

**Household Health Expenditures in Morocco:
Implications for Health Care Reform**

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Household Health Expenditures in Morocco: Implications for Health Care Reform

David R. Hotchkiss, Zine Eddine el Idriss, Jilali Hazim, and Amparo Gordillo

Abstract: The purpose of this study is to investigate the level and distribution of household health care expenditures in Morocco, and to compare the level of health care funds provided by households with the levels provided by the government and international donors. In addition, the reliance of poor and non-poor households on both public and private providers is investigated. The study is based on data collected in the 1995 Demographic and Health Survey, which included a special supplement on health care expenditures. Descriptive statistics are presented on utilization of and out-of-pocket expenditures for antenatal and obstetric care, chronic care, and non-chronic care associated with illness and injury, by urban/rural status and by socio-economic status. The results indicate that government health care providers are an important source of modern health care not only for poor households, but for better-off households as well. While individuals who use private health care providers incur substantially higher costs than those who use public providers, an unexpected finding of the study is the degree to which public clients pay for health care services, despite the fact that public care is nominally priced in Morocco. The results indicate that carefully designed financing strategies may be effective in achieving a higher level of cost recovery and efficiency within the public sector.

Introduction: Rationale for Investigating Household Health Expenditures

As international donors reduce their presence in many developing countries, governments are facing increasing pressure to improve the financial sustainability of family planning and reproductive health programs. The case of Morocco provides an excellent example. In the past 30 years, international donors such as the United States Agency for International Development (USAID) have been an important source of funding for the provision of family planning services and maternal and child health care (FP/MCH). However, as USAID phases down its activities in Morocco, there is concern among officials within both USAID and the government that FP/MCH programs are not financially sustainable and that many of the substantial gains in contraceptive utilization and child survival may be eroded without the implementation of significant health sector reform strategies.

The prospect that Morocco will achieve financial sustainability in the provision of family planning and reproductive health services in future years is jeopardized by a number of financial, organizational, and allocative problems that affect the overall public health care sector. Of paramount concern is the insufficient level of government resources allocated to the Ministry of Health. In the past two decades, per

capita health care spending by the government has actually decreased from Dirhams (DH) 100 in 1980 to DH 97.2 in 1995 (in constant terms) (Zine Eddine el Idrissi and Hazim, 1997). As a percentage of gross domestic product, only about 1.14 percent of total income in 1997 is spent on government health care services (Royaume du Maroc, 1998a). Moreover, the average annual growth rate of the Ministry of Health has lagged behind that of GDP over the past thirty years. From 1967 to 1993, the real budget of the Ministry of Health increased an average of 3.8 percent per year, compared to an increase in the GDP of 4.6 percent over the same period. While the stagnation in government health care spending is not a new problem in Morocco, there is concern among USAID that once multinational and bilateral donors are expected to reduce their presence, there will not be sufficient government resources to ensure the financial viability of the FP/MCH subsector.

There is also a concern that Morocco's government health budget is not allocated efficiently. While there is disagreement regarding exactly how much the government spends various types of health care activities, there is general agreement that there is a tendency to favor urban care over rural care and tertiary care over primary care. A recent estimate from the Ministry of Public Health suggests that less than 20 percent of the Ministry's budget in 1997/8 was allocated to rural areas, despite the fact that over half of Morocco's population is rural (Royaume du Maroc, 19981). In addition, over 61 percent of government health resources was allocated to hospitals (Royaume du Maroc, 1998b).

The government is concerned, not only about the reduced presence of donor resources within the FP/MCH subsector, but about the efficiency and viability of the health sector in general. In order to improve the financial viability of the overall public health care system, government officials are considering a number of health sector reform strategies. Most of the proposals on the table, which include government mandates for employer-based health insurance, a wider use of cost recovery schemes in public hospitals, and incentives to further increase the role of the private sector (which is already substantial), involve mobilizing household resources for the provision of health care services. In addition to increasing the rate of cost recovery in government facilities, policy makers also expect that the allocative efficiency of the public health care sector will also improve. By collecting monies from those able and willing to pay for

health care, it is hoped the government will be better able to allocate more resources to primary health care in rural areas.

However, before the government designs and implements policies that affect the cost of health care for private households, more needs to be known about the current structure and financing of the health economy. How much are households currently spending for health care? What types of services are being utilized? Do the health care utilization and expenditure patterns of poor households differ from those of better-off households? What percentage of household out-of-pocket funds are spent on private providers, either traditional or modern? Knowing the answers to these questions is critical for policy makers in order to make informed decisions regarding policies intended to improve social welfare. If, for example, households lack the ability and the willingness to spend more on health care, the government will probably need to provide only very basic health care at an extremely low price. However, if individuals are found to have the ability and willingness to pay for good quality health care, then the government's options are expanded. They can offer a wider variety of health services and still recover a substantial portion of the costs.

The purpose of this paper is to investigate the level and distribution of out-of-pocket health care expenditures for both curative and reproductive health care. In the first section, we discuss the data we use to analyze health care seeking behavior. Second, we evaluate the role of households in Morocco's health economy by comparing expenditures from all sources of funding: households, the government, non-governmental organizations, private companies, and donors. Third, we investigate the distribution of household expenditures on outpatient care and hospitalization, and their underlying determinants, by urban/rural status, socioeconomic status, and source of care. Fourth, we investigate the distribution of household expenditures on antenatal care and birth deliveries. We conclude the paper with a discussion of the implications of our results on future efforts to design and implement health care financing reform in Morocco.

Data and Methodology

The data used in this analysis come from the 1995 Morocco Demographic and Health Survey (DHS). Originally designed to follow women who were interviewed for the 1992 DHS-II, the 1995 survey included a special supplement on health care utilization and expenditures. In the 1995 DHS Survey, 107 of the 212 sample clusters in the 1992 DHS-II were randomly chosen and field workers were instructed to revisit the same households chosen for the 1992 survey and interview all women aged 12-46 years in 1992 who had been recorded in the household roster for that survey, along with all new female household members aged 15-40 years (Azelmat et al., 1996). When a household interviewed in 1992 moved within the sample cluster prior to the 1995 survey, an attempt was made to locate the household. If a household had moved out of the sample cluster, the 1995 interview was conducted with the new household that resided in the same dwelling. No attempt was made to locate either individuals or entire households that had moved outside the sample cluster during the period between the 1992 and 1995 surveys. A total of total of 18,605 individuals, including 2,481 women of reproductive age, were included in the 1995 survey.

The household-level survey includes questions pertaining to a wide array of economic, demographic, and health-related behaviors of each member of the household, not just the woman of childbearing age. The topics covered by the DHS include perceptions of symptoms related to chronic and non-chronic diseases or injuries in the past month, marriage and maternal history, antenatal health care utilization, the type of place and practitioner for birth deliveries, demographic characteristics, housing, household wealth, and educational attainment. The special supplement on health expenditures includes questions on the type of facility utilized for the treatment of illnesses and injuries, consultation costs, drug costs, laboratory costs, and x-ray costs. Information on the costs of antenatal care and birth delivery was also collected from women who have had at least one birth in the past five years. Overall, the health questions included in the survey capture information on the wide range of health care choices that are available in Morocco, from traditional healers in the southern rural areas to modern hospitals in the two largest cities, Casablanca and Rabat.

In addition to surveys carried out by the Ministry of Public Health (e.g.: Royaume du Maroc, 1992), the Enquete Nationale sur les Niveaux de Vie des Manages (ENNVVM), administered in 1990/91 by

the Direction de la Statistique in cooperation with the World Bank, collected information on health care utilization and expenditures from 3,400 households. Table A1 (in the appendix) shows the important similarities and differences in the health care questions included in these two surveys. While the length of the recall period for the prevalence of illnesses is comparable (one month in the DHS vs. 28 days in the ENNVN), the DHS included more specific questions on symptoms and birth deliveries than the ENNVN. However, the ENNVN asked more detailed questions on health insurance coverage, including the amount of household payments for insurance premiums and the level of reimbursements received by households from health insurance plans. Unfortunately, the only insurance questions contained in the DHS are whether insurance is the primary source of funds for each type of medical expenditure. Another limitation of the DHS is that it included questions only on the last health care visit in the month prior to the survey, while the ENNVN included questions on all health care visits over a two month recall period.

Role of Households in Health Care Financing

In recent years, an increasing number of studies from countries other than Morocco have applied National Health Accounts (NHA) analysis, which provides estimates of the sources and uses of funds in the health sector (see Berman 1997 for a review of NHA studies). The few studies that have conducted this more complete assessment of health care expenditures suggest that, even in countries where health care services are either free or nominally priced, the role of households is far larger than previously thought (Berman 1997).

The Ministry of Health (MOH) is currently in the process of designing and carrying out a NHA analysis in Morocco. While results of the full study are not yet available, preliminary estimates indicate households fund that 41 percent of health care expenditures come from households in the form of out-of-pocket payments (Ministry of Health, 1997).¹ The estimated public/private distribution of total health expenditures is consistent with previous research findings from other countries using national-level data. For example, Schieber and Maeda (1997) report that the income elasticity for the public and private

¹ The estimate of household expenditures used in the MOH study is based on data from the 1990/91 ENNVN described earlier in this paper.

components of health care expenditures is 1.21 and 1.02, respectively. This suggests that public health spending is more responsive to income differences than private health spending and is consistent with the fact that low income countries have a larger private share of total health expenditures (Shieber and Maeda 1997). For example, the percent of total health funds that come from households is 74 percent in Burkina Faso (Saurerborn *et al.* 1995) and 55 percent in Egypt (Berman 1997). The importance of households in the funding of health care not only suggests that households are willing to expend considerable resources on health care, but also underscores the importance of understanding the determinants of household health care expenditure.

Unfortunately, only a few studies have investigated the level and distribution of household health expenditures in developing countries. Most household-level studies of illness-related out-of-pocket expenditures are based on responses from rural areas (Parker 1986; Berman *et al.* 1987; Saurerborn *et al.* 1995; Saurerborn *et al.* 1996). However, the spending patterns of rural areas are likely to be quite different than those found in urban areas. In addition, most nationally-representative financial studies of health care expenditures focus only on the public sector despite the fact that policy decisions based only on public expenditure data can have severe long-term consequences. Because as much as 40-80 percent of total health expenditures may be excluded from such an analysis in many developing countries, the government's ability to affect health practices and expenditure patterns will be severely hampered if it makes policy decisions on this basis (Newbrander *et al.* 1994).

Determinants of Health Care Expenditures on Illnesses and Injuries

Frequency of Illness

Before presenting results on the level and distribution of household health care expenditures, we first provide findings on the underlying determinants on curative health care costs: the prevalence of illness and injuries among our study population, whether households seek out health care services, and whether these services are traditional or modern, or are provided by public or private practitioners.

Overall, 10.1 percent of the sample population were reported to have an illness or injury in the month prior to the survey (Table 1). This estimate includes both chronic and non-chronic illnesses, as well as mental illnesses, congenital anomalies, and pregnancy and delivery complications. Another finding is that individuals in urban areas are more likely to report a health problem than their rural counterparts (12.4 percent vs. 8.4 percent), and individuals living in better-off households were more likely to report a sickness or injury than individuals living in poorer households.² The higher likelihood of reporting health problems among individuals in urban and wealthier households holds for each of the age groups listed in Table 1. The reason for these differentials is not clear. One possible explanation is that poorer individuals and rural individuals differ in how they perceive symptoms of illness and injury from their wealthier and urban counterparts.

Health Care Utilization

Because socio-economic status and accessibility to health care services have been shown to be among the most important determinants of health care demand, we expected that service utilization would be higher among urban households than among rural households, and among high income households than among low income households. The percent of persons who were reported to seek any type of health care service is shown in Table 2. On average, almost two thirds (64.8 percent) of individuals who were reported to have a health problem sought out health care services. Health care utilization rates are higher for urban individuals than rural individuals (76.3 percent vs. 51.9 percent) and for wealthier individuals than poorer individuals (76.7 percent vs. 47.6 percent). Moreover, urban/rural differences in utilization are greater among individuals 24 years of age and younger than among older individuals.

In Morocco, the supply environment for health care services consists of both a public and a private sector. The public sector was first developed in the early 1960's in order to better respond to the population's demand for curative care and to address substantial public health problems. The private sector is quite substantial and consists of mostly of for-profit facilities and private practices. In 1995, there

² The DHS collected information on a number of important expenditure items, including housing, transportation, education, and clothing. We used this information to rank households into two groups: better-off households and worse-off households.

were 4,199 private medical doctors and 5,235 public sector physicians in the country (Royaume du Maroc, 1996). Traditional healers are also an important source of care, particularly in the rural areas.

Of those individuals who utilized health care services, 45.4 percent relied on public practitioners and 54.0 percent used private practitioners. As expected, rural individuals were more likely to use public services than urban individuals (52.1 percent vs. 41.4 percent); similarly low-income individuals were more likely to use public care than high-income counterparts (56.7 percent vs. 40.6 percent).

Only a small percentage of persons (0.6 percent) reported traditional healers as their provider of choice. This is lower than expected. We suspect that the wording of the questions in the DHS resulted in under reporting. Because the distinction between modern and traditional care is not always clear-cut in Morocco, it is possible that the category of private providers may include traditional healers. Moreover, individuals were only asked about one treatment episode with the previous month. As a result, those individuals who used both a modern and a traditional provider may have a tendency to report only using modern care.

Average Out-of-Pocket Health Care Costs

How much do individuals pay for public and private health care services in Morocco? Because user fees for publicly provided health care services are very low, we expected that out-of-pocket payments among individuals who choose public practitioners would be minimal. Table 4 reports the average expenditures among individuals who report utilization of consultations, drugs, laboratory exams, and X-rays. The results show that the average cost of a public consultation was a nominal 8 DH, compared to 102 DH for a private consultation.³

It should be noted that these averages include both those individuals who report paying monetary expenditures and those that do not. Table A6 in the appendix reports the percent of individuals who use public and private services and who report not paying user fees. For those who use public facilities for their initial consultation, over 93 percent report paying nothing for the consultation, 40 percent report paying no fees for lab tests, and 55 percent report paying no fees for X-rays. For individuals who use

³ Of the 555 individuals who report having a consultation with a public health care provider, only 36 report paying user fees.

private care for the initial consultation, an intriguing finding is that the percent who report no monetary expenditures for consultations is lower than the percent who report not paying for laboratory tests and X-rays. This may provide an indication that private practitioners may be using public facilities for laboratory tests and X-rays.

However, an unexpected finding is that even though user fees are very low in public facilities, individuals who seek health care from public providers incur substantial monetary costs. For example, among individuals who report initially visiting a public practitioner as a response to their health problem, the average cost of drugs, laboratory services, and X-rays was 181 DH, 250 DH, and 179 DH, respectively.

That public care is associated with substantial out-of-pocket costs suggests that many public consultations involve the purchasing of drugs and services in the private market. For example, an individual may consult a practitioner in a public clinic but purchase medicines from a private pharmacy, perhaps as a response to drug stock-outs. Consistent with this explanation are the results found in Table 5, which provides a percent distribution of out-of-pocket costs by type of service. For individuals who chose public practitioners, more than three-fourths of all out-of-pocket costs are for pharmaceuticals, compared to 57 percent for individuals who chose private providers.

Unfortunately, the structure of the DHS supplement on health care expenditures precludes us from definitively determining the frequency of this pattern of health care utilization among individuals who report seeking treatment from a public clinic provider. We do not have the ability to determine where individuals who report using a public facility purchased drugs and services. Each individual reported only where the first consultation took place and how much was spent for each of the types of services listed. Because of these limitations in the survey instrument, the average costs reported in Table 4 should be interpreted as out-of-pocket costs “associated” with utilizing the specific types of providers for an initial consultation rather than as the cost of the initial visit to that provider.

Table 6 shows average total health expenditures among individuals who were reported to be ill or injured, by urban/rural status and by socio-economic group. The results indicate that the average costs of

both public and private health care services are higher for individuals residing in urban areas than for comparable individuals living in rural settings. Moreover, wealthier individuals who sought out health care services reported higher out-of-pocket payments than poorer individuals. The reason why wealthier public facility patients report paying more for public services is unclear. Possible explanations are that higher income households are charged more for similar services, or that practitioners in government facilities may prescribe more expensive medicines for wealthy patients to purchase in the market. Poorer patients, on the other hand, may be given free government drugs, or may only purchase partial prescriptions, filling only one of medicines for partial prescriptions, or not purchasing medicines at all if given a prescription.

Source of Funds for Out-of-Pocket Payments for Health Care

What sources of funds do individuals tap in order to pay for health care services? Table 7 shows a percent distribution of individuals who report non-zero health care expenditures by the primary source of funds. Because the survey only allowed an individual to select one of three sources (family, insurance, gifts), our data portray only the most important source, and should not be interpreted as a percent distribution of expenditures by source of funds. The results indicate that health insurance is not a primary source of expenditures for most individuals who pay for health care. Less than 20 percent of individuals report insurance as the primary funding source for any of the line items. The family and gifts from other individuals are the primary source of funds, accounting for 87.3 percent of consultation costs, 88.4 percent of drug costs, 76.6 percent of laboratory costs, and 76.8 percent of X-ray costs.

Hospital Utilization

Because our data come from a random sample, only a small proportion report using hospital services. In fact, of the 1,225 persons who reported seeking health care services in the month prior to the survey, 91 persons were hospitalized. Table 8 reports the number of persons hospitalized in public and private facilities, as well as the length of stay, the average length of waiting time for admission to the hospital, and the average out-of-pocket expenditures for the hospitalization. Of those hospitalized, over 70 percent (66 individuals) utilized public services, and 30 percent utilized private services. Public hospitals

appear to be substantially more crowded than private hospitals, as the average waiting time for admission to a public hospital was 41 days, compared to less than three days for admission to a private hospital.

Average Out-of-Pocket Hospitalization Costs

As expected, the average cost of a hospitalization episode in public facilities was considerably lower than that in private facilities. On average, individuals paid 145 DH for public hospital care, compared to 2,419 DH for private hospital care (Table 8). Individuals report longer hospital stays in public hospitals, perhaps because of differences in both the quality of care provided and in the case-mix. The mean length of stay in public hospitals was 13.5 days, compared to 19.5 days in private hospitals.

Source of Funds for Out-of-Pocket Payments for Hospitalization

Earlier, we described that the family and gifts from individuals were reported to be the most important source of funds for out-of-pocket health care costs. While this finding is also true among individuals who were hospitalized, insurance plays a larger role in financing hospital costs. Table 9 shows that 42 percent of individuals report insurance as the primary source of funds for hospital out-of-pocket payments.

Determinants of Maternal Health Care Expenditures

In this section, we investigate the out-of-pocket costs incurred for antenatal care and birth deliveries and the underlying determinants of these expenditures. In addition to the questions usually included in the Demographic and Health Survey (DHS) questionnaire on the number and timing of births that occurred in the five years prior to the survey, the supplement on health care expenditures includes questions pertaining to the out-of-pocket costs for antenatal care and the delivery of the last birth. This section uses these data obtained from women with at least one birth as the unit of analysis.

Frequency of Births

Table 10 shows the percent of women who report at least one birth in the previous five years. Of the 2,736 women interviewed in 1995, 58.8 percent report having given birth in the recall period. Two-thirds of women residing in rural areas had at least one child, compared to one half of women in urban

areas. After controlling for age of the women, urban/rural differences among women 24 years of age and younger are negligible. However, rural women 25 years of age and older are considerably more likely to give birth than their urban counterparts.

Table 11 shows a percent distribution of women who had at least one birth in the previous five years by the year of the most recent birth. Of the 1,609 women who had at least one birth, more than one third (34.4 percent) report giving birth as recently as 1994 or 1995. The percentages fall to 22.8 percent in 1993, 19.2 percent was in 1992, 12.6 percent was in 1991, and 11.1 percent was in 1990.

Maternal and Child Health Care Utilization

Table 12 provides age-specific results on the percent of women who used modern antenatal care and birth deliveries, by urban/rural status. Overall, 51.3 percent of women received modern antenatal and 40.9 percent of women delivered with the assistance of a trained health care practitioner.

As expected, there were large urban/rural differences in the utilization of maternal health care. Utilization rates for both antenatal care and modern birth deliveries were more than twice as high in urban areas than in rural areas. Over 80 percent of urban women had at least one antenatal consultation, compared to 33 percent of rural women. In addition, almost three-fourths (74 percent) of urban women delivered with the assistance of a trained practitioner, compared to one-fifth (20 percent) of their rural counterparts. These urban/rural differences in health care utilization remain substantial after controlling for age.

Table 13 shows that government health care practitioners assisted a substantial proportion of birth deliveries in Morocco. Overall, 41 percent of women delivered with the assistance of a modern (public or private) provider. Over 58 percent of urban women and 19 percent of rural women delivered with the assistance of a government practitioner. Most births assisted by public practitioners were delivered either in a hospital (21 percent) or in a maternity clinic (6 percent), but a small percentage were delivered in the home of the women (8 percent). A private health care facility was the place of delivery for 16 percent of urban deliveries, and less than one percent of rural deliveries.

Average Out-of-Pocket Maternal Health Care Costs

Table 14 presents the average out-of-pocket expenditures for prenatal care visits, by type of provider and by urban/rural status. Unfortunately, the DHS did not include questions on whether the provider was public or private, or the location of the consultation. The estimates show a positive relationship between average expenditures and the training of the provider. On average, the cost of visiting a doctor was 80 DH, compared to 37 DH for a nurse, 5 DH for an assistant, and 8 DH for other types of providers. (Moreover, women who use practitioners with a higher level of formal training are more likely to report paying user fees for care, as shown in Table A7 in the appendix). As expected, antenatal consultations in urban areas are associated with higher out-of-pocket payments. The average costs of seeing a doctor and a nurse in urban areas was 89 DH and 44 DH, respectively, compared to 63 DH and 20 DH in rural areas.

Unlike antenatal care, the place where the woman delivered her most recent birth was included in the survey instrument. Questions were asked on whether the delivery took place in the woman's home or in a health care facility, and whether the provider assisting the delivery was public or private. Table 15 presents the average out-of-pocket payments for the most recent delivery by type of delivery, by place of delivery, and by urban/rural status. For normal birth deliveries, the average cost of a delivery assisted by a private provider away from home was DH 2,086, which is more than fifteen times the cost of a delivery assisted by a public provider in a hospital/clinic. For cesarean section deliveries, the cost of a modern private delivery was DH 5,547, compared to DH 300 in a public clinic and DH 130 in a public hospital.

An interesting finding is that deliveries assisted by traditional midwives are often more expensive than modern deliveries assisted by public practitioners. For example, the average cost of a traditional delivery outside the woman's own home was DH 182, compared to DH 135 in a public clinic and DH 86 in a public hospital.

The percent of women who report that they paid no monetary user fees for their deliveries is reported in Table A8 in the appendix. As expected, women who deliver in public clinics and delivery homes (53.2 and 73.3 percent, respectively) are less likely to pay fees than those who deliver in public

hospitals (41.4 percent). For those women who used private facilities, only 19 percent did not pay for services.

Source of Funds for Maternal Health Care

Of those women who report out-of-pocket payments for antenatal care and birth deliveries, the household was the most important source of funds for the overwhelming majority. Table 16 shows a present distribution of women who paid for antenatal care and birth deliveries by the primary source of funds. The household or family was the primary source of funds for 87.9 percent of women who paid for prenatal care and for 91.9 percent of women who paid for birth deliveries. Insurance was the primary source of funds for only 11.2 percent of women who paid for antenatal care and for 7.1 percent of women who paid for birth deliveries. As expected, insurance was a more important source of funds among urban women. Over 16.1 percent of urban women who paid for antenatal care and 12.7 percent of urban women who paid for birth deliveries reported insurance as the most important source, compared to 1.4 percent of rural women who paid from antenatal care and 0.7 percent of rural women who paid for birth deliveries.

Conclusions/ Policy Implications

Using the 1995 Morocco Demographic and Health Survey, which included a special supplement on health care costs, this paper presents a descriptive analysis of health care utilization and expenditures. Overall, 10.1 percent of the sample population reported having an illness and injury in the month prior to the survey. Almost two-thirds (65 percent) of these individuals reported utilizing health care services. In addition, 60 percent of women of reproductive age reported having a birth over a five year recall period, 41 percent of which delivered with the assistance of a modern birth attendant.

The results indicate that utilization of modern health care is substantially higher among individuals living in better-off and urban households than among their poorer and rural counterparts. In addition, government health care providers appear to be an important source of modern health care not only for poor households, but for better-off households as well. For example, over 40 percent of better off individuals sought out care from a government provider, compared to 57 percent of poorer individuals.

Individuals who use private health care providers incur substantially higher costs than those who use public providers. However, an unexpected finding of the study is the degree to which individuals who seek out public providers pay out-of-pocket expenditures, despite the fact that public care is free or nominally priced in Morocco. For example, for those individuals who used health care due to illness or injury, the average cost of a health care episode was DH 141 for individuals choosing public care, compared DH 478 for individuals choosing private care. Most of the costs incurred by individuals initially choosing government care is for drugs, laboratory tests, and x-rays. For women who delivered births, the average cost of a delivery assisted by government birth attendants was DH 100, compared to DH 2,086.

These findings provide an indication that individuals use private services as a complement to the initial public provider consultation. For example, individuals who visit a doctor in a government facility may also use the private sector for medicines, laboratory exams and x-rays. Because the DHS did not include questions on where each service (drugs, laboratory exams, or x-rays) was purchased, we are unable to determine the extent to which private services complement public services.

Also not included in the DHS instrument were questions on health insurance coverage. However, individuals who incurred out-of-pocket expenditures were asked which source of funds (family, gifts, or insurance) was most important. The results indicate that insurance coverage is not widespread in Morocco — less than twenty percent of individuals who paid for primary health care and 42 percent of individuals who paid for hospital services reported insurance to be the primary source of funds. The majority of individuals reported family members and gifts from other individuals in the community to be the most important source for out-of-pocket payments.

How can the government use the results of this analysis to formulate policies that will potentially improve health outcomes among the population? A country's health care reform options are enlarged if government health ministries have the ability to recover their costs. If households are able and willing to pay more for health care services in the form of user fees and/or insurance premiums, alternative financing strategies such as employer-based health insurance funds accompanied by co-insurance and quality

improvements may be potentially successful in improving the degree of cost recovery and service quality and efficiency.

The effect of user fees on health care utilization and health outcomes has been a subject of considerable debate in the past decade. Much of this debate has centered on the ability and willingness of households to pay larger out-of-pocket payments for health care. On one hand, the results of numerous studies in developing countries indicate that health care utilization rates among both poor and non-poor individuals would not be greatly affected by small increases in user fees (Shaw and Griffin 1995). Moreover, many studies also suggest that health care utilization would actually increase if increased user fees are accompanied by improvements in the quality of services (see Alderman and Lavy 1996 for an excellent review of the literature on this topic). On the other hand, other researchers have found that the price elasticity among the poor is substantial, which suggests that user fee schemes would hurt the low-income households more than high-income households (Gertler and van der Gaag 1990).

Would cost recovery strategies based on health insurance and user fees be successful in Morocco? Our findings clearly point out that the financial resources available for funding the health sector are greater than previous estimates indicate. Households in Morocco are already spending considerable amounts on health care. We have shown above that households of all income groups frequent both public and private providers despite the fact that private providers charge user fees that recover a substantial portion of their costs and that there are substantial costs to households associated with visiting a “free” public provider. That better-off households are heavy users of the public system indicates that carefully designed financing strategies may be effective in achieving a higher level of cost recovery.

While these findings are encouraging, more research is clearly needed on how households in the Morocco context will respond to health care reform initiatives. Important policy relevant questions include: how will co-insurance and other user fees in the public sector affect modern health care utilization and health outcomes, particularly among the poor?; to what extent are private employers willing to share the costs of providing health insurance with their employees?; are healthy individuals willing to pay for insurance premiums?; are individuals willing and able to pay user fees for a range of services, and if so,

how much?; and, does the institutional and managerial capacity necessary to administer procedures such as collection and billing exist in Morocco?

Because the consensus for health sector reform based on private insurance and user fees probably does not exist in Morocco, reform strategies should be attempted first through pilot studies to determine whether they result in their intended effects. If these pilot projects are successful, they would hopefully result in a consensus among the government, the private sector, international donors, health care providers, and the public-at-large to begin to implement an appropriate reform program on a larger scale.

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Table 1: Percent of persons reported to have any type of disease or health problem in the past month, by urban/rural status, by asset group

Age group	Total	Urban/ Rural Status		Asset group	
		Urban	Rural	Low	High
Total	10.1	12.4	8.4	8.2	12.1
0-4	15.9	20.1	13.6	13.8	19.1
5-24	6.7	8.6	5.3	5.4	8.1
25-34	10.5	11.6	9.4	8.6	12.0
45-54	14.7	18.2	11.9	11.2	18.0
65 +	16.1	22.0	12.1	11.3	21.1
Mean Age	24.8	29.5	26.4	23.4	26.2
Number	18,605	8,100	10,505	9,393	9,212

* Total number of people who were reported sick in the last month= 1,887, and not sick=16,726, total 18,613.

Table 2: Percent of persons reported to seek health care due to disease or health problems in the past month by urban/rural status and by asset group.

Age group	Total	Urban/Rural Status		Asset Group	
		Urban	Rural	Low	High
Total	64.8	76.3	51.9	47.6	76.7
0-4	58.9	74.5	46.4	43.4	75.4
5-24	59.6	74.1	43.1	40.8	73.6
25-44	70.3	77.6	60.6	55.9	78.2
45-54	71.3	79.3	61.2	56.2	80.0
65 +	66.7	76.4	54.4	45.7	78.3
Number	1225	766	459	367	858

Table 3: Percent distribution of persons who sought health care in the past month, by type of care utilized, by urban/rural status and by asset group

Type of Care	Total	Urban /Rural Status		Asset Group	
		Urban	Rural	Low	High
Total	100.0	100.0	100.0	100.0	100.0
Public	45.4	41.4	52.1	56.7	40.6
Private	54.0	58.6	46.4	41.7	59.3
Traditional	0.6	0.0	1.5	1.6	0.1

Table 4: Average out-of-pocket health expenditures by source of consultation and by type of service.

Type of Service	Total		Public		Private		Traditional		Self Care	
	N	DH	N	DH	N	DH	N	DH	N	DH
Total	1,888	217.6	556	141.9	661	478.7	7	132.4	664	22.0
Consultation	1,224	59.3	555	7.7	662	102.0	7	118.1	NA	NA
Medicine	1,343	208.7	444	180.7	638	290.9	1	100.0	260	55.1
Laboratory Tests	218	331.5	80	249.7	136	382.4	NA	NA	2	140.0
X-rays	290	346.9	86	179.0	204	417.6	NA	NA	NA	NA

Note: The calculation of mean expenditures includes all individuals who utilize each type of service, some of whom report no monetary expenditures.

Table 5: Percent Distribution of out-of-pocket health expenditures among individuals seeking health care, by source of consultation and by type of service.

Type of Service	Total	Public	Private	Traditional
Total	100.0	100.0	100.0	100.0
Consultation	17.1	4.1	20.1	89.2
Medicine	56.9	76.3	52.2	10.8
Laboratory Tests	10.6	12.7	10.1	0.0
X-rays	15.3	6.9	17.5	0.0

Table 6: Average health expenditures for persons reporting a health problem in the past month, by source of consultation, by urban/rural status, by asset group.

Type of Care	Total		Urban/Rural Status				Asset Group			
			Urban		Rural		Low		High	
	DH	N	DH	N	DH	N	DH	N	DH	N
Public	142.5	551	164.1	314	114.0	237	123.6	207	153.9	344
Private	481.6	655	518.9	444	403.1	221	411.0	153	503.1	502
Traditional	132.4	7	0.0	0	132.4	7	134.5	6	120.0	1
Self-care	22.0	664	38.5	238	12.7	426	12.2	404	37.3	260
Total	218.2	1,877	292.3	996	134.4	881	122.3	770	284.9	1107

Table 7: Percent distribution of individuals who paid for consultations, medicine, lab services, or x-rays, by primary source of funds.

Primary Source of Funds	Consultation	Type of Service		X-Rays
		Drugs	Lab Tests	
Total	100.0	100.0	100.0	100.0
Family	46.0	85.9	64.9	70.3
Insurance	11.4	11.6	19.7	17.8
Gift	42.6	2.5	15.4	11.9

Table 8: Average out-of-pocket expenditures, length of stay, and waiting time for persons hospitalized.

Type of Facility	N	DH	Length of stay Days	Waiting Time Days
Total	91	769.5	15.1	30.5
Public	66	144.6	13.5	41.0
Private	25	2,419.2	19.5	2.6

Table 9: Percent distribution of individuals who paid for hospitalization, by type of care and by primary source of funds.

Primary Source of Funds	Total	Type of Facility	
		Public	Private
Total	100.0	100.0	100.0
Family	38.5	26.0	52.0
Insurance	42.3	37.0	48.0
Gifts	19.2	37.0	0.0

Table 10: Percent of women who report at least one birth in the previous five years, by current age and by urban/rural status

Current Age	Total	Urban/Rural Status	
		Urban	Rural
Total	58.8	49.3	66.7
15-19 years	42.3	41.9	42.5
20-24 years	73.0	73.0	73.1
25-29 years	76.1	69.2	81.7
30-39 years	66.2	57.0	75.2
40-49 years	33.8	19.3	47.0
Number	2,736	1,242	1,494

Table 11: Percent distribution of most recent births in the previous five years, by year of birth.

Year of birth	Total	Urban/Rural Status	
		Urban	Rural
Total	100.0	100.0	100.0
1990	11.1	12.9	9.9
1991	12.6	14.2	11.5
1992	19.2	20.4	18.5
1993	22.8	21.1	23.8
1994	25.2	23.9	26.1
1995	9.2	7.5	10.2
Number	1,609	612	997

Table 12: Percentage of women who utilized modern antenatal care and birth deliveries, by age group and by urban/rural status.

Age in 1995	Modern Prenatal Care			Modern Birth Delivery		
	Total	Urban	Rural	Total	Urban	Rural
Total	51.3	81.0	33.1	40.9	74.4	20.4
15-19	51.1	84.6	38.2	44.7	84.6	29.4
20-24	48.1	78.7	32.2	47.3	76.4	32.2
25-29	51.9	82.6	30.6	46.1	79.8	22.9
30-39	53.1	82.1	31.4	39.9	72.0	16.0
40-49	49.2	75.4	39.6	29.2	68.6	14.4
Number	1,607	611	996	1,609	1,494	997

Table 13: Percent distribution of women with births in the past five years, by place of delivery, by urban/rural status.

	Total	Urban/Rural Status	
		Urban	Rural
Total	100.0	100.0	100.0
Modern Delivery	40.9	74.3	20.3
Public	34.3	58.5	19.5
Hospital	20.5	37.1	10.2
Maternity Clinic	6.3	11.1	3.3
Delivery Home	7.6	10.3	5.9
Private	6.5	15.9	0.8
Traditional Delivery	59.1	25.7	79.7
Own Home	57.8	24.5	78.2
Other Home	1.4	1.1	1.5
Number	1,608	612	996

Table 14: Average out-of-pocket expenditures per antenatal care visit, by type of provider, and by urban/rural status

Type of Provider	Total		Urban		Rural	
	DH	N	DH	N	DH	N
Total	56	814	68	487	40	327
Doctor	80	553	89	359	63	194
Nurse	37	11	44	8	20	3
Infirmirie	5	237	5	118	5	119
Other	8	13	0	2	9	11

Table 15: Average out-of-pocket expenditures for the most recent delivery, by type of delivery, by place of delivery, and by urban/rural status.

	Normal Delivery						Cesarean	
	Total DH	N	Urban DH	N	Rural DH	N	Total DH	N
Modern Delivery								
Public Hospital	86	297	94	204	68	93	130	27
Public Maternity Clinic	135	94	167	63	70	31	300	5
Public Delivery Home	30	120	22	62	39	58	NA	NA
Private Clinic	2,086	84	2,074	76	2,022	8	5,547	19
Traditional Delivery								
Own Home	26	916	100	145	12.6	771	130	27
Other Home	182	22	486	7	40.3	15	NA	NA

Table 16: Percent distribution of women who paid for antenatal care and birth deliveries, by primary source of funds

Type of Service	Type of Service	
	Prenatal Care	Birth Delivery
Total	100.0	100.0
Family	88.3	92.8
Insurance	11.3	7.2
Gifts	0.5	0.0

Table A1: Comparison of questions on health care utilization and expenditures: 1995 Demographic and Health Survey and 1990/91 Enquete Nationale Sur Les Niveaux

	DHS	ENNVN	Remarks
Survey Information			
Number of households	2,751	3400	
Year	1995	1991	
Type of sample	two-stage	two-stage	
Prevalence of Illnesses			
Recall period	30 days	28 days	
Type of illness specified	yes	yes	DHS has more specific information on symptoms
Birth deliveries	yes	no	DHS has data on the last 5 births
Severity of Illness			
Activity days missed	no	yes	
Utilization of Health Care			
Illnesses	yes	yes	ENNVN has two month recall
Birth Deliveries	yes	yes	
Prenatal Care	yes	yes	
Vaccinations	no	yes	
Dental	no	yes	
Type of Care Utilized			
Type of practitioner	yes	yes	ENNVN more detailed
Type of place/facility	no	yes	
Health Insurance			
Premiums	no	yes	
Other Out-of-Pocket Expenditures			
Consultation fees	yes	yes	
Drug fees	yes	yes	
Exam fees	yes	yes	
X-ray fees	yes	yes	
Operation fees	yes	yes	
Hospitalization fees	yes	yes	
Misc medical items	no	yes	
Source of Payments			
Health Insurance	yes	yes	ENNVN has amount reimbursed by insurance
Other sources	yes	no	
Socio-Economic Status			
Expenditures	yes	yes	ENNVN much more detailed
Income	no	yes	

Table A2: Percent of persons reported to be ill, injured, chronically ill, or have other health problems in the past month by urban/rural status and asset group

Age groups	Number	Total	Urban/Rural Status		Asset Group	
			Urban	Rural	Low	High
Non-chronic illness and injuries						
Total		6.9	7.8	6.2	6.1	7.7
0-4	2,220	13.6	17.0	11.8	11.8	16.4
5-24	8,575	4.9	5.8	4.2	4.2	5.7
25-34	4,773	6.9	7.3	6.5	6.3	7.4
45-54	2,245	7.5	8.1	7.0	7.2	7.8
65 +	795	7.8	9.9	4.6	5.9	9.8
Chronic illness						
Total		2.6	3.9	1.6	1.5	3.7
0-4	2,220	1.8	2.7	1.4	1.5	2.3
5-14	8,575	1.5	2.4	0.9	1.1	2.0
25-34	4,773	2.5	3.3	1.6	1.3	3.4
45-54	2,245	6.2	9.1	3.9	3.2	9.1
65 +	795	6.7	10.9	3.8	3.4	10.0
Others diseases *						
Total		0.7	0.7	0.7	0.6	0.7
0-4	2,220	0.4	0.4	0.4	0.5	0.3
5-14	8,575	0.3	0.4	0.3	0.2	0.4
25-34	4,773	1.1	0.9	1.3	1.1	1.1
45-54	2,245	1.0	1.0	1.0	0.8	1.1
65 +	795	1.6	1.2	1.9	2.0	1.3

Other diseases include: mental diseases, congenital anomalies, pregnancy and delivery complications, and non-defined.

Mean age total population = 25 years

Mean age among sick people = 28 years

Table A3: Percent who sought care for illness or injuries, chronically illness, or other health problems in the past month, by type of care, by urban/rural status and by asset group.

Type of Care	Total	Urban/Rural Status		Asset Group	
		Urban	Rural	Low	High
Ill and Injuries					
Total	100.0	100.0	100.0	100.0	100.0
Public	45.4	39.6	54.1	58.7	39.1
Private	54.2	60.4	44.9	40.5	60.7
Traditional	0.4	0.0	1.0	0.8	0.2
Chronically ill					
Total	100.0	100.0	100.0	100.0	100.0
Public	45.7	44.7	47.9	54.7	42.7
Private	53.7	55.3	50.4	43.2	57.3
Traditional	0.5	0.0	1.7	2.1	0.0
Other diseases					
Total	100.0	100.0	100.0	100.0	100.0
Public	44.8	43.8	46.2	40.0	47.4
Private	51.7	56.3	46.2	50.0	52.6
Traditional	3.4	0.0	7.7	10.0	0.0

Table A4: Average health expenditure for individuals reported to be ill or injured or have other health problems in the past month, by type of service

Type of Care	Total	Consultatio n	Drugs	Laboratory	X-Rays
	DH	DH	DH	DH	DH
Total	217.57	35.9	127.5	22.4	32.2
Public	141.85	5.9	108.8	18.0	9.7
Private	478.65	96.6	250.9	48.5	83.9
Traditional	132.42	118.1	14.3	0.0	0.0
None	21.98	0.0	21.6	0.4	0.0
N	1,888	1,883	1,885	1,886	1,884

Note: This table is for all the people who had a disease, without selection of who sought for care.

Table A5: Average health expenditures of individuals reported to be ill or injured, chronically ill, or to have other health problems in the past month by urban/rural status, by asset group.

Type of problem	Total	Urban/Rural Status		Asset Group	
		Urban	Rural	Low	High
Illness and injuries	207.4	305.5	111.8	107.6	288.3
N	1,284	633	649	574	708
Chronically illness	392.1	407.3	363.1	187.1	478.1
N	480	315	165	142	338
Other diseases	234.9	412.2	98.8	107.5	336.1
N	122	53	69	54	68

Table A6: Number of individuals who report seeking curative health care services and paying no monetary expenditures.

Type of Service	Total			Public			Private		
	N	Value 0	Percent	N	Value 0	Percent	N	Value 0	Percent
Consultation	1,224	566	46.2	555	519	93.5	662	47	7.1
Medicine	1,343	42	3.1	444	31	7.0	638	10	1.6
Laboratory Tests	218	56	25.7	80	32	40.0	136	24	17.6
X-rays	290	70	24.1	86	47	54.7	204	23	11.3

Table A7: Percent of women who used antenatal care and paid no monetary expenditures, by urban/rural status and by type of practitioner.

Type of Provider	Total		Urban		Rural	
	N	Percent	N	Percent	N	Percent
Total	814	49.1	487	42.9	327	58.4
Doctor	553	28.8	359	25.3	194	35.1
Nurse	11	54.5	8	50.0	3	66.7
Infirmirie	237	94.5	118	94.9	119	94.1
Other	13	84.6	2	100.0	11	81.8

Table A8: Percent of women who had normal deliveries away from home and who had no monetary expenditures, by place of delivery, and by urban/rural status.

	Total		Urban		Rural	
	N	Percent	N	Percent	N	Percent
Public Hospital	297	41.4	204	45.6	93	44.1
Public Maternity Clinic	94	53.2	63	49.2	31	48.4
Public Delivery Home	120	73.3	62	93.5	58	69.0
Private Clinic	84	19.0	76	21.1	8	0.0