or other markets. These are dealt with extensively elsewhere (see, for example, Gaynor and Vogt 2000). The key arguments on the demand side appear to concern lack of reliable information, which may lead to inferior choices about whether, when, and where to present for treatment.

Information problems are of two types. First, consumers lack the human capital (education) to promote their own and their families' health. Lack of basic literacy is one example. This may impede an individual's ability to assimilate health messages, read advice on nutrition etc. Second, consumers lack information on the range of providers and treatments. Finally, there is a lack of specialist knowledge of specific medical conditions and methods of treatment. While the first two problems may be reduced through education or communication, the latter is usually overcome through an agent intermediary (principal-agent relationship) who can translate the felt need of patients into

an expressed demand for appropriate treatment. This leads to further problems since the principal-agent relationship is never a perfect one and may be distorted further by a conflict of incentives.

A second typical reason for intervening is to accommodate positive externalities. Some medical care has spillover benefits for other people. The classic example is vaccinations, which, in addition to the protection afforded the vaccinated, reduce the chances of others in the community contracting a disease. Vaccinations are typically offered at below-cost price, or even free, to encourage uptake of services. With respect to demand-side costs, this may include subsidies for transport or time off work. In the case of simpler services, such as vaccinations, it may also include bringing services closer to patients through community delivery of services.

A further issue is that while some treatment, particularly preventive care, can be programmed on a regular basis, much curative care is uncertain. This is a particularly serious issue in low- and middle-income countries where risk pooling and prepayment are low. Consequently, individuals and households often face large bills for treatment just at the time when their income is lowest. Large medical expenditure has been implicated as a major cause of poverty and leads directly to the next justification for intervention. The usual solution to this issue is to provide insurance, loans, or prepayment systems to spread the cost of care among individuals and across time. The main issue in low- and middle-income countries is that these markets often do not exist and so represent a market failure.

In addition to efficiency arguments, intervention may also be justified on the grounds of social equity. In low- and middle-income countries in particular, income transfers from rich to poor are difficult because of the low level of development, and often considerable corruption, of the tax-benefit system. As a consequence, in-kind transfer, particularly for basic needs such as health care, might be made to alleviate poverty and reduce inequality.

Caution in providing subsidies is desirable. Examples abound of subsidy programs for health and other basic needs that ultimately benefit the rich much more than the poor. This is exacerbated by the concentration in urban areas of health care facilities, particularly those providing sophisticated care. As a result, the opportunity costs of accessing services are higher for rural citizens who, in low- and middle-income countries, are usually poorer than their urban counterparts. This emphasizes the need for well-targeted programs that provide a genuine redistribution to areas, groups and individuals in need.

Another possible leakage is the result of supplier-induced demand. An intervention to increase utilization may quite possibly lead to excess demand—with significant inappropriate or ineffective treatment. Some evaluation studies place much emphasis on an increase in numbers of patients or use of service offered by the intervention (such as transport schemes). Probably because of measurement difficulties these studies are often less concerned with whether this demand is necessary. This is a concern to be aware of, although it is inevitable, as with any intervention or targeting system, that some

mistargeting or unnecessary utilization will result and should be allowed for in the design.

## **THE IMPACT OF DEMAND FACTORS ON ACCESS TO HEALTH AND HEALTH CARE: SELECTED EVIDENCE**

In this section we present selected empirical evidence on the importance of the main demand barriers: education and information, location and distance, intrahousehold preference, and sociocultural barriers. The objective is to illustrate each barrier with evidence drawn from a wide variety of different societies. Each section ends with a short paragraph describing the types of interventions that may be appropriate in overcoming each barrier.

### **EDUCATION AND SCHOOLING**

In the demand specification presented in the second section, we distinguished between the specific knowledge of health and health care and general education. The difference is that knowledge relates to specific information about the nature of a particular illness, treatment available, and facilities that can offer the treatment. This is specific knowledge that helps the patient make informed decisions about treatment in the case of a medical event or about care to prevent illness. In contrast the education variable relates to the individual's general schooling and education. It attempts to capture the types of general skills that help to make the individual more productive in promoting self-health. It includes basic skills such as literacy and numerical skills but may also encompass knowledge of physiological processes—and knowledge of institutions such as administrative and legal processes that give individuals control and confidence in utilizing information to improve their lifestyles and health status. This description suggests that knowledge is more amenable to manipulation by agents or misinterpretation by consumers.

Education is a long-established determinant of the demand for health and health care. It was incorporated as a determinant of the production function of health in the early Grossman human capital model of health (Grossman 1972; Grossman 2000). In that model better education allows an individual to be more effective in converting health care and other health-enhancing goods into health. A recent study, by the same author, of the empirical effects of schooling on health found it to be the most important correlate of good health (Grossman and Kaestner 1997). A study of low- and middle-income countries considered to have achieved above average social development relative to income emphasized the need for a high education base as a prerequisite for high returns from health sector investment (Mehrotra 2000).

Education of parents, particularly the mother, is also important in determining child health status. Maternal schooling, for example, was found to be the most important determinant of infant survival in a study in Pakistan (Agha 2000). Effects are wide reaching. Many studies report a positive effect of schooling on basic indicators of health such as infant, child, and maternal mortality. Yet there is also some evidence, from a study undertaken in Jamaica, that better education can reduce the probability of reporting

chronic diseases (Handa 1998). This could imply either a positive effect of education on lifestyles and the chances of getting chronic disease or improvements in the ability to manage such diseases.

Education theoretically has an ambiguous impact on the demand for health care. The marginal productivity of health care is enhanced, which means that less medical intervention is required for a given level of health. At the same time better schooling or education may raise understanding, and appreciation of the benefits of health care, and hence demand for it. These effects are linked, particularly for primary education. Basic literacy, for example, enables students to read and understand health messages (e.g., antismoking) and also information on the appropriate use of health facilities.

The overall impact of education probably varies according to the type of health care. Better schooling might be expected to increase knowledge about effective self-treatment such as use of homemade oral rehydration solutions. It may also reduce the use of unnecessary treatments such as excess use of antibiotics and increase the use of contraceptives. Here the impact is confounded and exaggerated by the effect of schooling on income, particularly among females, where demand for children falls as women obtain employment.

One study distinguishes between three possible effects of education on maternal health: (1) formal education that teaches health knowledge to future mothers; (2) literacy and numeracy skills that assist future mothers in the diagnosis and treatment of child health problems; and (3) exposure to modern society that makes women more receptive to modern medical treatment (Glewwe 1997). The first two have ambiguous, while the third has a positive, effect on the demand for health care. Maternal education has been found to be one of the most important determinants of utilization of services (Cleland and Van Ginneken 1988). Although emphasis is often placed on primary education, one study in Thailand found that it was secondary education that led to increased use of delivery assistance (Raghupathy 1996).

Though less relevant for more sophisticated health care, the feedback effects between health and schooling are important. A number of analyses, summarized in Gomes-Neto, Hanushek et al. (1997), have indicated the importance of adequate nutrition and good basic child health for educational attainment. The same study suggests, for a rural population in North-East Brazil, that improved health status reduces the probability of dropping out and increases grade achievements.

Though important, the complexity of education messages may mean that they are misinterpreted. One study, examining the reasons for choosing delivery sites in Uganda, suggests that the message given to a woman during antenatal care that there are “no problems” is often interpreted as a sign that the delivery itself will be normal and that therefore attendance at a facility is not required (Amooti-Kaguna and Nuwaha 2000).



## Information and Communication

Education may provide consumers with a basis for evaluating whether they or a dependent require treatment inside or outside the home. Information on the best places to seek care is also required if the consumer is to make an informed decision. Not all public or private hospitals are the same. Evaluating and making the best use of information on good and bad health sector providers requires some measure of sophistication in the target group. League tables of the best providers inevitably depend on assumptions that must be properly understood if they are to be used wisely. Ranking systems such as the U.K. hospital league tables were much criticized in the early days for concentrating on waiting times and omitting data on (arguably) more important dimensions such as successfully treated patients.<sup>3</sup> Recently, the U.K. government has begun publishing information on procedure-specific death rates. Yet even these are criticized for penalizing facilities that choose to treat patients that have a poor initial prognosis.

The need for medicines appears to be a major source of misinformation about health care. Excessive prescribing of medicines has become a common place in descriptions of health care utilization in most countries. While overprescription is sometimes supplier induced, particularly where the prescribing and dispensing function are not separate, it is also demanded by consumers. One study in Uganda suggested, for example, that one reason women do not attend for antenatal care is that, because they are not routinely given medicines, the consultation is perceived as worthless (Ndyomugenyi, Neema et al. 1998).

Another aspect of the impact of communication messages concerns the role of the communicator or key user of services. It is well established that health educators who are seen to obey their own health messages are more likely to have impact (antismoking messages are a good example of this). Some research indicates that use of particular services by local leaders has a positive impact on the general uptake in the population. Evidence in Uganda, for example, suggests attendance at polio eradication days was influenced by the attendance or absence of local leaders (Nuwaha, Mulindwa et al. 2000).

The impression of the consumer as a passive actor in an asymmetric market has been challenged by recent work on the implied reasons for seeking care in Tanzania (Leonard, Mliga et al. 2001). The authors found that patients' complex decisions about where to go appeared to be determined by the nature of the illness and an evaluation of the relative performance of competing facilities in providing effective treatment. Patients' perceptions of quality appeared to accord well with expert independent evaluation of protocols used to treat different illnesses. The study suggests that while patients may be largely unable to influence treatment, and unwilling to challenge treatment once they are at a facility, they do exercise considerable judgment in the choice of facility. The determinants of this choice are largely unknown but likely to include experience of past visits and knowledge provided by friends and relatives.

<sup>3</sup> Statistics on hospital trusts are available online at [http://www.doh.gov.uk/nhsperformanceindicators/hlpi2000/arealist\\_t.html](http://www.doh.gov.uk/nhsperformanceindicators/hlpi2000/arealist_t.html)

The concept of the “active patient” proposed in Leonard’s work emphasizes the complexity of choices that a patient must make to obtain care. The notion does not undermine the necessity of providing information and educating patients about the best ways to cope with illness. It does, however, offer a more optimistic view on patients’ ability to assimilate such information and use it to seek appropriate care. Such a finding raises several further questions.

First, are the short- and long-run transaction costs of providing information greater or less than other more direct ways of targeting services such as investment in better services close to the patient or selective subsidies for transport to certain facilities? Perhaps most likely are interaction effects where the ability to use information is influenced by financial and physical access to, for example, effective transport.

Second, but related to the first point, is the ability to utilize information in care seeking different for the poor and for the nonpoor? A household’s low economic status, as well as the sick individual’s position within the household, seems likely to hamper the ability to use good information.

### **Potential Interventions**

Interventions to improve women’s educational attainments are potentially wide reaching and mostly outside the traditional scope of the health sector. Apart from improving the general standard of, and access to, education, targeting schemes for raising female enrolments may include financial and nonfinancial incentives to families, scholarship schemes, and the promotion of all-girl schools (to overcome cultural constraints that prevent girls from mixing with boys). One example is a scheme introduced in rural areas of Bangladesh at the end of the 1990s to finance a family’s first girl child through school.

More specific health sector interventions are likely to focus on health education and information campaigns. Providing information on the types of diseases that can be self-medicated and those that require medical information may raise the demand for care. It is likely, and evidenced by the interventions discussed in the next section, that these will often have to be accompanied by ways of getting patients to health services.

Providing information to patients on good and bad providers might be accomplished in a number of ways, including media messages and official quality marks given to high performing facilities. Discrimination on the part of consumers is required in evaluating the sometimes-conflicting reports of official statistics, newspaper articles and reports from civil society organizations.

### **COSTS OF CARE**

Consumption of health care is often time consuming and dependent on the presence of the “consumer” during treatment. As a result, the overall price to the consumer is a complex variable. The main dimensions are: official user fee, unofficial charge, cost of time spent waiting for care, cost of time spent consuming care, and distance cost of reaching the facility. Some of these aspects are interrelated. One effect of reducing the

official user price is that unmet demand may increase as more people attempt to obtain treatment and are forced to wait longer or pay unofficially for services. We are not primarily concerned with the official or unofficial cost of services at the health facility, though important. On the other hand, a number of studies allude to the importance of getting supply right—both price and quality—before demand-side interventions can be expected to work.

### User charges

The widespread imposition of user charges in many low- and middle-income countries resembles, for many, an important barrier to utilizing services. User charges are often justified on the grounds that there is little purpose in providing a free point-of-delivery service if the quality is poor and availability low. Limited user charges, combined with targeted exemptions for the poor, have been seen as a way of improving the local revenue base, thereby increasing the availability of services. A further justification is that, since many people already pay unofficial charges, a replacement system of formalized charges should place no greater burden on patients but would make the system more transparent, thereby helping ensure that revenue benefits facilities instead of only a small group of health service professionals.

Along the above lines a recent study emphasized a series of prerequisites for the successful (equitable and efficient) implementation of charges (Newbrander, Collins et al. 2000). These include: a transparent and affordable fee schedule, retention of revenue by facilities to enable quality improvements and a well-designed and operational exemption policy. To this we might add the need to ensure that a formal system of charges replaces—not supplements—the unofficial payment system

In practice these requirements are often not met. Evidence is widespread, for example, that exemption mechanisms frequently fail to identify and protect the most vulnerable. As a result, user fees can lead to delays in care seeking, reduction in attendance at facilities, particularly among the poor, and impoverishment of marginalized families (Gilson 1997; Mbuga, Bloom et al. 1995).

The malign effects of user charges have led South Africa, Uganda, and a number of other countries to abolish charges for all or some services. Some early evidence suggests that this has led to an increase in utilization (Wilkinson, Gouws et al. 2001). There is also evidence, for example in Niger, that where user charges are retained by facilities to improve the quality of care, the impact on service utilization can be positive, even among poorer households (Chawla and Ellis 2000).

The literature on the impact of user charges is voluminous and well reviewed elsewhere (e.g., Wood 1997; Newbrander, Collins et al. 2000; McPake 1993; Shaw and Ainsworth 1996). User charges influence both supply and demand since they operate at the nexus of the health care facility or practitioner and the consumer to ration services. They are as much associated with encouraging the supply of quality services as they are an influence on demand. Despite the importance of user charges, further exploration of their impact here would distract from the central intention of this study, focus on barriers to service

use outside the facility or prior to obtaining treatment. Readers requiring more information on the impact of charges are referred to one of the main reviews of the literature listed above.

### **Location**

Location of health workers and facilities is another important dimension of the cost of care. A study in Burkina Faso, for example, suggested that transport costs accounted for 28 percent of the total costs of using hospital services (Sauerborn, Ibrango et al. 1994). A recent delivery survey in Bangladesh found travel costs were the second most expensive item (after medicines) in outpatient treatment (CIETcanada 2000). According to one review of postnatal deaths in North-East Brazil, in an estimated 25 percent of cases, mothers reported that delays in transportation may have contributed to the death (Souza, Peterson et al. 2000). Distance as a barrier is not confined to low- and middle-income countries. A recent study of patients in Great Britain presenting for colorectal screening found that more than 27 percent of the total cost of the procedure was accounted for in travel costs (Frew, Wolstenholme et al. 1999). The same study suggested that this cost fell disproportionately on poorer households

Many studies reveal the unsurprising fact that household use of services tends to decline with distance. This is a key reason urban citizens, who are often also wealthier, use services more than their rural counterparts. Lower rural access, reported in many studies, may well be the impact of an interaction between longer distances and less knowledge of treatment. This is suggested in a recent study in Kazakhstan, although the link is not fully understood (Thompson, Miller et al., forthcoming). This result is a key driver behind the oft-quoted finding of benefits-incidence studies that rich, urban citizens benefit more from public subsidies than do poor, rural citizens (for a summary of some recent evidence see Demery 2000).

Location is a particularly critical factor in the uptake of obstetric, and especially delivery, services. Access for emergency deliveries is clearly hampered by long distances. One study, in Zimbabwe, suggested that up to 50 percent of maternal deaths from hemorrhage could be attributed to the absence of emergency transport (Fawcus, Mbizvo et al. 1996). Yet, at the same time, distance is also cited as a reason women choose to deliver at home rather than at a health facility (see for Philippines (Schwartz, Akin et al. 1993), Uganda (Amooti-Kaguna and Nuwaha 2000) and Thailand (Raghupathy 1996)). In other words, women living farther away are less likely to choose a health facility for delivery, although their inferior access makes them the most vulnerable group in case of an emergency.

A parallel issue in industrial countries is the effect of distance on care following myocardial infarction (Piette and Moos 1996). According to one U.S. study, patients living more than 20 miles away from a hospital are much less likely to visit ambulatory services for follow up. The death rate in the first year is also much higher for this group although the relationship with treatment may not be causal. In Japan one study found that access to follow-up treatment following treatment for cerebrovascular disease was considerably influenced by access to suitable transportation (Tamiya, Araki et al. 1996).

The impact of location is not limited to whether people present for treatment but also how long they wait before seeking treatment. According to a study in Vietnam, location was the main determinant of the delay between onset of illness and presenting for treatment (Ensor and San 1996). Other factors such as price and income were the principal determinants of the type of facility visited—health center, hospital, private practitioner, or drug-store.

The impact of distance is not ambiguously negative. Some studies have found that people will travel long distances to obtain treatment. In Uganda the poor were more likely than the better-off to spend time traveling to facilities where the quality was higher, possibly because the opportunity cost of their time (wages forgone) was lower (Akin and Hutchinson 1999). In one study in Cameroon and another in India, where the better services were situated farther away from much of the population, quality of care appeared to increase utilization despite the costs of travel (Tembon 1996; Ganatra and Hirve 1994).

An important result of the India study was that although the effect of distance on use of public facilities for childhood respiratory illness was positive or insignificant, the impact of distance to the nearest private facility on use of public facilities was unambiguously positive (Ganatra and Hirve 1994). In other words, if a private facility is close by, a household prefers it to a public facility. The result is particularly important given the “essential and primary” nature of the disease studied, for which government facilities might be expected to have a comparative advantage. Similar interactions are found in Kerala for general use of private facilities (Shenoy, Shenoy et al. 1997). One study in India found that women would travel long distances to obtain private care, perceived to offer better quality than public services (Bhatia 2001).

People residing close to cities are often willing to bypass local facilities, traveling to higher level facilities in urban areas which are perceived as better quality. This result, found in a number of countries including Bangladesh (Ensor, Hossain et al. 2001), Burkina Faso (Develay, Sauerborn et al. 1996), suggests that arbitrary subsidies for transport are likely to be counterproductive in promoting bypass of basic facilities. It also suggests that, unless health facilities are seen to provide good quality services, people will continue to avoid them even if transport is financed.

### **Opportunity costs**

Consuming health care can be time intensive. Both patients and relatives may have to give up long periods of work (or leisure) to receive treatment. This represents an important cost to individuals, particularly during peak periods of economic activity such as harvest time. Economic evaluations increasingly attempt to include the opportunity or indirect costs of obtaining treatment or living with disease in recognition that lost wages, of either patients or other family members, represent a major part of the cost of medical illness and treatment. One study on malaria, for example, found that 68 percent of the cost of illness was accounted for in the indirect cost in lost wages of the patient or family members (Attanayake, Fox-Rushby et al. 2000). Conversely, obtaining treatment also implies indirect costs. A recent study in Australia, for example, found that attendance at

specialist surgical services by patients from rural areas cost more than Aus\$1,000, more than 60 percent of it from lost income during treatment (Rankin, Hughes-Anderson et al. 2001).

In some cases nonworking patients with lower opportunity costs may be more likely to use services. A recent study in Pakistan, for example, found that compliance is more easily improved for people who are not economically active since they are more likely to have time to go for treatment (Khan, Walley et al. 2002). This finding must, however, be balanced by the other effect of lower income that is often a consequence of lower opportunity costs.

The opening hours of public services often inflate the opportunity cost of treatment. A study in Vietnam, for example, found that the fact that commune health centers only opened during the day, and the rate of home visits was low, was an important barrier to use of services by the poor (Segall, Tipping et al. 2000). Similar constraints are reported in accessing immunization services in rural Ghana (Bosu, Ahelegbe et al. 1997).

### **Potential interventions**

A number of potential interventions are suggested to mitigate the cost barriers arising from lost work time and distance. One way is to provide finance, either at a central or local level, to cover the costs of transport and opportunity costs of taking time off from work. Community insurance schemes, coupons and vouchers, and facility funds for cost reimbursements are possible mechanisms. One alternative is to provide subsidized transport services to get patients to hospital, and another, on a more ambitious scale, is the building, or repairing, of local roads and bridges to help people get to clinics and hospitals. An important consideration here is the extent to which a health ministry or local health administration would be permitted to spend public money on services outside the usual remit of the health sector. Such schemes may require a wider collaboration with other sector ministries.

In some cases it may be possible to bring services closer to the community, especially services that are not dependent on large capital equipment. Workers can transport services using mobile clinics and community health workers. Services such as health promotion, family planning, and some child health services are obvious candidates. Another possibility is reorganizing the mode of delivery to reduce the number of visits required to a health facility for treatment. A good example is community monitoring of directly observed therapy short course treatment (DOT's) treatment for tuberculosis.

### **INTRAHOUSEHOLD PREFERENCE**

An assumption made by much analysis, and implicit in policy, is that households are unitary entities where improving the household's welfare means improving welfare for all of its members. This assumption leads to policy implications such as that targeting poor households is sufficient when targeting the vulnerable. Theoretical and empirical work has challenged this assumption, suggesting instead that households should be seen as collective entities where income is not automatically pooled and allocations depend upon bargaining power. A recent study found that investment in children, through health

and education spending, is often greater for boys (Quisumbing and Maluccio 1999). Similar results are found for Bangladesh, South Africa, and Ethiopia. Further, where women control household assets, social spending within the households often accounts for a greater proportion of total spending than when men control income.

That households cannot be treated as homogenous units has long been recognized by social policymakers in Western Europe. The child allowance in the United Kingdom has always been paid, by default, to the mother on the grounds that she is more likely to spend it on the needs of children (rather than on beer!). In the health sector this is also suggested by evidence that when user charges are paid, men use services more than do women. This difference is particularly stark after subtracting from total usage reproductive health care, “used” mainly by women but benefiting men and women more or less equally. Amartya Sen (1987) provides extensive evidence on the unequal treatment of young girls in India, recording lower nutritional status, inferior access to health care, and worse health outcomes than boys of similar families.

From the extensive intercountry database provided through the “Voices of the Poor” study conducted by the World Bank, there is general agreement that men are invariably given preference over women in access to health care (Narayan, Patel et al. 1999). A recent study in Bangladesh, for example, found that men benefit more than 17 percent more than women from public spending on nonreproductive health care (Begum, Ensor et al. 2001). Similar results are also found for Côte d’Ivoire (Gertler and van der Gaag 1990) and in India for girls living in the Punjab (Booth and Verma 1992) and Maharashtra (Ganatra and Hirve 1994). The latter found that male referral rate, which is strongly influenced by parents, was 2.5 times the female rate while expenditure per visit was more than 50 percent higher for boys. The opposite result is found for Peru (Gertler and van der Gaag 1990). In general women are expected to subordinate their own needs to the needs of their kin both in continuing with household duties and in determining priorities for resources for health care.

Education often appears to modify the gender bias in use of services. According to one study in Haryana, an evident preference toward boys in utilization of facilities was reduced significantly among more highly educated heads of households (Rajeshwari 1996).

Two important factors influencing the effectiveness of the female voice in household decisionmaking are the extent to which female members are educated and contribute to household income. Quisumbing and Maluccio (1999) find that the difference in education between male and female members is crucial in determining influence. In a survey in Senegal researchers found that, in more than half the cases, the husband or other senior family member made more than half the decisions on care seeking for women (quoted in Post 1997). A spokesperson for one Bangladeshi NGO reinforced this point:

One (women’s) group shared with me that a major change for their group members was that they were now included in family discussions, because they were literate and earning money. If a woman has no voice in the family, it doesn’t

matter whether she knows she needs medical care or not, the decision will be made by her parents-in law and/or her husband.<sup>4</sup>.

Increasing demand is thus far more complex than simply the provision of health education advice or information but is strongly related to the relative position and education of family members. As suggested by one Indian study, when women cannot contribute through superior education or through income earning, their position is maintained through household chores (Ramasubban and Rishyasringa 2000). The completion of these duties may militate against their receiving care in the event of illness.

A slightly different view is proposed in the suggestion that women may perpetuate the ignorance of their male partners in order to regain power in an unequal relationship. This in turn may lead men to make uninformed decisions about family health (Piet-Pelon, Rob et al. 1999).

In a number of South Asian societies the mother-in-law dominates decisions on child-birth and care related to pregnancy, particularly in the early stages of marriage. In these circumstances, whether a woman is delivered at home by a family member, by a traditional birth attendant (TBA), or at a health facility, much depends on the beliefs of the mother-in-law (Piet-Pelon, Rob et al. 1999). At the community level the TBA is also vital in influencing demand. One study in Rajasthan found that more than 90 percent of women that did not obtain referral care were advised against it by the TBA (Hitesh 1996).

### **Potential Interventions**

There is a strong overlap in the development of interventions to overcome barriers relating to education, information, and even distance. Improved opportunities for the education of women and girls may improve their status within the household and community as well as make them better informed consumers of care. Similarly, education may give greater access to opportunity for employment through microcredit and women's cooperatives. Yet social attitudes do not alter quickly, and short-term improvements in service utilization seem more likely to result from providing services closer to women's homes and health education for husbands (and mothers-in-law). There may also be a role for providing financial compensation to mitigate the household costs of sending women and girls for treatment although doing so may tacitly accept the discriminatory practice.

### **CULTURAL FACTORS**

Many cultural, religious, or social factors may impede the demand for health care. In communities where women are not expected to mix freely, particularly with men, utilization of health services from static facilities may be impeded. In some communities in Bangladesh, the restrictions of purdah may prevent mothers from accessing medical treatment for themselves or their children (Rashid, Hadi et al. 2001). The presence of male practitioners for obstetric and gynecological care has been shown to be an important

<sup>4</sup> Dr C. Marsden for Food for the Hungry (FHI), Bangladesh.



reason for low use of these services by Asian women in Western societies (Whiteford and Szelag 2000). It is suggested that in the United Kingdom the clustering of patients of the same ethnic origin in practices staffed by people with the same language and cultural background is one reason for the high registration and consultation rates with general practitioners in many predominantly South Asian communities (evidence cited in Goddard and Smith 1998).

Cultural conventions on modesty are also important. The restrictions imposed on women by Purdah may themselves mean that the impact of travel time on utilization is much more important for women than for men. One study in India, for example, found that travel and time costs had a much greater negative impact on female access to services than the direct user charges (Vissandjee, Barlow et al. 1997). In Guatemala rural women were put off attending a hospital for obstetric care because they were required to remove their skirts in public and without proper regard to patient privacy (Anon 1997).

Cultural and family opinion is particularly important in the demand for contraceptives and wider family planning advice. A study in Pakistan, for example, found that resistance by a husband and cultural unacceptability of contraception were more important determinants than fears of further pregnancy and knowledge of methods (Casterline, Sathar et al. 2001).

Wide differences in social status between practitioner and patient may also inhibit utilization. This may be through feelings of inferiority or simply an inability to communicate properly. This is demonstrated in a range of societies from the use of midwives in Benin to the treatment of low-caste Makkovar women by higher caste doctors in Tamil Nadu (Whiteford and Szelag 2000; Ram 1994).

Cultural conventions about proper treatment of health issues may also inhibit access. One paper reports that the women of the Alur people of Uganda may be thought weak if they receive help during delivery (Ndyomugenyi, Neema et al. 1998). A similar finding is reported for the Bariba tribe in Benin (Sargent 1985). There is also evidence that women often accept illness with genito-urinary symptoms as part of life and may be embarrassed to seek medical care (Bhatia 2001). Another study, in Bolivia, found that women were put off by well-ventilated delivery rooms when their own understanding required warm conditions for the delivery to progress (Anon 1997).

### **Potential interventions**

Interventions bear some similarity to those suggested for overcoming intrahousehold barriers. They may include education of community and other opinion leaders on the need for women (and men) to use health services in certain circumstances. They could also include same-gender and -culture health workers and community-based distribution of services.

Schemes to empower women may also be helpful in breaking down historical barriers to seeking care. In addition, broader schemes to empower communities and give the poor and other subcommunities a voice in service delivery may help mobilize use of services.

Services that are sensitive to prevailing cultural conventions, without compromising medical standards, may also have an impact on the demand for services.

### **ARE BARRIERS GREATER FOR THE POOR?**

As indicated in the first section, it is intuitively plausible that some demand barriers will be more important for the poor than the rich. This is likely to be the case where the barriers are financial, as seen from some analyses of the impact of formal user charges. Gertler and van der Gaag (1997) found higher price elasticities for the poorest than for the richest income quintile in both Côte d'Ivoire and Peru. Although they did not investigate the differential impact of distance, opportunity, or information costs on households, it is likely that a differential impact would also hold.

Few of the studies investigate differences in the impact of demand barriers on different economic groups, although a number include income or socioeconomic status as a determinant of health-seeking behavior. In most cases income has a positive impact on use of services. For example, income is reported to increase the likelihood of health service use in countries such as Burkina Faso (Develay, Sauerborn et al. 1996) and Thailand (Raghupathy 1996). Income also has a positive impact on attendance at immunization clinics in Ghana (Bosu, Ahelegbe et al. 1997). Most of these studies, however, do not make clear precisely why income has an impact on demand.

In some cases an income effect can be reasonably attributed to certain price barriers. For example, in the United Kingdom, there is some evidence that lower income groups use general practitioners and outpatient services as much and possibly more than other income groups (Goddard and Smith 1998). This has been attributed to lower opportunity costs of some lower income groups (e.g., elderly, unemployed). The study in Sri Lanka by Akin and Hutchinson (1999) also finds that lower opportunity costs may explain why the poor are often willing to travel long distances for good quality services. Yet even here these reasons are established from theory and intuition rather than positive empirical analysis

In general most specifications do not include interaction variables between demand-side barriers and income. As a consequence, most results indicate the specific contribution of economic status on demand for services rather than indicating whether barrier-elasticities differ by economic status.

Some of the studies offer qualitative evidence that barriers are more important. One study in Vietnam, for example, finds that poorer households often have less access to quick and effective transportation (such as a bicycle) in the event of illness (Segall, Tipping et al. 2000). Another study found that financial circumstances made it more difficult for women in remote areas to reach clinics in the event of obstetric emergency (Souza, Peterson et al. 2000).

The evidence certainly provides some support for the intuitive hypothesis that barriers are more important for the poor. There is, however, a dearth of evidence that quantifies these

barriers. In addition, in some cases lower opportunity costs among low-income groups may sometimes mean that barriers are greater for the nonpoor.

### DEVELOPING INTERVENTIONS

Interventions to correct each of these demand-side barriers can be divided into two main groups. Providing education and information to individuals, households, and communities is a way of dealing with the information gaps that lead to inadequate demand and so to market failure. Developing insurance or loans to spread demand-side costs is a way of addressing the market failure of inadequate capital and insurance markets—a problem commonplace in low- and middle-income countries.

Reducing demand-side costs to individuals can also be a way of mitigating information market failures and stimulating demand (table 3). At the same time, selective cost reduction can be viewed as a way of addressing equity concerns through a subsidy-based reallocation of resources. The difference between subsidies is that while the former strategy would target those with inadequate information, the latter depends on targeting subsidies at the poor and other socially disadvantaged groups.

**Table 3. Types of Intervention to Correct Demand Barriers**

<i>Demand barrier</i>	<i>Information imperfections</i>	<i>Increase ability to pay</i>	<b><u>Supply side</u></b>
<b>Lack of knowledge</b>			
<ul style="list-style-type: none"> <li>• Education</li> </ul>	Rectify knowledge gaps	Stimulate demand through general cost reduction.	
<ul style="list-style-type: none"> <li>• Information</li> <li>• Culture</li> </ul>	Educate communities and households.		Culturally sensitive health care delivery
<b>Uncertainty</b>		Develop insurance, loans and prepayment schemes to finance costs.	
<b>Equity</b>			
<ul style="list-style-type: none"> <li>• Distance costs</li> </ul>		Reallocate resources through targeted subsidies for the poor.	Bring services to communities, more flexible opening.
<ul style="list-style-type: none"> <li>• Opportunity costs</li> </ul>		Patient payments, loan funds	
<ul style="list-style-type: none"> <li>• Intrahousehold</li> </ul>		Targeted subsidies	

Addressing the unequal household allocation of resources and the constraints imposed by culture or religion is partly an issue of equity (social justice) and partly information (ignorance). To some extent, cultural and household norms are derived from a mistaken perception of the health care needs of certain members of the community. Education and

information may help change perceptions and stimulate demand. Where access remains impaired, and education in any case often takes a long time to have impact, the issue becomes one of equity. In this case, the vulnerable, with impaired access to community or household resources, are helped to access services through targeted subsidies and culturally sensitive health service delivery.

In judging the impact of interventions, it is important to examine a number of dimensions. One is the effectiveness of the intervention on constrained behavior—does the intervention work? A second dimension is whether the intervention can be judged cost-effective and financially sustainable. A review of barriers in the last section illustrates some potential interventions that appear to be low in cost. Reducing cultural barriers by, for example, improving patient privacy or delivery room ventilation. Conversely, a proposal to offer trained home attendance for every delivery to circumvent purdah restrictions is unlikely to be affordable in many communities.

Although cost-effectiveness and financial sustainability overlap, they are not equivalent. An intervention may be economically beneficial in that the valuation of benefits is greater than the costs—through reduced community and health system costs and enhanced health. It is still necessary to identify resources from the government, community or individuals to finance the service.

Next we look at the extent to which some of the interventions described in this section have been used and evaluated in practice.

## **LITERATURE ON INTERVENTIONS**

In this section we review the available literature on the impact of demand-side interventions. An extensive review of potential demand-side interventions was carried out. This reflects the complexity of the subject and diversity of potential material. The main sources included:

- Structured search of Medline, Econlit and Sociological abstracts
- Structured search of Web of Science, BIDS, and Ingenta database
- World Bank research and project databases and general search engine
- Search of World Health Organization (WHO), Asian Development Bank (ADB), and Pan American Health Organization (PAHO) websites
- Civil Society Organizations including CARE, Christian Aid, Oxfam, Population Council, ICDDR,B
- Correspondence with key researchers, NGOs, and former participants of York international health economics course
- Key literature reviews in similar areas. In particular one review on overcoming health system constraints at the peripheral level (Oliveira Cruz, Hanson et al. 2001), another evaluating the experience of community-based delivery of contraceptives in Africa (Phillips, Greene et al. 1999) and an annotated bibliography of the Indian literature on health care access, utilization, and expenditure (CHEHAT 2001).

More details on the search strategies used are provided in Appendix A.

One of the most striking aspects of the literature search was that, while a great deal of material was found on barriers to health care access, far less was found on means of overcoming these barriers. A number of interlocutors expressed surprise at the lack of information available in this area, considering the importance of the barriers to obtaining health care. The review highlights the paucity of information available in this area. A few respondents referred to projects that incorporated such interventions but where information is not yet in the public domain.

Tracing the impact of interventions is fraught with difficulties. Of particular importance are problems associated with:

- Causation—was the change caused by the policy intervention?
- Confounding factors—what other factors may have influenced the variable under examination to exacerbate or reduce the effects of the intervention?

These problems mean that design issues are important, although factors leading to a design are often difficult to influence. The issue of causation may be addressed by proposing a suitable theory to explain why an intervention would have impact, perhaps supported by evidence that it was indeed what caused people to change behavior. The issue of confounders can be addressed in several ways. One is to match the area under observation with a similar area that does not receive the intervention. Provided that other similar changes occur, the difference in the observed variable between areas may plausibly be attributed to the policy intervention. This conclusion may be modified where joint effects occur so that when the intervention interacts with some other change in the intervention area it produces the overall impact. So, for example, improving transport in one area may have an enhanced effect if at the same time the quality of facilities improves. While the quality improvement may occur in both intervention and control area, it may only have significant impact where the transport is developed.

More sophisticated analysis of change may be undertaken with the use of multivariate statistical and econometric analysis. Such analysis, under certain conditions, can correct confounding factors and isolate the effect of the intervention. The caveat concerning causation still applies. In addition, the assumptions under which the analysis is performed must be tested using appropriate statistical tests. A further disadvantage is that the data requirements are quite stringent, requiring a substantial and complete dataset on all variables under consideration either on a cross-sectional or time-series basis.

Most of the interventions discussed in this section are small scale, usually limited to a district or group of villages and communes. None of the interventions used multivariate techniques. This contrasts starkly with the evidence on barriers to entry, which are usually large scale and depend heavily on multivariate analysis. Most of the studies reported do not make use of matched controls in inferring policy impact. As a consequence, while the changes in observed admission and access are sometimes

impressive, it is difficult to be certain that the change occurred *as a consequence of the intervention alone*.

A further problem with intervention studies of this type is the hazard of selection bias. It is difficult to select communities randomly for the intervention. Indeed, one of the criteria may be a “willingness to change” with the intervention actively seeking communities not considered average. Some donors may even require such a criterion so that they do not waste their money. Since the difference between a community willing to change and the average is difficult to quantify, it makes generalization of the results difficult, if not impossible.

Barriers to demand are often interlinked. Evidence described in the last section suggested, for example, that cultural restrictions and travel time may combine to restrict female access to service. We have grouped studies into three main categories: obstetrics, family planning, and other care. This reflects the preponderance of studies in the first two areas. Experiments frequently include a range of interventions, often making it difficult to divide them up according to barrier. A list of intervention studies reviewed is included in Appendix B. This includes only actual interventions, thus ignoring the many papers that suggest interventions but do not test their impact.

### **OBSTETRIC CARE**

Care for women during pregnancy and delivery turned out to be one area where interventions to reduce barriers have been most systematically tested. The three-delays model—delays in the decision to seek care, in getting to a health facility, and in obtaining appropriate care once at a facility—is well established in the literature on maternal deaths (Maine 1997). Approaches to health sector reform increasingly recognize these delays in their design. In Bangladesh, for example, the original strategy document for the current Sector Wide Approach (SWAp) highlighted the three delays as integral in attempts to lower maternal mortality (GOB 1998).

Much of the evidence on interventions comes from the Prevention of Maternal Mortality (PMM) research program in selected African countries. This began in 1987, supported by researchers from the School of Public Health, Columbia University. In 1996 it became a permanent regional body with headquarters in Accra, Ghana. The program undertook a range of experiments examining mostly the impact on utilization of clinics for antenatal care and deliveries, particularly those with complications.

The interventions are intended mostly to inform women about the desirability of an attended delivery (in a health center or sometimes hospital) and then help them reach the facility. Communities were consulted, usually through focus group discussion, on the main reasons for maternal mortality and the barriers in reaching appropriate care. In most cases the proposed intervention was also discussed with the community.

Interventions identified by the PMM network focus on four principle areas:

- Community motivation (Sierra Leone, Nigeria, Ghana)—village volunteers help women to understand the need for attended delivery and mobilize community aid to get women to a health facility
- Transport and radio communications for emergency transfer to a facility (Sierra Leone, Ghana, Mali, Gambia)
- Maternal waiting homes (Ghana, Zimbabwe)—situated near a hospital where women from remote areas can stay before going into labor
- Community loan funds (Sierra Leone)—financed by a community tax that can be used to pay for transport and other costs.

Support for training, equipment, and technical advice was provided by the network. In most cases a proportion of the funding was provided by the country government as some evidence of commitment to the program, and several interventions were combined.

An important prerequisite for success for all interventions under the PMM (and other projects) is that facilities be of a good standard prior to the motivation campaigns (Nwakoby, Akpala et al. 1997; Kandeh, Leigh et al. 1997). This reinforces the importance of coordinating demand-side strategies with appropriate supply-side investment.

Most of the interventions incorporating community education appear to show some evidence of an increase in the use of facilities, particularly by women with complicated deliveries. Some of these studies allege only a general increase in uptake of services but do not attempt to quantify the change or attribute it to the intervention (e.g., Srivastava and Bansal 1996; Thassri, Kala et al. 2000; Yeboah 2000).

Other studies, particularly those of the PMM network, provide “harder” evidence of change in behavior. Education and information campaigns in Nigeria, Sierra Leone, and Ghana all led to significant reported increases in attendance at normal and complicated deliveries as a result of the intervention (Nwakoby, Akpala et al. 1997; Kandeh, Leigh et al. 1997; Opoku, Kyei-Faried et al. 1997). The community campaign in Kebbi State, Nigeria was reported to have a significant positive impact on awareness of obstetric complications but no impact on referrals (Gummi, Hassan et al. 1997). Similarly, a campaign to target men and women to overcome cultural resistance to referred labor showed little increase in referrals (Olaniran, Offiong et al. 1997). In the latter case it is argued that inflation and other economic factors began a general decline in facility-based delivery that the intervention halted but did not reverse.

In Malawi, health information improved women’s knowledge of the need for antenatal care, complications, and postdelivery care and increased the use of services (Gennaro, Thyangathyanga et al. 2001). Postpartum care went up from 26 percent to 72 percent while use of clinic or district hospital for delivery went up from a combined 29 percent to 59 percent. Pre- and postintervention statistics are provided for the community. Villages were chosen at random, avoiding a selection bias. No statistics on nonparticipating villages are offered as controls, and no cost data are provided.

## Travel

Two PMM interventions concentrated on providing affordable and reliable transport (although others included transport as part of the overall intervention). An intervention in North West Nigeria worked with transport unions to provide reliable emergency transport (Shehu, Ikeh et al. 1997). The intervention established a seed fund to pay for the costs of fuel. This was replenished from affordable fees collected from relatives after medical treatment. Male drivers were also trained to be sensitive to women—avoiding smoking, talking loudly, and showing impatience. These were all identified in focus groups as attitudes that inhibit women's use of public transport. The impact of the scheme is somewhat hard to gauge. There is evidence that it was popular and transported 29 women and 27 men and children to hospital for medical emergencies during the two-year period of operation. It is not clear, however, whether these people would have got to hospital safely without that transport. In addition, fare defaulters and low pricing meant that the fund was exhausted within two years.

A project in Sierra Leone provided radios in communities to summon a four-wheel-drive vehicle stationed at the district hospital (Samai and Sengeh 1997). The evaluation reports that this led to a substantial increase in referrals for serious obstetric complications and a halving in the case fatality rate. The study compares women arriving by the emergency transport with those arriving by other means but finds no significant difference in condition.

One non-PMM project implemented community education, transport and training for traditional birth attendants in Indonesia and Guatemala in order to stimulate use of essential obstetric care (EOC) (Kwast 1996; Kwast 1995). Although no results are reported for the Javan interventions, substantial increases in referrals are reported in both Guatemala and Bolivia. The projects was intended to highlight the improvements that could be made in referrals and maternal mortality through community level (demand-side) interventions. The studies provided no information on intervention costs.

A combination strategy has also been used and evaluated in Dinajpur district of Bangladesh (Barbey, Faisal et al. 2001). The intervention, financed and implemented by CARE Bangladesh, aims to provide TBAs with information on recognizing difficult labor and getting women to the hospital. At the same time it establishes support mechanisms in communities for financing the costs of care through loan funds and motivation for other support such as blood donation. The final evaluation found a much higher use of emergency obstetric care compared to two control areas (two to four times the rate). Although the data on the increase are persuasive, the study does not disentangle the effects of community education and motivation from the separate impact of improving health facilities. The study did not report the intervention costs.

Four of the PMM project interventions established community loan funds to pay for the cost of transport as well as some other costs such as drugs and blood supply. One of the studies compared the obstetric complication admissions with nonintervention communities and found a doubling of admissions in the former compared to no change in



the later (Fofana, Samai et al. 1997). To what extent these two groups are comparable is not clear. The report says that of the six communities initially targeted only two, with stronger leadership, succeeded in establishing funds. Two other loan projects were evaluated in Ekpoma, Cross River State, and Zaduna in Nigeria (Essien, Ifenne et al. 1997; Chiwuzie, Okojie et al. 1997; Olaniran, Offiong et al. 1997). Evaluation concentrated solely on the numbers of loans given and their repayment rate (more than 93 percent within the first year). The project is considered a success within these narrow parameters, although concerns are raised about fund depletion and the need to raise the interest rate to offset the cost of defaults. The communities' ability to manage funds is evaluated highly, as long as they receive some support from outside facilitators. A breakdown of costs indicates that about 58 percent project money was spent on loans, implying a high administrative cost. Since much of these are probably capital start up costs, the annual cost should be lower.

Maternal waiting homes have been used to increase accessibility to emergency facilities for women living a long way from delivery facilities. The concept is straightforward in the provision of a basic inpatient waiting facility for women close to delivery. Women often take relatives to look after them and provide their own food. Evaluations in Zimbabwe and Ethiopia (non-PMM site) report high use of hospitals for the subsequent delivery and relatively low rate of postdelivery complications and deaths (Poovan, Kifle et al. 1990; Spaans, van Roosmalen et al. 1998). Evaluating this evidence is difficult, since a selection bias may mean that those more likely to record a positive outcome are also more likely to use the facility. In Ghana and Zaire, similar interventions were less positively received (Hildebrandt 1996; Post 1997). In the Ghanaian study, only one woman used the facility during the year. The reason for low use was that the facility was set in desolate, remote surroundings and lacked proper facilities for food preparation. The study emphasized the importance of consulting with the community on possible interventions as well as barriers to care to ensure that popular systems are designed.

The rich experience offered by the PMM network should not be under-rated. As emphasized by the network itself, a concentration on a few interventions increases the potential for cross-network learning (Kamara 1997). The evaluations are some of the most thorough programs of demand interventions outside the family planning arena. Nevertheless, a number of problems are clear in replicating the work.

- The sites chosen are inevitably subject to selection bias. A few compare results with other communities but most do not. A number of the studies allude to better-than-average leadership or management capability in the study communities. This makes it difficult to gauge the impact in other communities.
- Most of the studies do not adjust for confounding factors such as the effect of changes in the local economy on the utilization of facilities although some allude to their probable impact.
- None of the studies are economic evaluations, and the data on costs are limited and pertain mostly to capital items. Therefore, placing the expenditure into the

context of per capita or per delivery health spending is difficult as is calculating the ongoing annualized recurrent and capital costs of sustaining the programs.

## **FAMILY PLANNING**

Family planning is another area where there have been significant efforts to motivate consumers to use modern services. These efforts have received impetus from high fertility rates and evidence of their social, economic and health impact.

### **Education and information**

Demand and supply-side interventions often merge, since many of the efforts to stimulate demand for family planning are based partly making contraceptives more accessible, for example, by community-based distribution. In Bangladesh and some other countries, this orientation has led to a nationwide regular doorstep delivery of contraceptive supplies and advice.

Family planning workers have often been used to initiate demand for other health care, particularly child health services. In Gujarat, India, for example, family welfare workers have been used to motivate families to use basic child and other primary care services (Srivastava and Bansal 1996). A general increase in service use is reported, but without any quantification of uptake or costs.

One author has drawn attention to lack of rigor in many studies of health education, including those designed to increase the uptake of services (Loevinsohn 1990). In a systematic review only three studies were deemed to be sufficiently rigorous to permit replication. One of these was designed to stimulate the uptake of contraceptive services. The other two were directed at improving household knowledge of health but not at stimulating demand for health care.

### **Community-Based Supply**

Much of the effort to stimulate demand for lower fertility and modern contraceptive methods has focused on a combination of health education and contraceptive supplies provided at the community level. This strategy, which combines supply and induced-demand, has proliferated in many countries of Africa and Asia.

The doorstep delivery strategy of the Bangladesh family planning program is an important example of this approach. Bangladesh has been conspicuously successful in reducing total fertility. Since the war of liberation from West Pakistan, fertility has fallen by 50 percent compared to 25 percent in (modern) Pakistan itself. Although causation is difficult to attribute, much of this fall is allegedly the result of the strategy of taking supplies and advice to the “doorstep” of eligible couples. The strategy has managed to accommodate the customs of purdah and the segregation of the sexes dominant in rural areas of society. One assessment found the contraceptive prevalence rate (CPR) increasing at 4 percent a year in areas with doorstep delivery compared with little change in areas without the intervention (Ashraf, Ahmed et al. 1997). Yet the program was also criticized for being too expensive and technically inefficient (Arends-Kuenning 1997). More recently, national policy has moved away from door-to-door supply in favor of

static community clinics (GOB 1998). The impact on the CPR of this change is not yet known.

A review of community-based distribution (CBD) in Africa suggested a generally positive impact on contraceptive prevalence, although the results were mixed and depended largely on the design of the schemes (Phillips, Greene et al. 1999). The review suggests that schemes that consulted widely with community representatives in an effort to discover the reasons for low use of family planning are more successful than off-the-peg solutions. It also suggests that programs that provide financial inducements to community workers function better than those depending mainly on volunteers. Little attention is given in the review to the cost or cost-effectiveness of the schemes. It is stressed, however, that an early desire to achieve sustainability through cost recovery can damage program performance. Positive effects of CBD are reported for a wide range of countries including Burkina Faso, Kenya, Ghana, Mali and Nigeria. Negative or indeterminate impact was recorded in schemes in Rwanda, Ghana (Danfa), Zaire and Lesotho.

### **OTHER CARE**

A recurring pattern in demand-side interventions is attempts to increase utilization of health centers. Many of the interventions used by PMM network focus on supply-side improvement in health centers accompanied by demand-side information and accessibility campaigns.

#### **Education, Information, and Communication**

The theme is repeated in other settings. In Cambodia a project focused on the observation that people tend to use drug-stores for simple illness and hospitals for more complicated treatment while health centers are bypassed completely (Stuer 1998). The intervention employed social marketing techniques, more flexible opening hours (reducing opportunity costs), and outreach interventions to stimulate demand for the commune health center. The result was a sustained increase in utilization over a two-year period. It also led to more active participation of health center staff in community public health schemes such as better sanitation.

While much of the information and education in obstetrics and family planning has concentrated on motivation, another stream entirely attempts to help clients express views and gain a voice within the service planning systems in developing countries. These systems are often extremely centralized and male-dominated institutions. Infiltrating these structures might be viewed as a strategy to break down demand-side barriers through active participation in supply-side planning.

One example of the participation approach is the development of report cards where community opinion is canvassed and summarized in a short report on the appropriateness, quality, and effectiveness of services delivered. Report cards are used in India (Mumbai, Bangalore and Calcutta) and the Philippines (Goetz and Gaventa 2001). They are then used to put pressure on public officials to change services. In another model, service providers develop ways of collaborating with local communities in service

planning and establishing community funds for the costs of care. Many civil society organizations are involved in such developments, although much remains undocumented or inaccessible through traditional literature searches. One such program, run by LAMB hospital in Northwest Bangladesh, has involved community groups in the design of outreach services and the creation of designated loan funds for health care costs (Butterworth, Lakra et al. 2001). Although there is evidence of much community appreciation of the program, no evidence is yet available that quantifies its impact on service use.

Creating more informed consumers of medical care is the objective of the Ministry of Health in Kenya (Kariuki 2001). The Ministry is involved in providing education to patients to make them more aware of illness, when to consult with medical staff and which hospitals to visit. While the direct objective is to reduce unnecessary consultations, freeing up staff time and supply constraints, it may have a direct demand-side impact in making patients more aware of when and where to obtain services. No appraisal of the impact of the scheme is yet available.

### **Transport and Opportunity Costs of Treatment**

Direct provision of transport is one way of mitigating the cost of transport. A number of the PMM interventions provide transport for emergency obstetric care. In a few cases these have also been utilized for general medical emergencies (e.g., the seed fund to pay for transport to hospitals in Nigeria, (Shehu, Ikeh et al. 1997)). No examples of evaluated transport schemes for general care were found during the literature search. In the United Kingdom, one scheme run by volunteers helped to get the elderly and the poor to hospitals for outpatient appointments (Sherwood and Lewis 2000). The scheme was heavily used, but no evidence is offered that it reduced the number of missed appointments or improved access for the target groups.

The literature search did not reveal any evaluations of road improvement schemes to improve access to health care. Some recent project documents do, however, refer to such improvements. Among them, one scheme in Southern Sudan, implemented by CARE International, seeks to “upgrade the rural road network to improve access to the health units.”<sup>5</sup> A range of World Bank social protection projects (Argentina, Georgia, Madagascar, Vietnam) mention financing improvements in rural roads but mostly as a way of stimulating the local economy and providing work for the rural poor.<sup>6</sup> Only one project (Burundi) in the databases we used referred to the development of roads to improve access to health. This may reflect the need for projects to keep within boundaries set by the World Bank itself or sector ministries in client countries.

Despite the proliferation of community insurance schemes throughout Africa and Asia, little of the documentation suggests they are used to finance the demand-side costs of treatment. None of the recent reviews of community insurance mention such costs as

<sup>5</sup> [http://www.care.org/programs/program\\_area.asp?PID=1531](http://www.care.org/programs/program_area.asp?PID=1531).

<sup>6</sup> Accessed on the World Bank projects databases at <http://www4.worldbank.org/sprojects>

covered in the standard benefits package (Atim 1998; Bennett, Creese et al. 1998). One exception is a community insurance scheme in Kenya in Samburu district (Macintyre and Hotchkiss 1999). The scheme was established on a voluntary basis, with lower contributions by the poor, as part of a larger project run by an indigenous NGO, Samburu Aid in Africa (SAIDIA). Transport costs can often be as high as \$20 to \$60, large payments in a country where per capita income is around \$360. A premium of \$5 per year per household was required. Membership has fluctuated, but the average at any one time is 324. Sustainability is difficult to assess, since the costs of the scheme are not separated from the costs of other SAIDIA projects. Impact on referral is not assessed, and the many interventions in the area would in any case make any attribution to an intervention difficult. Discussions with community leaders reinforce the importance of improving facility care before stimulating demand for insurance.

Payments to receive health care are often controversial, but evidence is building that they can be important in motivating patients to receive care. A recent critical review of evidence, mostly from the United States, suggests that in 10 out of 11 studies fitting the review, criteria payments had a positive impact on compliance with treatment (Giuffrida and Torgenson 1997). A follow-up response to this article emphasized the need to target to ensure that compliance was being improved among the most vulnerable groups (Meredith 1998). An experiment in India used small cash payments to motivate families to use contraceptives and bring their children for health checks (Stevens and Stevens 1992). These payments appear to have attracted women to clinics and a dramatic rise in the contraceptive prevalence and continuation rates.

Studies of patient payments often do not examine the purposes behind payments—whether, for example, they compensate for demand-side costs such as lost incomes or travel or whether they have an additional inducement effect. A further response to the Giuffrida and Torgenson article warned against the use of coercion in delivering health care (Raffle and Morgan 1998). It could be argued, however, that financial inducements are less coercive than attempting to “persuade” patients by other means (such as direct confrontation).

There is a growing number of incentive or enabler schemes to promote the take-up of testing and treatment for tuberculosis. In Haiti financial payments were made to TB patients to cover the cost of travel, nutritional supplements, and income lost during treatment (Farmer, Robin et al. 1991). Patients randomly selected for the intervention were divided into two groups. The evaluation suggests that all adults receiving the payments recovered, compared to the control, where 10 percent died and 46 percent still had TB after one year. A recent review identified 26 separate schemes across low-, middle-, and high-income countries (Weill 2002). Most of these offer food and transportation in return for attendance at clinics for treatment. A few also make financial payments to patients. Much of the literature in developing countries is descriptive rather than evaluative, since most schemes are at a relatively early stage of development. Evidence on effect is mostly restricted to developed countries where most schemes show a positive impact on treatment adherence.

None of the studies mentioned in the reviews investigate a differential impact of paying patients between rich and poor groups. Many of the interventions, particularly those in the United States and Canada, in fact concentrate payment only on vulnerable groups such as drug users, immigrants, and the poor (Weill 2002). Intuitively, this characteristic targeting would seem to be the most cost-effective, yet clear confirming evidence appears to be lacking.

There is little evaluation of coupon or voucher programs used in health care. Much of the voucher literature relates to vouchers for education. Countries such as Chile, Colombia, Bangladesh, and the United States have used targeted voucher schemes to finance education for poor families (King, Orazem et al. 1999; Parry 1997; Pearson 2001). There are fewer examples in the health sector, although examples are given in a recent review of vouchers for patients with sexually transmitted diseases in Nicaragua (Pearson 2001). The experience suggests that administration costs, particularly initial set up, can be considerable. They are also subject to corrupt practices such as phantom users, particularly where the value to users is large as with education and possibly also with vouchers for expensive hospital care. Another example is a voucher scheme set up for the very poor to finance maternal and child health (MCH) care in Yunnan Province, China (Kelin, Kaining et al.). Vouchers can be used to pay for routine ante and postnatal care, hospital delivery, first aid for severe obstetric complications, and medical treatment for infants under three months. An important feature of both the Chinese and Nicaraguan voucher schemes is that the medical need is predictable for a well-defined population with specific needs. Voucher schemes are likely to work less well where the need is less predictable. In this case, vouchers to purchase insurance rather than specific services are more likely to be appropriate. In our review, we did not find any written evaluation or other evidence on the use of vouchers to finance demand-side costs such as transport.

### **HAVE THESE INTERVENTIONS BENEFITED THE POOR?**

The poverty focus of these interventions can be assessed in at least three ways:

- In terms of the populations and individuals primarily targeted in the intervention
- In terms of the presence or absence of design features more or less likely to make the intervention attractive to poor households and individuals
- In terms of impact on use of services and outcomes.

#### **Targeted Populations**

Most of the interventions discussed in this paper are targeted at rural communities in low-income countries. Implicit in this approach is a characteristic targeting mechanism that attempts to increase use of services by these poor communities. Most of the studies do not attempt to separate poor and nonpoor individuals and households, and such segregation is undesirable for several good reasons. First is the well-discussed issue that direct targeting is often difficult and ineffective. By concentrating instead on targeting vulnerable groups (such as pregnant women or tuberculosis patients) in poorer (rural) areas, it is probable that many of the poor will have the opportunity to benefit at a lower administrative cost. Second, most of the interventions are small-scale and based on community mobilization and solidarity. Separating beneficiaries into poor and nonpoor

could reduce the solidarity element and interest of the community in developing the intervention.

In a few cases the intervention is only available to the poor. This is true of the MCH voucher scheme in Yunnan. In other cases the scheme tends to self-select certain types of people who are usually poor. An example of this is the cash-incentive program to promote child spacing in India, which attracted mostly field laborers with little schooling (Stevens and Stevens 1992).

### **Design Features**

A second poverty dimension is the presence or absence of design features that are more or less likely to make the intervention attractive to poor households and individuals in a given community.

The design of most of the interventions to overcome barriers is aimed at minimizing costs of care and so would be expected to appeal particularly to the poor for whom these costs are proportionately a greater burden. At the same time, some of the design features may prevent the poor from benefiting to the same degree as other members of the community.

Loan schemes tested in two countries during the PMM in three different areas were designed to mitigate some of the immediate costs of receiving obstetric services (Essien, Ifenne et al. 1997; Chiwuzie, Okojie et al. 1997; Fofana, Samai et al. 1997). These required repayment in full although the scheme in Ekpoma, Nigeria wrote off the debt if the pregnant woman died. These interventions are likely to benefit the seasonally poor by helping to smooth out spending. The debt is likely to be a burden for households where poverty is more long lasting. Indeed the design of some of the loan funds appear to militate against use by the poor, requiring collateral or a guarantor to ensure that the loan can be repaid after treatment.

As mentioned, only one community insurance scheme reviewed included nonservice costs such as transport as a covered benefit (Macintyre and Hotchkiss 1999). Although initially a single premium was set for all beneficiaries, it was changed to a sliding scale premium based on income. This mostly benefits poor widows and widowers although no evidence is given on the impact it has had on access among this group.

The evaluation of the maternity waiting homes also suggests a concept that may not appeal to the poor. Focus groups in Nsawam, Ghana suggested that the waiting homes imposed more costs on the poor by requiring women to purchase food and other items during their stay (Wilson, Collison et al. 1997).

### **Assessment of impact on Use and Outcomes**

A third dimension is the assessment of impact of the intervention on use of services by the poor and nonpoor in the targeted community and the outcomes.

The studies reviewed did not include a specific analysis of beneficiary incidence by income or any other measure of deprivation. They deal primarily with increasing overall

levels of utilization rather than access by specific groups in the community. In some cases the absolute numbers are so small that further disaggregation into income groups would be meaningless. Nevertheless, some idea of beneficiary incidence would be valuable. This is an area for future research and an important consideration in the monitoring design of future interventions.

## **CONCLUSIONS**

### **MAIN FINDINGS**

One of the most striking elements of the literature was the burgeoning literature on barriers to access—we have only cited only a fraction here—while at the same time, the relative paucity of studies on ways of overcoming these barriers. A number of people contacted to provide information mentioned that they expected far more evidence to be available than actually appeared. A bigger surprise was the lack of studies evaluating interventions, particularly cost and effectiveness, based on data gathered through controlled research design.

The imbalance in literature on barriers and interventions can be attributed to a number of factors. First, research problems can be readily spotted, but designing effective interventions is much harder. A second, methodological, issue concerns the inherent difficulty of designing robust natural experiments that avoid, or take account of, the many confounding factors influencing the effect of the intervention. Finally, as in many areas of health sector reform, it is likely that much of what is being done locally or even nationally is simply never documented. A taste of this problem was provided in email correspondence that revealed a variety of civil society organizations that are undertaking relevant interventions that are not documented in any formal way.

From the limited evidence available, a number of themes stand out.

First, while demand-side barriers are important, interventions are likely to work only if services have already reached an adequate standard. An important element of the PMM network interventions was to ensure that the supply was right before intervening on the demand side. Conversely, evidence on relative use of public and private facilities indicates that even quite poor people will travel long distances if they know that the facility offers good quality services. And they will bypass local, poor quality (public) facilities.

A second theme concerns the importance of consulting extensively with communities both on the barriers that prevent use of services and the types of interventions that might be acceptable. This also reinforces the need to ensure that interventions are culturally sensitive. While some aspects of “culture” sometimes lead to social discrimination that is considered unacceptable, the reality is that attitudes take some time to change. The pragmatic approach of many interventions is to respond with short-term approaches that address access assuming no change in prevalent attitudes. The best programs also



incorporate elements of community education that shift attitudes over time. The need for interventions to be country- and even locality-specific is also implied.

That very few insurance schemes appear to cover demand-side costs is noteworthy. This is probably one reason studies often find that uptake of insurance falls off quickly for populations living further away from health facilities. Although it is not well documented or evaluated, there are many more examples of microcredit and other loan schemes for financing health care costs. Discussion with a number of NGOs suggests that community funds are increasingly being used to finance the user costs of health care including transport. These are recognized as major barriers to accessing services.

Obstetric care and family planning stand out as the main areas where demand-side initiatives have been tried and evaluated. This is probably due to a number of factors. One reason is that these areas have received substantial funding from international agencies and priority attention from domestic governments. In the case of family planning, the ease of implementing community delivery through social marketing and other supply-side initiatives has added to the general environment of experimentation. There are relatively few initiatives across other areas of health care, and evaluations of any type are singularly lacking.

Much of the evidence is based on interventions introduced in poor rural communities in low-income countries. In most cases, however, an explicit focus on the impact on the poor and nonpoor in each community is absent. Some of the schemes self-select the poor through their design. Some further analysis of this question is required since the barriers to access are likely to be much higher for the poor than for the better-off. This is an important area for further research.

### **POLICY SIGNIFICANCE AND PURCHASING IMPLICATIONS**

The third part this paper attempted to indicate the importance of demand-side barriers in accessing health care. Evidence on the size and nature of these barriers across a wide variety of extremely diverse countries is considerable. Demand-side barriers are particularly important in countries where travel is difficult, employment inflexible, and knowledge of appropriate health care-seeking behavior poor. Yet even in rich industrial countries, reviews have demonstrated that demand-side barriers remain important (Goddard and Smith 2001).

The challenge for health purchasers—ministries of health, insurance funds, local governments, or civil society organizations—is how to direct finance in a way that improves access through a combination of supply and demand measures. Though still fragmented, evidence is accumulating that supply-side measures for delivering medical care can work. Similar evidence on the effectiveness and cost-effectiveness of demand-side interventions does not exist.

Among the reasons for this lack of evidence, one is that changes are hard to attribute to interventions, as can be seen from attempts to evaluate demand-side interventions. Site selection, with a few exceptions, is not random but determined more by communities'

willingness to implement changes. Often studies do not control for confounding factors through selection of a matched control area and use of multivariate techniques. A further problem in assessing cost-effectiveness is that most of the studies reviewed do not provide good data on capital and recurrent costs or their annualized, long-term equivalent. As a consequence, while a number of innovative projects to stimulate demand have been implemented, their policy significance and potential for extending to other communities are mostly impossible to assess.

Another reason for a lack of evidence may be that the problems are by nature community-oriented and outside health facilities and involve a wide range of individuals. Consequently, they are often not studied in the same way as other health policy interventions. Devising interventions is not the domain only or mainly of medical staff and patients. Intervention design must encompass household members, community and religious leaders, politicians, transport unions, employers, and other interested parties as well. Interventions are frequently novel—but undocumented. They also often overlap with other attempts to reduce poverty and promote employment opportunities. Credit schemes, better roads and bridges, and improved education, for example, have general development goals. Better health and access to health care is usually only one benefit. Many of the projects that influence demand funded by civil society, governments, or development banks may not even be evaluated for their impact on health-seeking behavior.

This study suggests an agenda to stimulate the evaluation of methods to minimize demand-side barriers. The research is likely to be multidisciplinary and go beyond the traditional areas of family planning and obstetrics that are relatively well reported in the literature. Research will need to incorporate both measures of effectiveness and costs into the design. Of particular importance is investigation of the sustainability of interventions, particularly as methods for mitigating barriers are transferred from one region or country to another. A number of projects supported by NGOs and development partners already incorporate some measures to address demand-side constraints. Measuring the impact of these interventions and gauging their cost-effectiveness, within the overall evaluation of the project, could be a cost-effective way of generating research evidence in this area.

It has become almost a commonplace in the health policy literature to minimize the impact of health care on health status and on poverty. Yet a small but growing body of literature also recognizes that increased availability of social services is an important prerequisite for “poverty-reducing growth” (Mehrotra 2000). A recent study questioned why public spending appears to have so little impact on health, given the availability of many cost-effective services (Filmer and Pritchett 1999). The study emphasized the importance not only of providing cost-effective services, but also of motivating consumers to utilize them. While supply-side measures such as basic service packages are important in developing this access, the importance of demand-side measures seems impossible to ignore, particularly in countries where poor knowledge of services, inadequate transport systems, and cultural constraints mean that most of the population rarely set foot in a modern health facility. Efforts to improve the effectiveness of

purchasing are likely to prove less than optimal unless their strategies incorporate efforts to reduce demand barriers.

Very little of the research cited, either on barriers or on means of overcoming them, provide substantive quantitative evidence on the differences in impact on poor relative to nonpoor groups. Income is often included as a separate variable rather than through its interaction with demand barriers. Interventions are often undertaken in poorer areas but this leaves little idea of the relative costs and benefits of certain interventions when applied to poor and nonpoor populations. Incorporating a poverty focus into future work as well as in a reanalysis of past studies is important to help focus resources on overcoming barriers and improving health status among the poor.



## APPENDIX A. SEARCH STRATEGY

Structured searches of a variety of databases were undertaken to obtain information on interventions to reduce demand-side barriers. Keywords used were based on the basic framework of barriers and potential interventions described in section three of this paper (table A1.1)

**Table A1.1. Demand Barriers to Service Use and Keywords Used.**

<i>Demand barrier</i>	<i>Possible strategies and keywords</i>
<b>Human capital</b>	
Lack of information	Communication/information strategies
Lack of education	Basic education Health education (schools, communities)
<b>Household and individual lifestyles</b>	
Intrahousehold preference (sex, age)	Selective exemptions Selective service subsidies Community workers Targeted education—key decisionmakers including men and community leaders
Cultural preferences	Community and doorstep workers Access to social structures of community—particularly to influence the way in which services are delivered
<b>User costs of health care</b>	
Distance/travel costs	Infrastructure development Communication—media, meetings. Transport—capital purchase and subsidy for existing transport.  Vouchers and coupons Community workers Insurance and loans
Opportunity (lost work) costs	Sick pay Minimizing time off work (supply approaches to reduce time)

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Seasonal clinics (well person), savings schemes.

Community-based service delivery

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Detailed searches were then structured around these basic keywords.

Four databases were searched together: MEDLINE, PopLine, Econlit and Sociological Abstracts, and they were searched from 1995 to the present. The general search strategy for each was:

No. Records Request

The searches below are from:

C:\MYDOCU~1\SEARCHES\INEQUA~1\DEMAND2.HIS.

- 1 7603 "Health-Promotion"/All subheadings
- 2 2943 health promotion in ti,ab
- 3 20274 explode "Health-Education"/ all subheadings
- 4 2530 health education in ti,ab
- 5 2005 prevention program\* in ti,ab
- 6 80880 explode "Education"/ all subheadings
- 7 6349 ((Behavior or behavior or attitude\* or lifestyle) near (change or changing or therapy or modif\*)) in ti,ab
- 8 6168 (Leaflet or Mass media or advertising or campaign or campaigns) in ti,ab
- 9 148 (Community development) in ti,ab
- 10 73 (organizational development) in ti,ab
- 11 14099 (public health) in ti,ab
- 12 162 ((preventative or preventive) near (health services)) in ti,ab
- 13 316 (((report card\*) or accountability or accountable or accreditation) near (hospital or service or provider)) in ti,ab
- 14 5605 explode "Transportation"/ all subheadings
- 15 24 (transport policy or transport policies or transport plan\* or transport initiative\* or transport scheme\*) in ti,ab
- 16 49 (public transport or affordable transport or rural transport or sustainable transport) in ti,ab
- 17 1 (fare scheme\* or concessionary fare\* or bus voucher\* or travel voucher\*) in ti,ab
- 18 451 (sick leave or sick pay) in ti,ab
- 19- 41 spelling variations
- 42 1584 ((reduc\* or decreas\* or minimi\*) near (inequalit\* or disadvantaged\* or unemployed\* or deprived or deprivation)) in ti,ab
- 43 26409 #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42
- 44 6600 "Developing-Countries"/ all subheadings

A similar search was conducted using Ingenta (through BIDS). In addition the following web-sites were searched extensively for information:

Some of the websites consulted:

National Bureau for Economic Research (US) <http://www.nber.org/>

World Health Organization (WHO) <http://www.who.int/home-page/>

Asian Development Bank <http://www.adb.org>

International Development website financed by DFID and hosted by the Institute of Development Studies (IDS) <http://www.id21.org>

Management Sciences for Health (MSH) <http://www.msh.org>

United Nations International Emergency Children's Fund (UNICEF) <http://www.unicef.org>

Christian Aid <http://www.christian-aid.org.uk/aboutca/liblinks.htm>

Futures Group International <http://www.tfgi.com>

CARE International <http://www.care.org/>

Regional Prevention of Maternal Mortality (RPMM network)  
<http://www.rpmm.org/publications.htm>

Pan American Health Organization (PAHO) <http://www.paho.org/>





## APPENDIX B. EVALUATIONS OF INTERVENTION STRATEGIES

<i>Main type</i>	<i>Country</i>	<i>Intervention and coverage</i>	<i>Evidence used to justify intervention</i>	<i>Evidence of success</i>	<i>Any evidence on costs</i>	<i>Reference (Endnote insert)</i>
Community education for obstetric care (also travel)	Nigeria (PMM)	48 Community contact persons recruited after local hospitals upgraded. Covered 74 percent of 450,000 population	Focus group discussions with women.	Increase in use of assisted delivery, 129 during first year.	US\$635—capital and recurrent not split. \$5 per woman assisted., \$35 per woman with complications.	(Nwakoby, Akpala et al. 1997)
Community education	Nigeria (Kebbi State) (PMM)	Messages on safe-motherhood distributed through community meetings (Followed upgrading of maternity centers and hospitals) Population of 109,000	Focus groups revealing poor knowledge of obstetric complications	Knowledge gains of over 30 percent reported. No increase in use of services. This is possibly result of civil unrest.	\$9,500	(Gummi, Hassan et al. 1997)
Community education—cultural barriers.	Nigeria (Cross River State) (PMM)	Community education including local radio. Aimed at women of child-bearing age and their husbands.  Population about 39,000.	Focus groups revealing cultural and socioeconomic barriers to access.	Increase in knowledge of complications (e.g., recognition of obstructed labor) Decline in obstetric referrals which appears to have started preintervention (economic factors). Slight increase toward end of monitoring period	\$6,500 for IEC, staff allowances and training.	(Olaniran, Offiong et al. 1997)
Health education and transport/communication	Sierra Leone (PMM)	Community motivators in district of 35,500, four-wheel-drive vehicle, radio to hospital Motivators organize community action group to get women to facility, (PHC units first upgraded)	Focus groups with community leader, TBAs, staff and community. Cost and lack of transport major barriers	PHU use increase from 9 to between 12 and 16 women per month.	Capital costs of motivator training and equipment (e.g., bicycles). Mostly funded by MOH.	(Kandeh, Leigh et al. 1997)
Information on services and health seeking	Ghana (Ashanti) (PMM)	Public health nurses educating women and community groups. Transport loan fund. Village bicycle for fetching vehicle to take women to hospital.  District of 222,632.	Focus groups with community.	General admissions increased by 60 percent and normal deliveries by 37 percent, women presenting with complications tripled at the health centers over three-year period. Reduction in complications at district hospital reported.	\$1,950 mostly capital costs.	(Opoku, Kyei-Faried et al. 1997)

<i>Main type</i>	<i>Country</i>	<i>Intervention and coverage</i> (Health Center facilities upgraded first)	<i>Evidence used to justify intervention</i>	<i>Evidence of success</i>	<i>Any evidence on costs</i>	<i>Reference (Endnote insert)</i>
Health education and travel support	Bangladesh	Comprehensive intervention in Birmapur Upazila, Dinajpur District. Implemented by CARE Bangladesh. Included (1) birth planning by training TBAs to educate women and spot problems, (2) community support system to provide transport, match blood, and develop community fund for costs of care.	Documents, focus groups and observation that three delays lead to heavy maternal mortality and low use of services for delivery.	The area plus two comparison areas initially had similar use of emergency obstetric care. Over two-year period the rates diverge so that intervention area has a rate two to four times the control areas. Services also upgraded. Attributing the change to any one intervention is difficult.	Not discussed.	(Barbey, Faisal et al. 2001)
Health education	India	Home education for parents on child dental health: 100 parents with 430 children	General reports on dental education.	Significant reduction in mean plaque scores	None	(Thomas, Tandon et al. 2000)
Health education	South Africa	Nurse educators in poor township. Basic health education on, for example, nutrition based on community priorities for better health	International evidence on need to consult with communities before developing education programs	Evidence on community empowerment, no quantitative data	None	(Hildebrandt 1996)
Health education	India (Gujarat)	Family welfare workers to motivate family planning, reproductive health, and basic child health care demand	General desire to understand health-seeking behavior of communities.	General increase alleged in uptake of services	None	(Srivastava and Bansal 1996)

<i>Main type</i>	<i>Country</i>	<i>Intervention and coverage</i>	<i>Evidence used to justify intervention</i>	<i>Evidence of success</i>	<i>Any evidence on costs</i>	<i>Reference (Endnote insert)</i>
Information	Cambodia	To address observed view that people use drugstores for simple problems and hospitals for serious, problems. They bypass the health center.  Social marketing, more flexible hours, and outreach (health promotion) activities. Communes with 17,785 population in semirural area.	Observation that supply-side responses to increase use were a failure. Earlier needs assessment concentrated on assessment by staff not community. Found that competition worked only where people understood service. Otherwise cooperation is needed to “market” services.	Sustained increase in utilization over two-year period. Led to more active use of staff in community and development of public health schemes (e.g., better sanitation), which were strengthened by the health education campaigns.	None	(Stuer 1998)
Health education	Thailand	To reduce maternal mortality through health education.  214 women		Patient satisfaction with health education and change in nutrition practice.	None	(Thassri, Kala et al. 2000)
Health education	Ghana	Improve knowledge of traditional health practices.	Observation that traditional knowledge often misused (e.g., herbs used for abortion)	Dissemination of knowledge. No numbers given.	None	(Yeboah 2000)
Distance	Kenya	Health insurance for emergency referral—designed to spread high transport costs (perhaps \$20 To \$60) Voluntary scheme with lower premium for poor, payable in kind. Part of larger health, education and water program. Writers emphasize that took a long time to develop and would not have succeeded had services not been dependable at other end.	Empirical study of costs of transport and barriers to receiving care.	Numbers covered—average of 324 households over eight-year period, 25 percent of target area.	Premiums cover only between 12 percent and 15 percent of program’s vehicle costs.	(Macintyre and Hotchkiss 1999)

<i>Main type</i>	<i>Country</i>	<i>Intervention and coverage</i>	<i>Evidence used to justify intervention</i>	<i>Evidence of success</i>	<i>Any evidence on costs</i>	<i>Reference (Endnote insert)</i>
Health education	Various	Systematic review of health promotion interventions. Only three were regarded as sufficiently rigorous to permit replication. Two of these are education as health care interventions. One is to stimulate the uptake of contraception.				(Loevinsohn 1990)
Health education	Malawi	Training of village trainers on need for preventive care and prompt referral of problem deliveries.	Evidence on low referral and high maternal mortality.	Significant increase in use of clinic and pre- and postnatal care. Little change in superstitious beliefs.	Initial training and small incentives (e.g., clothing) to village volunteers. No cost figures provided.	(Gennaro, Thyangathyanga et al. 2001)
Distance	Zimbabwe (PMM)	Maternity waiting home for expectant mothers. More likely to be used if mother had previously had ante-natal care.	Evidence on low use of delivery facilities.	More than 78 percent hospital births reported. While this seems high, no evidence is given on changes in hospital births following introduction of homes.	None	(Spaans, van Roosmalen et al. 1998)
Distance	Ghana (PMM)	Maternity waiting homes for expectant mothers. One ward of abandoned hospital converted.	Focus group discussions identified poor roads and high-cost transport as major barrier.	Only 1/25 during a year of women complied with suggestion to stay at home. Reasons given were absence of relatives, desolate surroundings, distance from hospital. Conclusion: prior focus group discussions should explore solutions.	\$10,500—capital cost	(Wilson, Collison et al. 1997)
Distance	Sierra Leone (PMM)	Provision of transport to summon and carry women to hospital. Radio links.	Focus group discussions.	Number of women with major complications increased from 0.9 to 2.6 per month, case fatality rate halved.	Transport and communication \$75,000 (capital cost).	(Samai and Sengeh 1997)
Distance—affordable transport to hospital	Nigeria (PMM)	Transport unions sensitized and trained to manage revolving emergency fuel fund. Training also included improving behavior toward	Focus group indicated transport delay hampered women receiving care.	29 women with obstetric and 27 men and children with other emergencies. Very positive community response.	\$268 for training. Seed fund financed by other donor and cost not included in paper.	(Shehu, Ikeh et al. 1997)

<i>Main type</i>	<i>Country</i>	<i>Intervention and coverage</i>	<i>Evidence used to justify intervention</i>	<i>Evidence of success</i>	<i>Any evidence on costs</i>	<i>Reference (Endnote insert)</i>
		women. Relatives repay cost later. Target population 110,000.		Some fare defaults reported—and within two years seed fund ran out.		
Obstetric loan funds	Nigeria (Ekpoma) (PMIM)	Funds managed by 12 clans with monitoring from project staff and lent at 2 percent interest (lump sum, not annual) after 8- to 12-day grace period.	Focus groups identifying difficulty paying for transport as major barrier.	In one year 380 loans with 93 percent full repayment. Used to pay for transport and also blood, drugs, and hospital fees.	\$1,360 most seed money for the loan funds for 12 communities.	(Chiwuzie, Okojie et al. 1997)
Emergency loan funds	Sierra Leone (PMIM)	Community loan funds based on per capita levies (tax).	Focus group discussion indicating lack of funds contribute to delay in seeking obstetric care.	Doubling in admission of women with obstetric complications (compared with almost no change in communities without loan funds).	Mobilizing two communities to establish funds—\$472.	(Fofana, Samai et al. 1997)
Community education	Bolivia	Education of women's and other community groups on safer birthing, knowing when to seek assistance and better knowledge of contraceptives.	Consultations with community groups. Descriptive information available.	Perinatal deaths halved. Contraceptive prevalence increased from 0 to 27 percent. Increase in trained birth use from 13 to 57 percent	None discussed.	(Kwast 1995), (Kwast 1996)
	East Java	Information for women in community, transport subsidies, radio communication in health center and hospital.		None reported.		
	Guatemala	Training for TBAs in timely identification of problems and options for referral.		Increase in referrals by between 245 and 313 percent. Improvement in timeliness of referrals.		
Distance	Ethiopia	Maternity waiting homes near community hospital and aimed at women living up to two days from a main road.	Based on assessment of distances traveled by women in the event of emergency delivery.	Those admitted via the home tended to be more likely to have a normal delivery than those with direct admission to hospital. Reduction in maternal deaths also reported. Selection effects are not discussed.	\$1,000 capital and \$500 recurrent (1990) Significant community contribution	(Poovan, Kifle et al. 1990)
Cash incentives	Tamil Nadu, India	Cash payments made to families to increase use of	Data on poor birth spacing and low uptake	Significant increase in use of contraceptives. Increase	Not mentioned	(Stevens and Stevens 1992)

<i>Main type</i>	<i>Country</i>	<i>Intervention and coverage</i>	<i>Evidence used to justify intervention</i>	<i>Evidence of success</i>	<i>Any evidence on costs</i>	<i>Reference (Endnote insert)</i>
Transport costs	Haiti	Financial aid for TB patients including travel, nutritional supplements, reminders to visit clinic, income for three months.		All 30 adults enrolled recovered compared to control where: 10 percent died, 44 percent did not fully recover, 46 still had TB after 1 year.	None mentioned but income supplements cost \$90 per person.	(Farmer, Robin et al. 1991)
Distance	UK	Transport scheme run by volunteers offering subsidized, and in some cases free, transport to hospital for outpatient and general practitioner visits. Mostly used by elderly.	Information relative to rural deprivation.	Strong community support and use by patients. Steady increase in number of trips.	State subsidies of up to £500 and 30p per trip for each parish scheme.	(Sherwood and Lewis 2000)
Credit schemes	Bangladesh	Impact of credit schemes on use of modern contraceptives.		Significant increase in contraceptive use by members of credit schemes. Account was taken of selection bias.	None mentioned	(Steele, Amin et al. 1998)
Community-based distribution with health education	Bangladesh	Doorstep delivery of contraceptives	Statistics on low CPR combined with information on cultural barriers.	Operations research suggested that CPR increased by 4 percent per year compared with no significant change in other comparable areas.	Community workers account for up to 25 percent of subdistrict level staffing budget. Approach is now considered high-cost.	(Ashraf, Ahmed et al. 1997)

<i>Main type</i>	<i>Country</i>	<i>Intervention and coverage</i>	<i>Evidence used to justify intervention</i>	<i>Evidence of success</i>	<i>Any evidence on costs</i>	<i>Reference (Endnote insert)</i>
Community-based distribution	Review of more than 100 papers using CBD methods across Africa	Range of community-based delivery options evaluated	Observation that passive, supply-driven system has not resulted in sufficient increase in CPR.	<p>Many projects demonstrate significant increase in CPR. Impact is often contaminated by confounding factors.</p> <p>Paid workers function better than volunteers.</p> <p>Programs work better when accompanied by active education campaigns.</p> <p>Designs work better when they take account of community behavior, cultural barriers, and local ideas of acceptable interventions.</p>	<p>Little discussion.</p> <p>Some discussion that premature concerns about sustainability and cost recovery can undermine programs.</p>	(Phillips, Greene et al. 1999) and studies referred to in reference list for this paper.





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