PN-ABZ-304
91899

HEALTH CARE UTILIZATION AND PROVIDER CHOICE IN JAMAICA: AN INTERIM REPORT

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March 1993

Acknowledgements: We thank the Planing Institute of Jamaica for making the data available and USAID, Jamaica.

Health Care Utilization and Provider Choice in Jamaica

An Interim Report

INTRODUCTION:

In most developing countries, governments are involved in the financing the provision of health care services at nominal cost to the population at large. However in recent years, increasing population growth and budgetary considerations have brought into question the continued viability of this practice. Traditional arguments against charging user fees have centered on their effect on access to health services for the poor and other vulnerable groups. In contrast to this concern, anecdotal reports indicate that there is substantial use of private health care services by large sectors of the population (including the poor), suggesting that people are willing to trade higher fees for higher quality of care.

As in many developing countries, Jamaica's health care system was originally financed entirely by the government. With the economic crisis of the early 1980s, Jamaica established small user fees in public health facilities. This did not substantially reduce utilization; moreover many who could afford to do so turned to the private sector for supposedly higher quality health care services. The apparent lack of adverse effects and continued monetary pressures have led the Jamaican Ministry of Health to consider raising fees further. However before embarking on any specific

course of action, much more information (collected in a systematic manner) about the determinants of health care utilization and provider choice needs to be analyzed.

This research will provide information about the determinants of health care utilization and provider choice, focusing on both demand (individual and family characteristics) and supply side characteristics (time and money costs and community characteristics). The specific objectives of this preliminary report are to determine:

* How does the incidence of illness in Jamaica vary for different age, sex, education, income and location characteristics.

* Conditional on reporting an illness, what proportion of individuals in different socio-demographic groups seek health care services.

*What providers (public vs private and level of facility) do individuals choose to receive their care and what determines this choice.

* How do characteristics such a travel time, waiting time and costs influence the decision to seek care and the provider choice?

* How do these patterns differ for curative and preventative services.

The above information in turn will help determine the appropriate level of fees, fee exemption policies to protect the poor and other vulnerable groups, and the most cost effective method for improving quality of care.

DATA:

This report will analyze data from the Jamaican Survey of Living Conditions, focusing primarily on the third round (1989) which was collected by the Statistical and Planning Institutes of Jamaica, with assistance from the World Bank's Living Standards Measurement Studies division and RAND. This round has broad-based economic, demographic and health information on 4,000 households (5481 individuals aged 0-13yrs and 11,115 individuals aged 14yrs and over). The health questionnaire is a nationally representative sample which contains information on the frequency of illness in the month prior to the survey, the use of health care services, both preventative and curative, the type of provider used, travel time, waiting time and costs of services. For the latter three variables, data was combined from multiple rounds to increase sample variation.

METHODOLOGY:

Our analytic strategy is as follows. We begin with univariate and bivariate analyses of how illness rates, health care utilization and provider choice differ by age group, gender, education, household per capita expenditure, regional location and community structure variables. Although these results are informative, due to possibility of confounding effects, we estimate multivariate econometric models which control simultaneously for age, gender education and other socio-demographic factors. For expositional purposes we then calculate simulated predicted probabilities for our outcomes of interest for specific profiles of individuals.

In addition to the above "demand" side factors, we investigate variation in supply side characteristics which may affect health services utilization and provider choice such as travel time, waiting time, and costs of services. In this aspect of our analysis we explore both time trends and cross-sectional variation.

The next stage of our analysis (not included in this report) will include the incorporation of time and money costs and quality of health services in our models of health service use and provider choice. In earlier work (see attached paper "Public and Private Delivery of Primary Health Care Services in Jamaica: A Comparison of Quality in Different Types of Facilities") we have shown that there is significant variation in different measures of quality by

provider and by level of facility. We are currently working on incorporating these quality measures into our models of health service use. This is a complex methodological exercise as we will be merging data from two different sources, the health facility survey and the JSLC and there are a number of difficult conceptual issues. In particular we need to create a manageable set of quality indices from the wide array of data available, we need to decide about the appropriate universe of providers for different respondents and we need to construct aggregate measures of quality across providers.

RESULTS:

Demand Side Variables:

A. Univariate and Bivariate results

Some 14.5 percent of Jamaicans had a reported illness or an injury in the one month previous to the November, 1989 JSLC survey. Not surprisingly there exists a strong age, and also gender, pattern as shown in Figure 1a. Preschool children and the elderly (60 years and older) have the highest rates, 22.7 and 29.7 percent respectively. The rates drop for school-aged children and further for adults between 14 and 49, before climbing again for those in their 50s. As we found in earlier analyses, adult women report higher rates of illness, consistent with their reporting worse general health and more problems of physical functioning.

There is considerable regional variation in the incidence of illness (Figure 1b); rates in Hanover, Westmoreland and St. Elizabeth being under 11 percent while in Clarendon, Manchester, St. James, St. Ann and St. Thomas rates are above 18 percent. In Kingston and St. Andrew illness rates run at 12 percent.

Among adults, the most important socio-economic correlate of illness seems to be education. As shown in Figure 1c, illness rates are over 25 percent for individuals with under 6 years of schooling falling to 13 percent for those with exactly 9 years and under 10 percent for those with greater than 9 years. Now some of this bivariate relationship is caused by the less well educated being older, however as we will see in the multivariate analyses, education still has an important positive effect on reducing the likelihood of a reported illness for adults. It is interesting to note that among children, maternal education has little effect on the propensity to report an illness. It may be that reporting biases are greater for child illness than for adults. Part of the reason may be that adult illness is self-reported whereas child illness is reported by the mother. Household percapita income, as proxied by percapita expenditure, as a rather weak relationship with illness (Figure 1d). If anything there exists a small, positive relationship between income and illness. It is usually the case that more experienced (and thus older) prime-aged workers have higher earned incomes than do young workers and the bivariate association with illness may in part reflect that age effect.

Conditional on reporting an illness half of all individuals (children and adults) go to a health provider within the past month for curative care (an average of 1.3 to 1.7 visits depending on the age group). Of those who do, 40 percent go to a public facility (21 percent to a hospital and 19 percent to a clinic) and some 60 percent go to a private provider, most of those to a private doctor (Figures 2a-2i). When we break this down by age and gender we find that children are more likely to go to public providers (55 percent), while adults tend to use the private sector. Among those in their 50s who use public facilities, men are more likely to use a hospital compared to a clinic than are women.

Roughly 16 percent of all adults and children go to a provider for preventive care; 42 percent to a public provider and the rest to private ones. Within public and private categories, 3/4 of those going to a public provider for preventive care go to a clinic, while the overwhelming cases of private care seekers go to a doctor. When we break this down by age group, we find that children under 5 years are much more likely to get preventive care, presumably related to their receiving immunizations. Only 6 percent of school-aged children are reported to receive preventive care. For young adult males this remains the case until they age past 30 years, when the preventive care rates double to 12 percent. For young women, the rates are much larger, 19 percent for 14 to 29 year olds, probably reflecting maternity-related care. The use rates of women in their 30s and 40s are also high (25 percent),

double the rates of men in the same age group. The female use rates remain at 25 percent during their 50s, while for men the rates rise slightly to 14 percent. It is only those who are in their 60s are higher whose preventive care use rates rise to 40 percent for women and to 30 percent for men.

By percapita expenditure, adults switch from public clinics and hospitals into private sector use for their curative care. The effect seems nonlinear, however, the switch being especially strong at the top of the PCE distribution. Within PCE groups being covered by health insurance makes a difference in choice of provider. For the top expenditure group of households, 90 percent of individuals who make any visits for curative care and have insurance coverage go to private providers, compared to 66 percent among individuals without insurance. Among lower income households (fewer of which have insurance coverage for their members), the insurance effect seems to be bigger than for the high PCE households; for adults, the differential is 90 versus 58 percent.

For children the cell sizes are small so it is hard to see patterns, however it also appears that very high income families switch into private sector curative care, if they receive any. Insurance makes a bigger difference in provider choice for children than for adults; 52 percent of children in high PCE households without insurance go to private providers compared to 96 percent among high PCE households with insurance. When we stratify by

education (of the adult or of the child's mother) the results don't seem as strong, but a small tendency exists for the most highly educated persons (with more than 9 years of schooling) to go to private providers as well.

Children with more highly educated parents are much more likely to receive preventive care; for instance, 14 percent of children of mothers with 6 or less years of schooling get any preventive care, while for mothers with over 9 years, 30 percent of their children obtain such care (Figures 3a-3i). For adults education doesn't seem to have such a large impact on preventive care use, however household percapita income does.

Breaking down preventive care use by type of provider, we see that among preschool children 70 to 75 percent of use is of the public sector, usually clinics. This shifts dramatically to the private sector for school-aged children, particularly girls. Among women 14-29 use shifts back to the public sector, much of this apparently driven by use of maternal care services. Among men of the same ages, use is very heavily in the private sector. Women aged 30-49 switch their preventive care use back to the private sector (nearly 2/3) and for men of the same age, private sector use accounts for nearly 80 percent. Private sector use remains at these levels for both men and women in their 50s, but declines some for older adults. For women, especially, aged 60 or over, use of preventive care in public hospitals rises, to 17 percent.

Percapita expenditure is highly related to use of private preventive care, conditional on having any visits, both for adults and children. As is the case for curative care, having insurance coverage makes a difference in which type of provider is chosen. Among adults in high PCE households 87 percent of those with insurance go to private providers as against 71 percent of those without insurance. For adults in lower than the top PCE group the difference is much larger: 83 versus 49 percent. For children, too, insurance coverage makes a difference; in the top PCE group 92 percent of covered children go to private providers, only 60 percent of non-covered children do. As was the case for curative care, no strong patterns of provider choice emerge with respect to education (either of the own person or the mother), so the income effect is not reflecting an education effect (remember, though, that maternal education is strongly related to whether a child gets preventive services at all).

Conditional on an adult going to a public health care provider for either curative or preventive care, it is interesting to note that half report paying anything. By contrast, nearly 90 percent of those going to a private provider report paying fees (reported fees do not include insurance premiums). Of those who do report fees at public clinics, only 32% report paying the official price of $5.

B. Multivariate results of Demand Side Variables:

We begin this section with models of the probability of reporting an illness. We then estimate separate models of whether a visit to a particular type of facility is made, conditional on being ill.[1] With these models it is possible to simulate changes in the probability of going to various types of facilities as age structures, incomes or insurance coverage changes. Since it is also of interest to predict the extent of usage, we predict the number of visits conditional on any being made. We also examine the probabilities of paying in cash if a visit occurs and the amount paid.

As covariates we include a number of individual, household and community-level variables. A series of age-gender specific dummies are included. Household percapita expenditure is included as a measure of long-run resources. Own education is also included; this will affect the health risk behaviors of people and the efficiency with which households allocate resources to health, including their ability to acquire and use information. Regional dummy variables are used to capture unmeasured effects at that level. In the illness equations we construct constituency-level variables which measure the incidence of reported illness for age-

[1]For now we estimate separate probability models for each choice.

gender groups across five rounds of the Jamaican SLC.[2] Similarly, we construct pooled means of the proportion of households using different types of drinking water sources and types of sanitation.[3]

1. Illness

Table 1 reports the illness equations for a pooled sample. Reported illness rises strongly with age for women, while reported illness for males rises more slowly with age and is less than for women. A woman over 60 years is three times more likely to report an illness over the past one month than a woman aged 14-20 (27 vs 10 percent). For men, the probabilities of illness rise from 6 to 21 percent from youngest to oldest age group. Education has a statistically significant, but small, effect on illness probability, while percapita expenditure does not have a measurable impact. No differences in illness rates appear across three broadly defined regions, however constituency-level illness rates do matter, especially among young adults and older males. This effect may reflect the influence of the underlying disease environment, but may also reflect differences in regional income levels, that household-level percapita income does not pick up.

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[2]For each round, we calculate the constituency mean proportion reporting an illness during the preceding month for different age-gender groups. We then average these over the five rounds, covering a two and one-half year period. In almost all cases there are sufficiently large number of observations per constituency to compute meaningful averages. In the few cases in which that is not the case we average the particular constituency with an adjacent one.

[3]Arguably these proportions are not independent across rounds.

2. Curative Care

Of those adults who report an illness, 16 percent went to a public health facility, 60 percent of those to hospitals and 40 percent to health clinics. Table 2 and reports probit equations explaining the determinants of public facility use for curative care. Figures 4a-4c and Tables 4a-4e report simulations of the effects of age, region, education, household expenditure and having health insurance. Women are more likely to seek curative health care than are men (Figure 4a).[4] The age pattern is distinctive: use is high for young women, presumably of child bearing age, falls for 30 to 49 year olds and rises with subsequent aging. For men utilization rises systematically with age. Public facilities are used more by young women, aged 14 to 29, those over 60 and men in their 50s. For example, a young or old woman reporting an illness has a 20 percent probability of using a public facility compared to 12 percent for a woman between 30 and 50 or for men under 50. In the case of young women this reflects the importance of the public system in providing birthing services.

Income and insurance turn out to be important predictors of health care use. Persons from higher percapita expenditure households have a higher probability of seeking curative care if they are ill. Expenditure has even a larger effect on whether one goes to a public or private provider, as can be seen in Figure 4c.

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[4]This has also been found in the United States; Sindelar (1983).

Having health insurance coverage has a small positive effect on whether to seek coverage, and a large positive impact on private provider use. The education effects are not significantly different from zero, although the point estimates are positive on whether care is sought and from the private sector. Persons living in the south and northeast regions are less likely to seek care than those living in the west or southeast. Residents of those regions are much less likely to use public facilities.

Although there exists a standard fee for outpatient use ($5) about only half of those who go to public facilities claim to have paid anything. Women aged 14 to 29 are less likely to report having paid a fee than other groups. For instance, young women who use public facilities have only a 30 percent probability of paying any fee, compared to over 50 percent for most other groups. What this reflects is unclear. Persons in the west region are less likely to pay fees. Higher household expenditure and being covered by health insurance makes it more likely that a fee is reported. It may be then, that doctors at public facilities use their knowledge of a patient's ability to pay in deciding whether to apply the standard charges. Note that these results concern whether the individual pays anything at all. Conditional on reporting that a fee was paid, none of our measured characteristics is able to account for the quantity paid. The mean amount is only $10, with a standard deviation of $3.85.

Private facilities are used by 1/3 of those who report an illness. Table 3 reports results for use of private facilities. Women aged 50 and older are more likely than other groups to use private facilities. Household percapita expenditure and health insurance coverage both induce seeking treatment at private facilities as does residing in a large household. Of those who go to private facilities, 90 percent report paying some fee. Persons with higher education and higher percapita household expenditure pay higher amounts, as do those living in the east and west regions. Persons with health insurance pay less, but that is an out of pocket expense; total costs including the insurance company share may not be less.

3. Preventive Care

Projecting the demand for preventive care for adults is also important. Roughly 20 percent of adults seek preventive care over a year's period. Of those some 60 percent go to private facilities and the remainder to public ones. Among adult public use, almost 70 percent is of clinics. Men are less likely to seek public preventive care than 14-29 year old women. Among age groups, men and women over 60 are more likely to use public preventive care than younger persons. Controlling for age and gender, those with less household expenditure and without insurance are more likely to use public preventive care.

Among those getting public preventive care, half pay fees. Younger men and older women are more likely to report having paid a fee than younger women or older men. Persons from higher expenditure households are more likely to pay and people living in the west are less likely. Individual characteristics have little to do with the amounts paid, provided something was paid.

Private preventive care is more heavily used by older women. Men, except for those over 60 tend to use private care less. Persons in the east and south use private care more often, while those in the west use it less. As is true for curative care, higher household expenditures and being covered by health insurance moves people into private care; indeed the effects are larger for preventive care.

Of the 14 percent who report not paying out of pocket fees, the biggest factor seems to be having health insurance, which indicates that insurance must be picking up most of the payment. For those who pay, household expenditure and living in the east seem to have the largest positive impacts on the amounts paid, having insurance reduces out of pocket expenses. Women pay more per visit than men; the reasons may have to do with the types of tests or procedures being performed on men and women at private clinics, but this merits more investigation.

Supply Side Variables (Money and Time Costs of Services):

On the average, the cost of curative visits at private doctors, health centers, and hospitals has been increasing steadily in Jamaica. The overall median cost per visit was 40 Jamaican dollars in 1988, 50 Jamaican dollars in 1989, 60 Jamaican dollars in 1990, and 77 Jamaican dollars in 1991. At the regional level, the cost per visit has also been rising gradually at private medical facilities in all four regions of Jamaica. As shown in Figures 5a-5d, over the four indicated years the distribution of cost per visit has gradually shifted to the high end of cost in the Northeast, South, West, and Southeast. In 1988 the median cost per visit was 50 Jamaican dollars for the Northeast, 40 Jamaican dollars for the South, 40 Jamaican dollars for the West, and 40 Jamaican dollars for the Southeast. By 1991 the median cost escalated to 80 Jamaican dollars in the Northeast, 60 Jamaican dollars in the South, 100 Jamaican dollars in the West, and 75 Jamaican dollars in the Southeast

Unlike the private medical facilities, public hospitals and health centers showed no increase in their cost per visit for curative care between 1988 and 1991. Figures 6a-6d shows that the overall median cost per visit at public hospitals was five Jamaican dollars between 1988 and 1990 and zero in 1991. (The zero median cost in 1991 for all four regions could be the result of report biases.) As for the trend of cost at public health centers, figure 7a-7d shows that between 1988 and 1991 the overall median cost was

consistently at zero. Between 1988 and 1991, above forty-six percent of the population in the Northeast did not pay for curative care at public health centers . As for the South, fifty-eight percent of the population and above also paid nothing for the care they received. In the West, above sixty-five percent reported zero cost; in the Southeast, above forty-six percent reported no cost.

Although the visit costs for curative care at private medical facilities were much higher than those at public facilities, our analysis from JSLC Survey (1989-2) shows that sixty percent of those who attended a health facility went to a private provider and forty percent went to a public provider. There are two possible reasons that could explain the high demand for private providers relative to curative care.

The first reason may be accessibility, the proximity of the medical facilities to an individual's home. Perhaps, in general, private providers are closer than public providers. According to our analysis, however, the overall median distance of a nearest public health centers is 1.5 miles from an individual's home; whereas a nearest private doctor is 2.5 miles away. The overall median distance for public hospitals is 7 miles away; private hospitals is 10 miles away. Figure 9 indicates that for all regions public health centers are nearer than private doctors, and in the Northeast and the South private hospitals are farther than public hospitals. Thus, this shows that, on the contrary to

our initial assumption, accessibility may not affect people's choice of a provider.

The second possible reason is the differences in the quality of care between public and private providers that perhaps motivated the majority of the people in our samples to choose private providers over public ones. The quality of care can be defined by a spectrum of infrastructure, medical supplies, medical equipment, staffing, etc. At the present moment, however, we have available only the medians of waiting time and the percent figures of those who actually saw doctors and nurse practitioners when attending a public or private provider. Therefore, these statistical figures could be used temporarily as measures of quality of care at each provider type. From the Jamaica Survey of Living Conditions, 1989-2, we found that the overall median of waiting time for curative care at private hospitals, doctors, and health centers was forty minutes; whereas, the overall median waiting time at public health centers was sixty minutes and ninety minutes at public hospitals. As for the staffing quality, more than ninety-nine percent of the patients who attended a private medical facility for curative care was tended by doctors and nurse practitioners. At public health centers, however, only sixty-nine percent of the patients was seen by doctors and nurse practitioners, and ninety-six percent saw doctors and nurse practitioners at public hospitals.

The above statistical figures for waiting time show that the waiting time at public medical facilities is more than twenty minutes longer, on the average, than private facilities. The staffing quality between the two sectors also differ, for only sixty-nine percent of the patients who attended a public health center was tended by doctors and nurse practitioners comparing to more than ninety-nine percent who went to private doctors and health centers. Therefore, based on these statistical figures the private medical facilities appear to be offering better care than public facilities.

There also seems to be regional differences in the quality of care among public medical facilities. As shown in Figure 10, the waiting time at public health centers in the West and the Southeast is sixty minutes comparing to ninety minutes of waiting time in the Northeast and South. The lower waiting time at a public health center in the West and the Southeast could indicate that those facilities perhaps are more efficient in terms of staffing. In addition, in the Southeast the percentage of patients who actually saw doctors at public health centers is above the overall median which is seventy-six percent as opposed to the overall sixty-nine percent (Figure 11). Therefore, these factors may be suggesting that on the average the public medical facilities in the Southeast are superior than those in other regions; and those in the West, on the average, may rank higher than the rest. Figure 4c, which is the result of regressed

probabilities of private and public medical-facility usage conditional on illness-- controlled for age, gender, percapita income, education, and health insurance-- also indicated that people in the West and Southeast are more likely to go to public providers than those in the other two regions.

Conclusion and Policy Significance:

In the above analysis, we have explored a number of important determinants of health care utilization and provider choice. However, despite controls for age, sex, education, income, health insurance, and community infrastructure there remain significant regional differences in levels of health services utilization and provider choice. This pattern suggests that supply side characteristics such as time and money costs and quality of services have an important role in determining patterns of health service use. Our initial analysis above indicates that there is measurable regional variation in time costs (travel time and waiting time) and directs costs (particularly for private providers who account for 50% of health service use even in the lowest 20 percent of the income distribution). Moreover our results show that there have been significant changes in direct charges over the period 1988-1991.

As mentioned earlier, the next stage of our analysis will involve the incorporation of time and money costs and measures of quality of services into our models of health service use and

provider choice. This more comprehensive analysis which will include both "demand" and "supply" side characteristics will allow us to finally fulfill the underlying goals of this research which are to determine:

* How much specific increases in fees, changes in quality, and improvements in access affect utilization of public health care services.

* Whether individuals who choose not to use public medical care in response to fee increases switch to private alternatives or go without care.

* Whether the above items vary for different age, gender, income, education groups and different locations (urban vs rural and different regions).

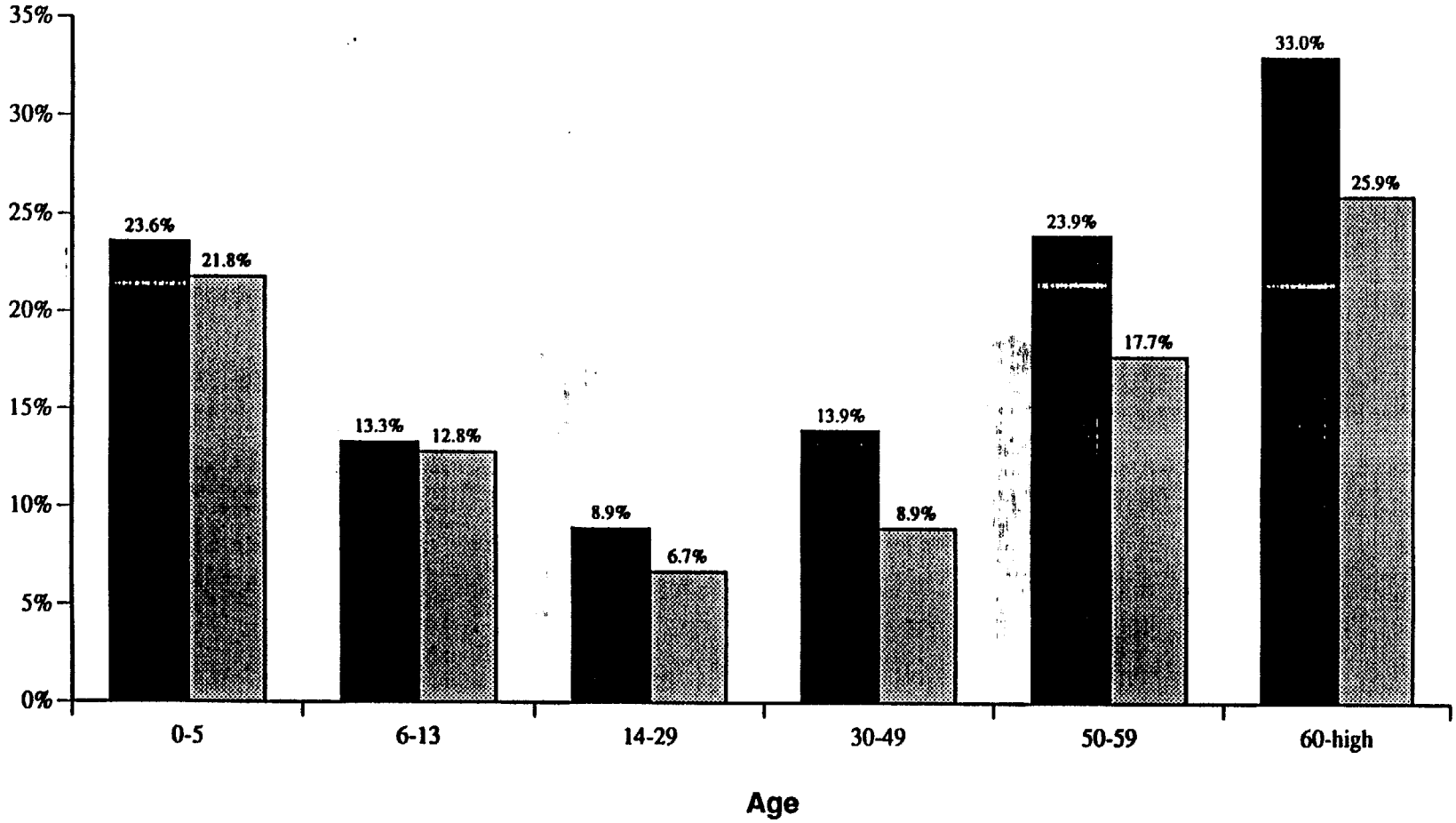
* Whether the above items vary for preventative and curative care services.

* What the cost recovery implications are for alternative fee structures and what this suggests about financing strategies.

Finally, the results of this research will enable the Jamaican Ministry of Health to determine the effects of raising health care fees and to develop and institute plans to assist those who would be adversely affected.

Figure 1a

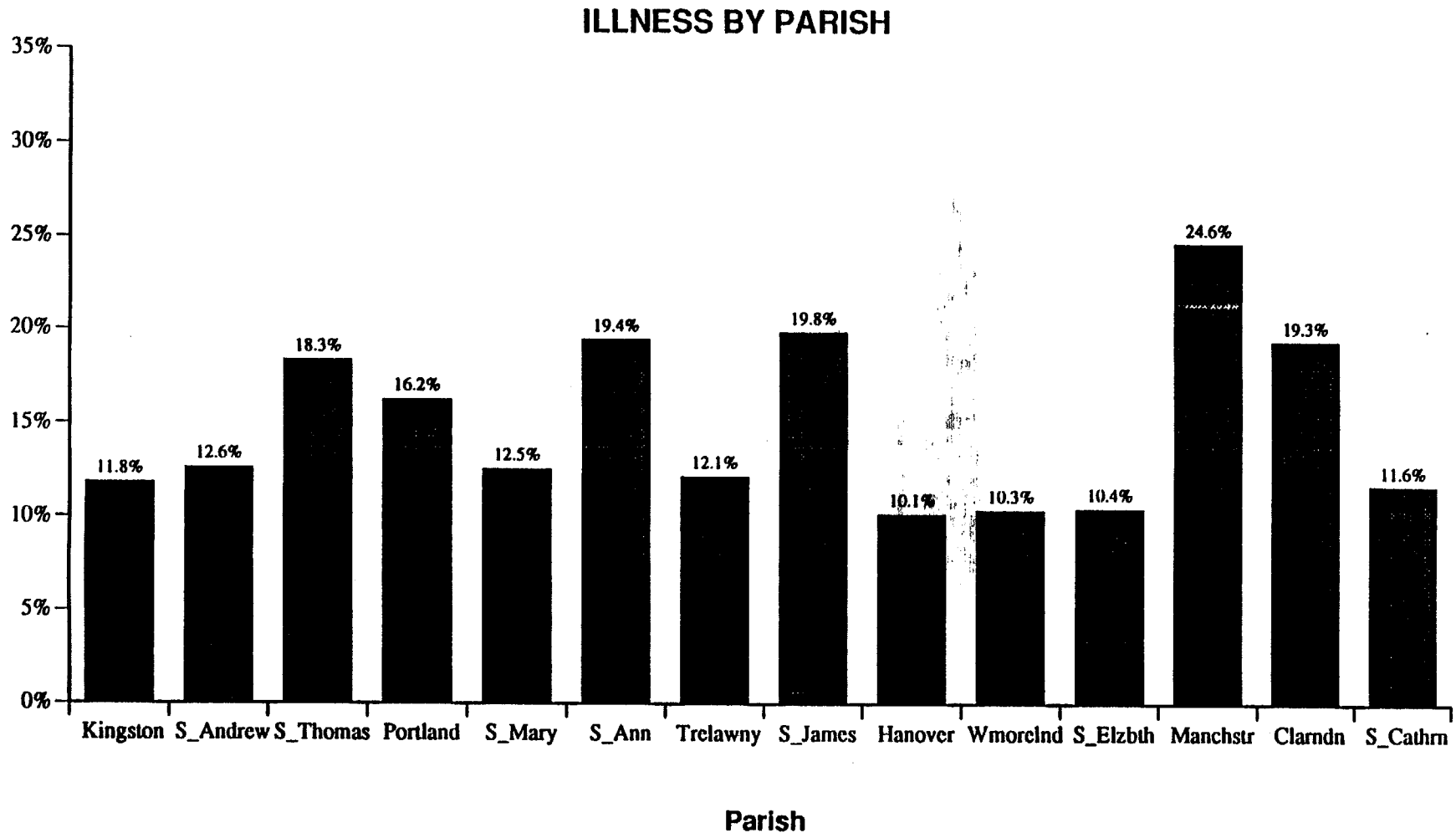
ILLNESS BY SEX AND AGE



Female Male

Jamaica Survey of Living Conditions

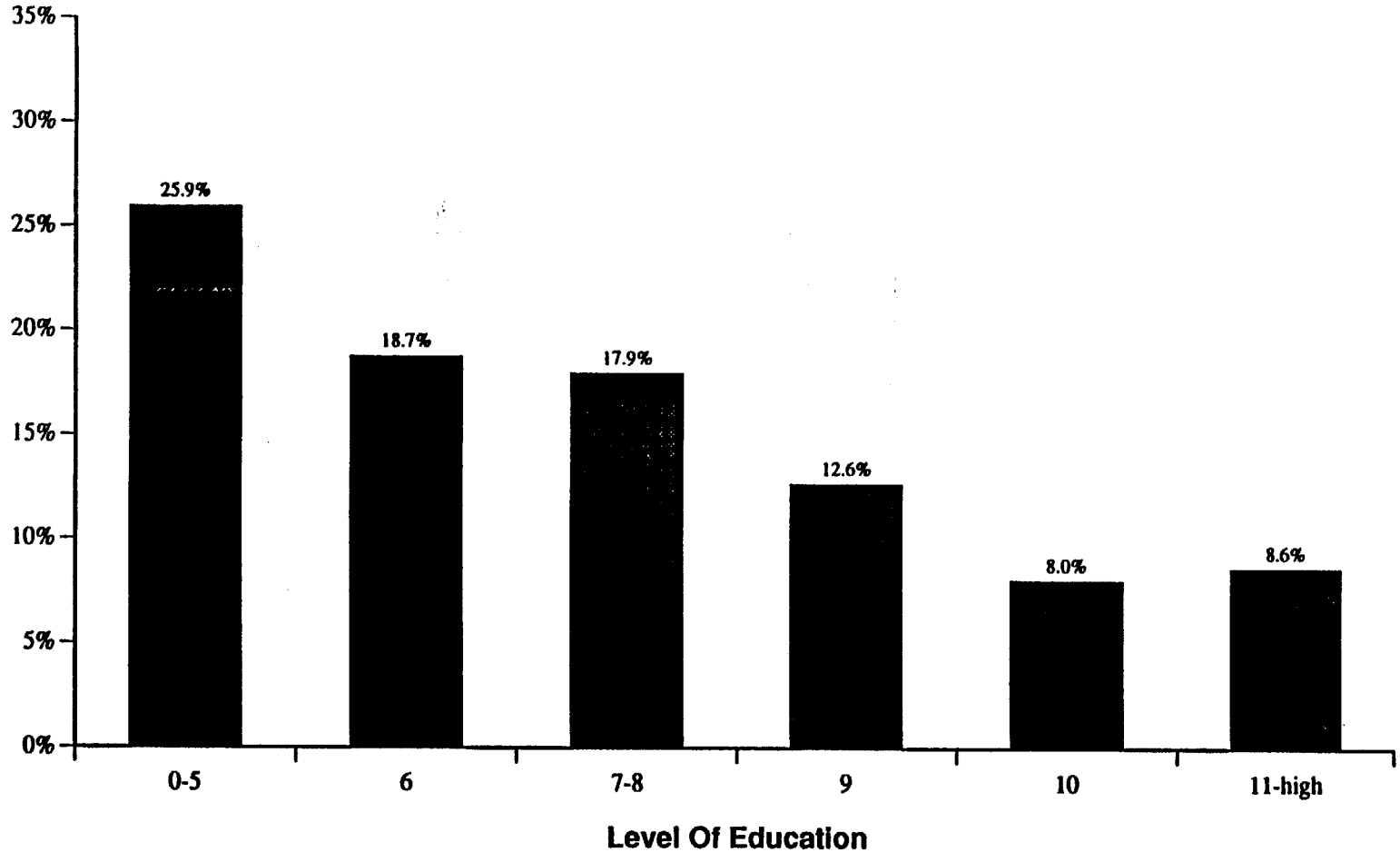
Figure 1b



Jamaica Survey of Living Conditions 1989-2

Figure 1c

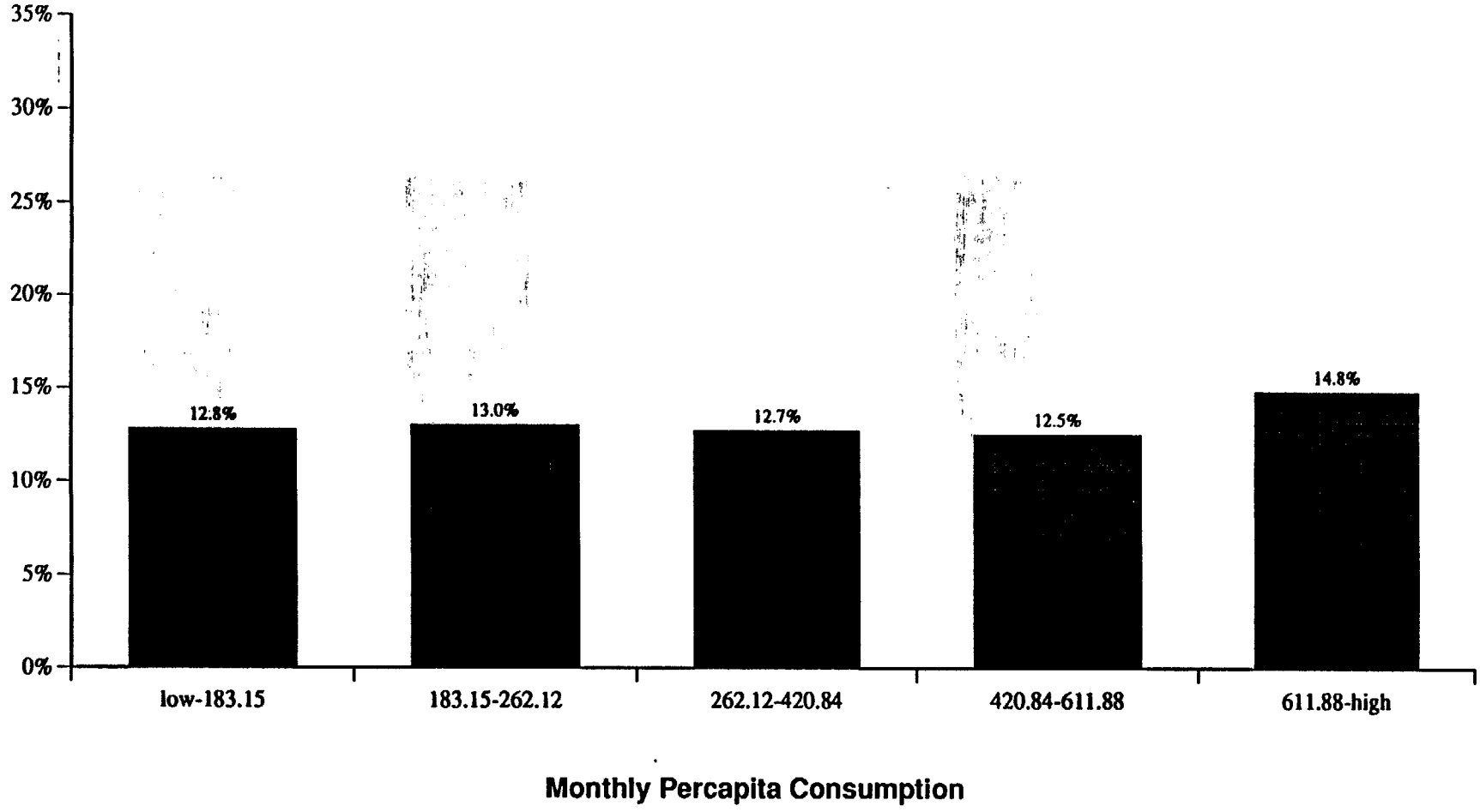
ILLNESS BY LEVEL OF EDUCATION : 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 1d

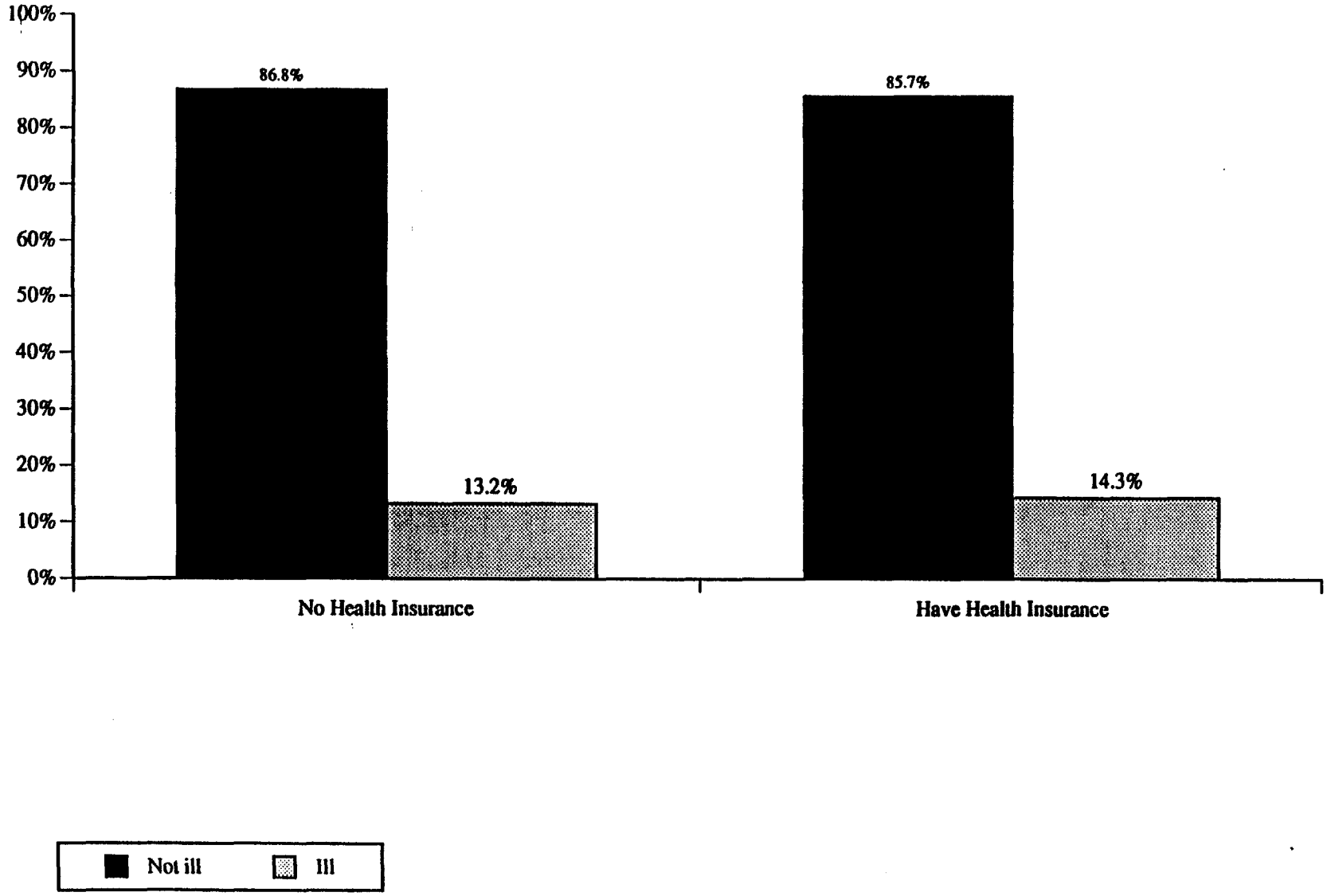
ILLNESS BY MONTHLY PERCAPITA CONSUMPTION: 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 1e

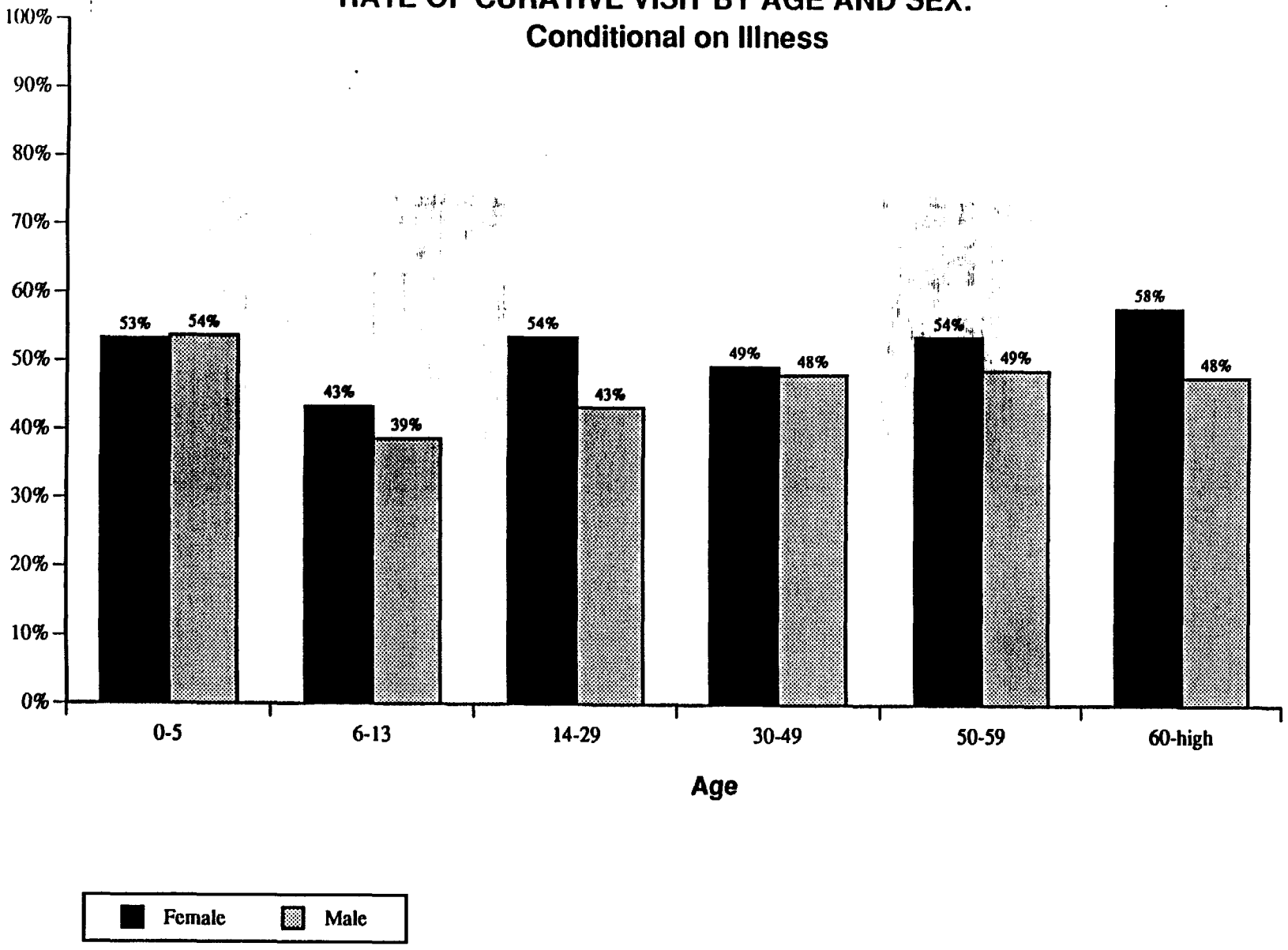
ILLNESS BY HEALTH INSURANCE



Jamaica Survey of Living Conditions 1989-2

Figure 2a

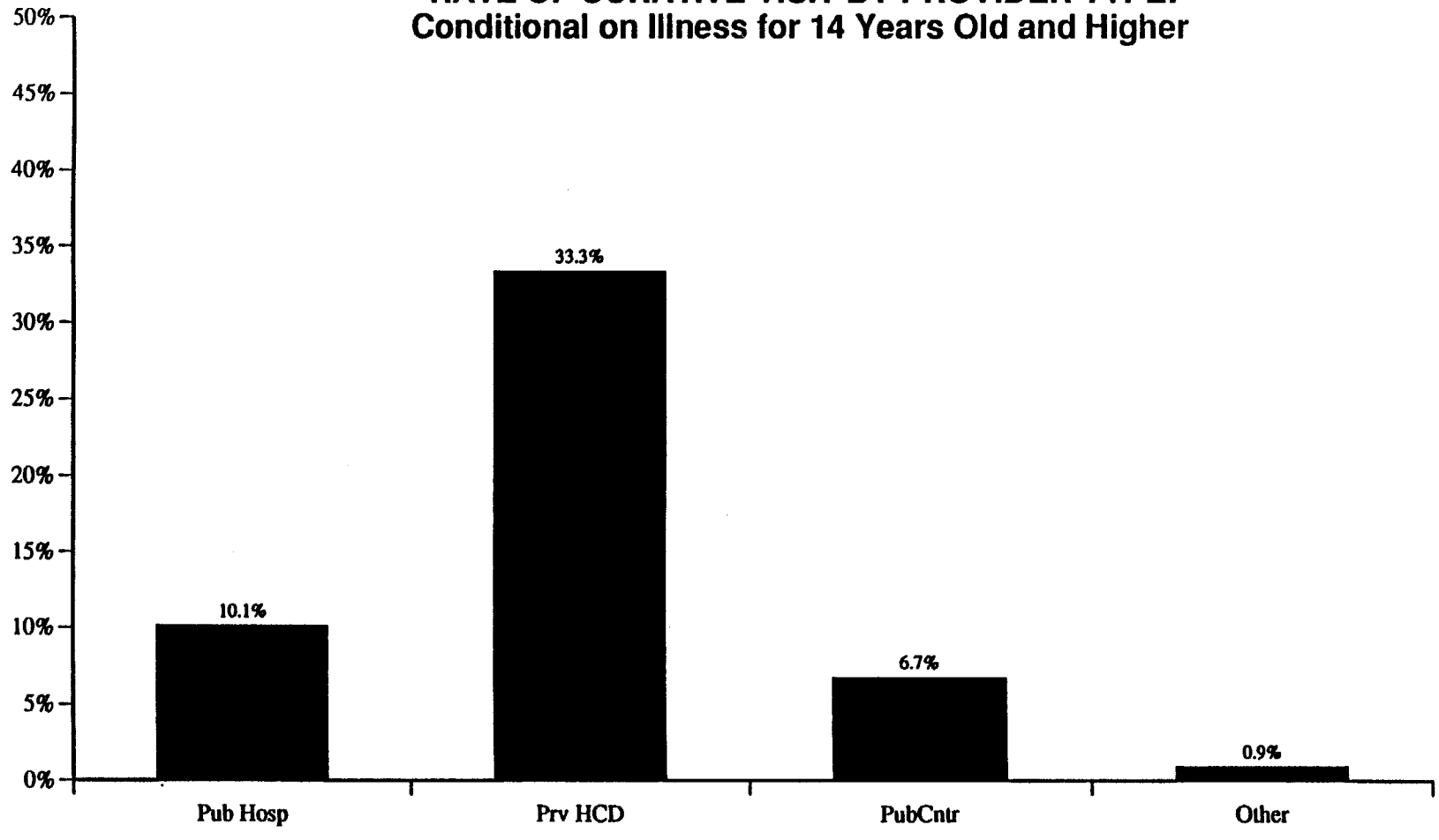
RATE OF CURATIVE VISIT BY AGE AND SEX: Conditional on Illness



Jamaica Survey of Living Conditions 1989-2

Figure 2b

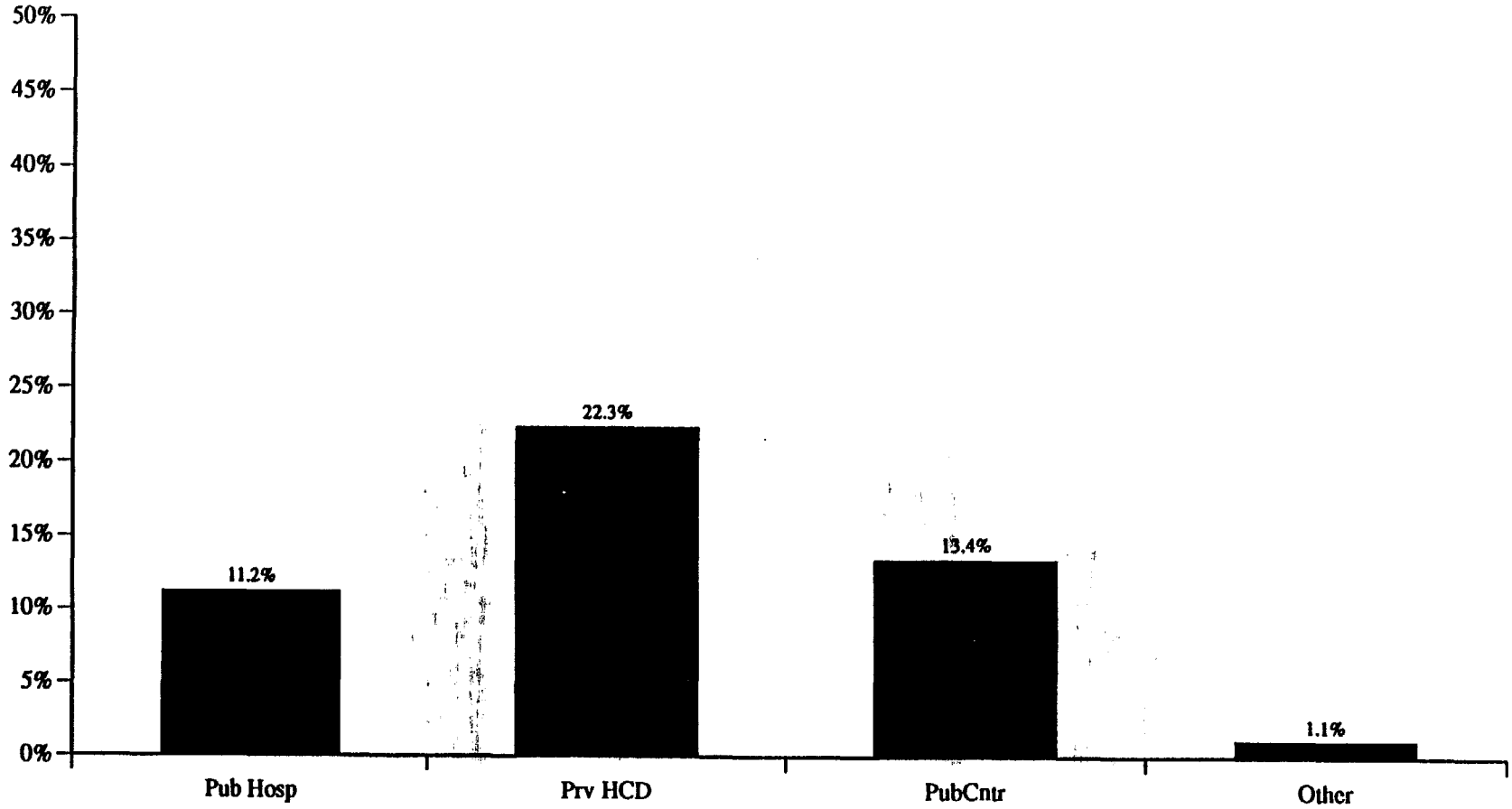
RATE OF CURATIVE VISIT BY PROVIDER TYPE:
Conditional on Illness for 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 2c

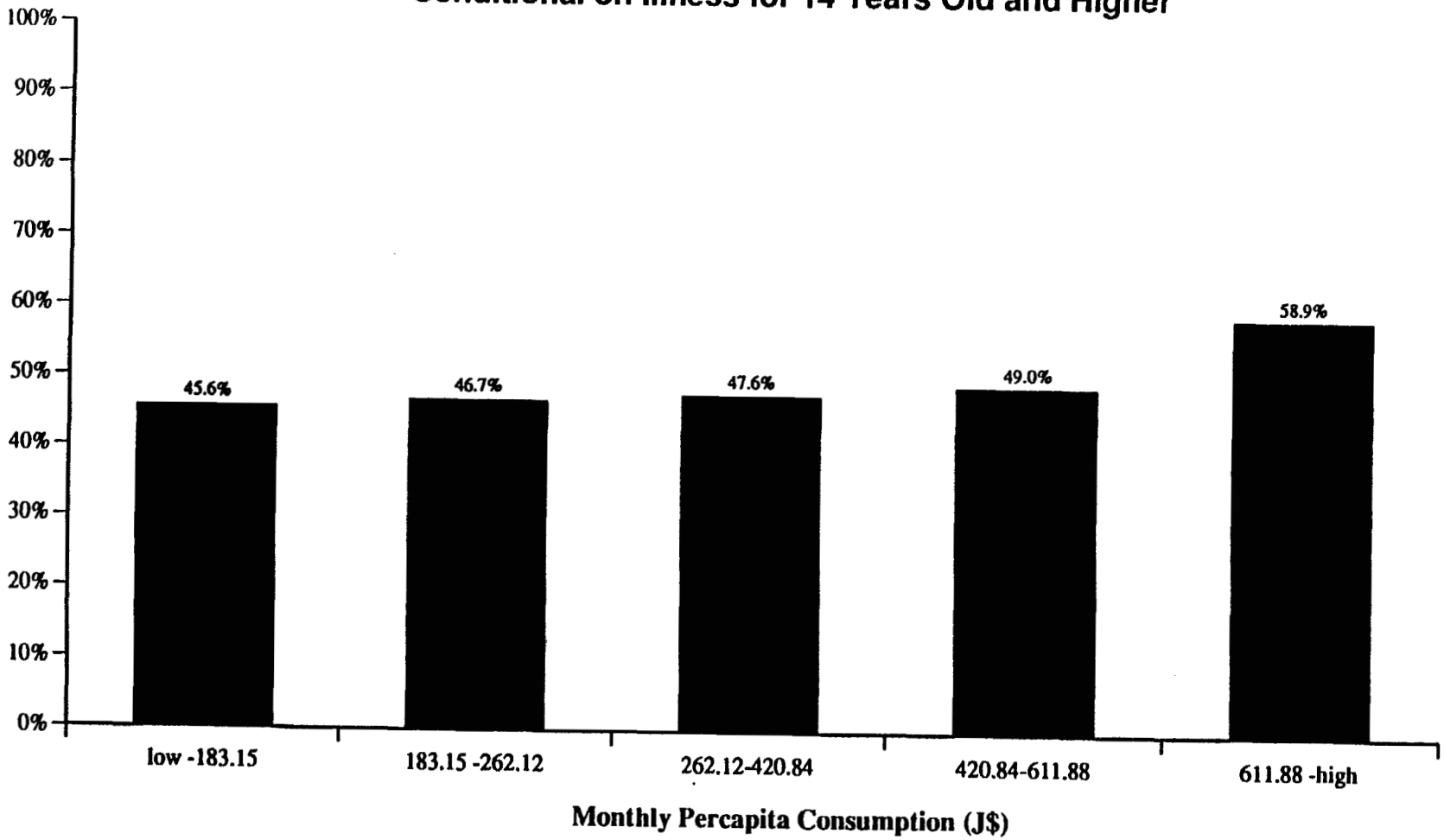
RATE OF CURATIVE VISIT BY PROVIDER TYPE:
Conditional on Illness for 13 Years Old and Lower



Jamaica Survey of Living Conditions 1989-2

Figure 2d

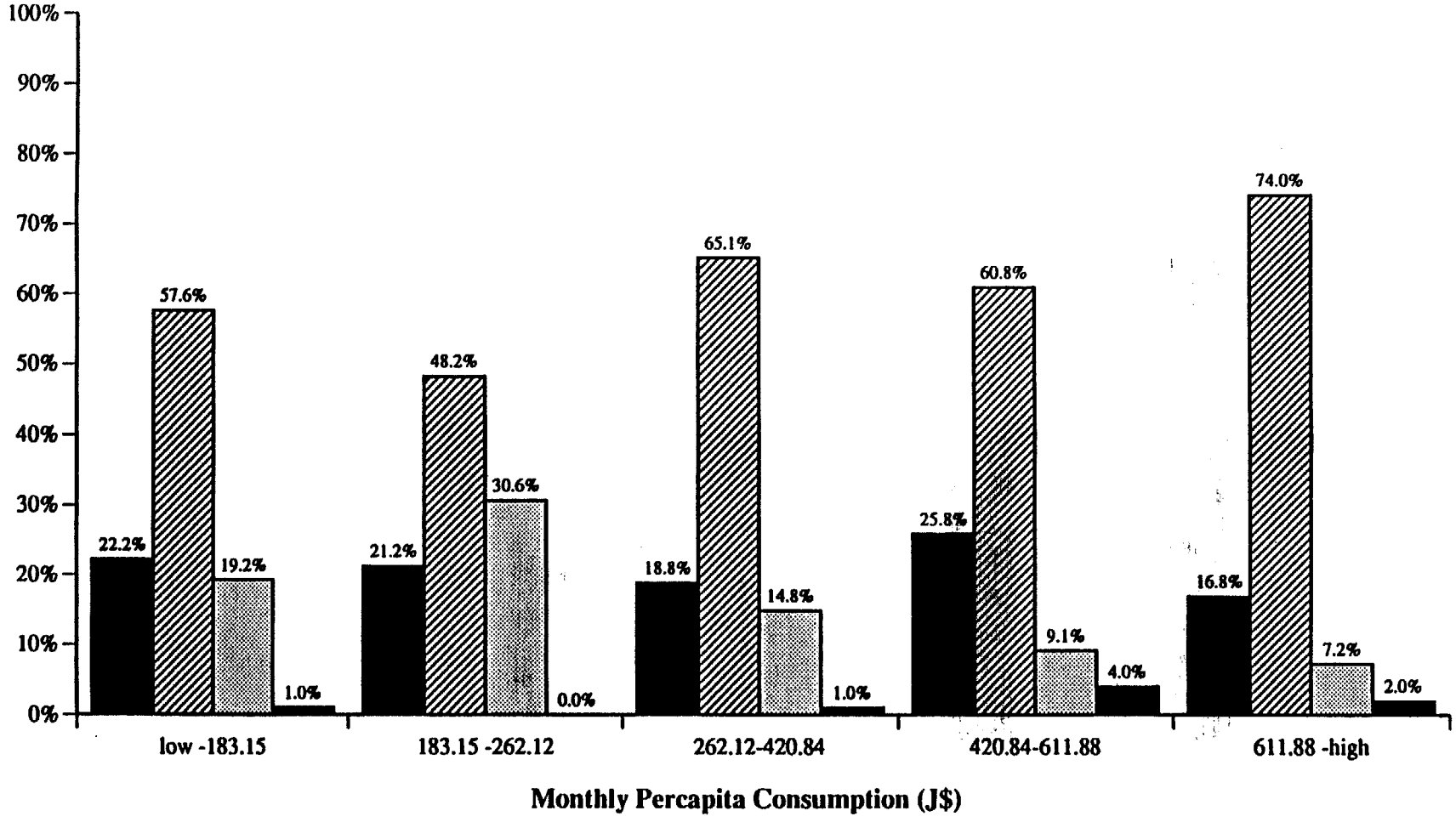
RATE OF CURATIVE VISIT BY MONTHLY PERCAPITA CONSUMPTION:
Conditional on Illness for 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 2e

RATE OF CURATIVE VISIT BY MONTHLY PERCAPITA CONSUMPTION AND PLACE OF VISIT: Conditional on Visits>0 for 14 Years Old and Higher

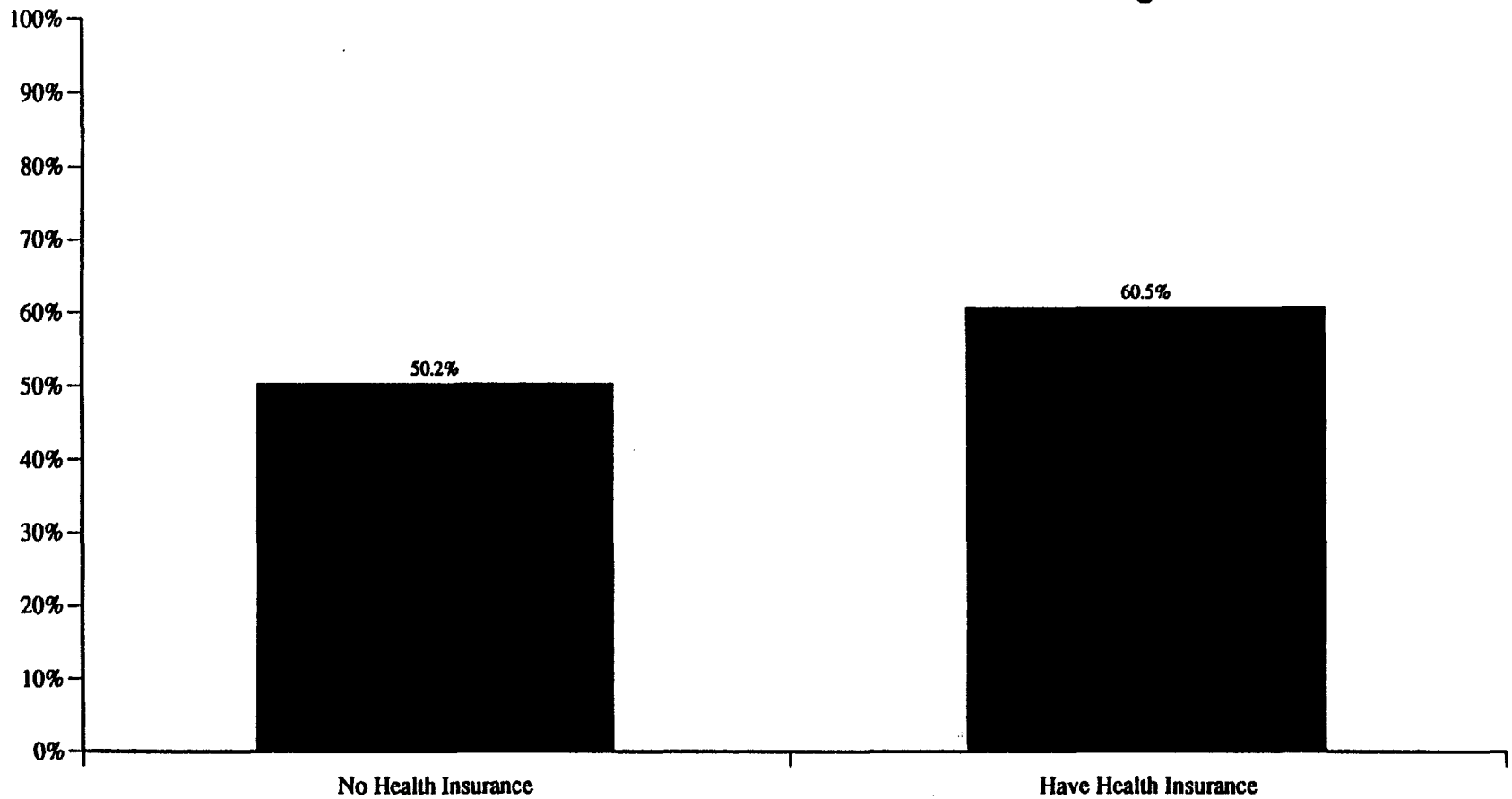


Pub Hosp | Prv HCD | PubCntr | Other

Jamaica Survry of Living Conditions 1989-2

Figure 2f

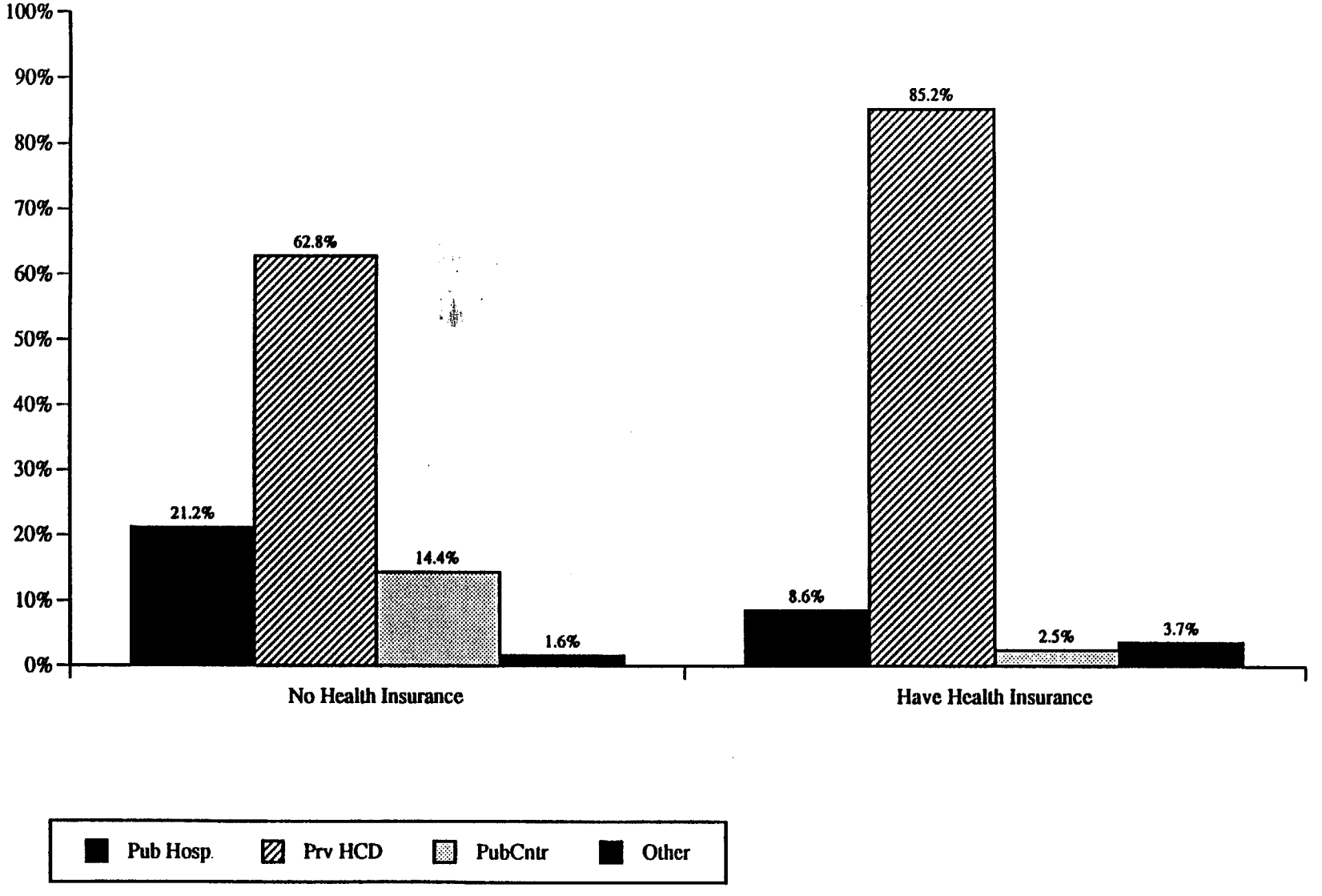
RATE OF CURATIVE VISIT BY HEALTH INSURANCE: Conditional on Illness for 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 2g

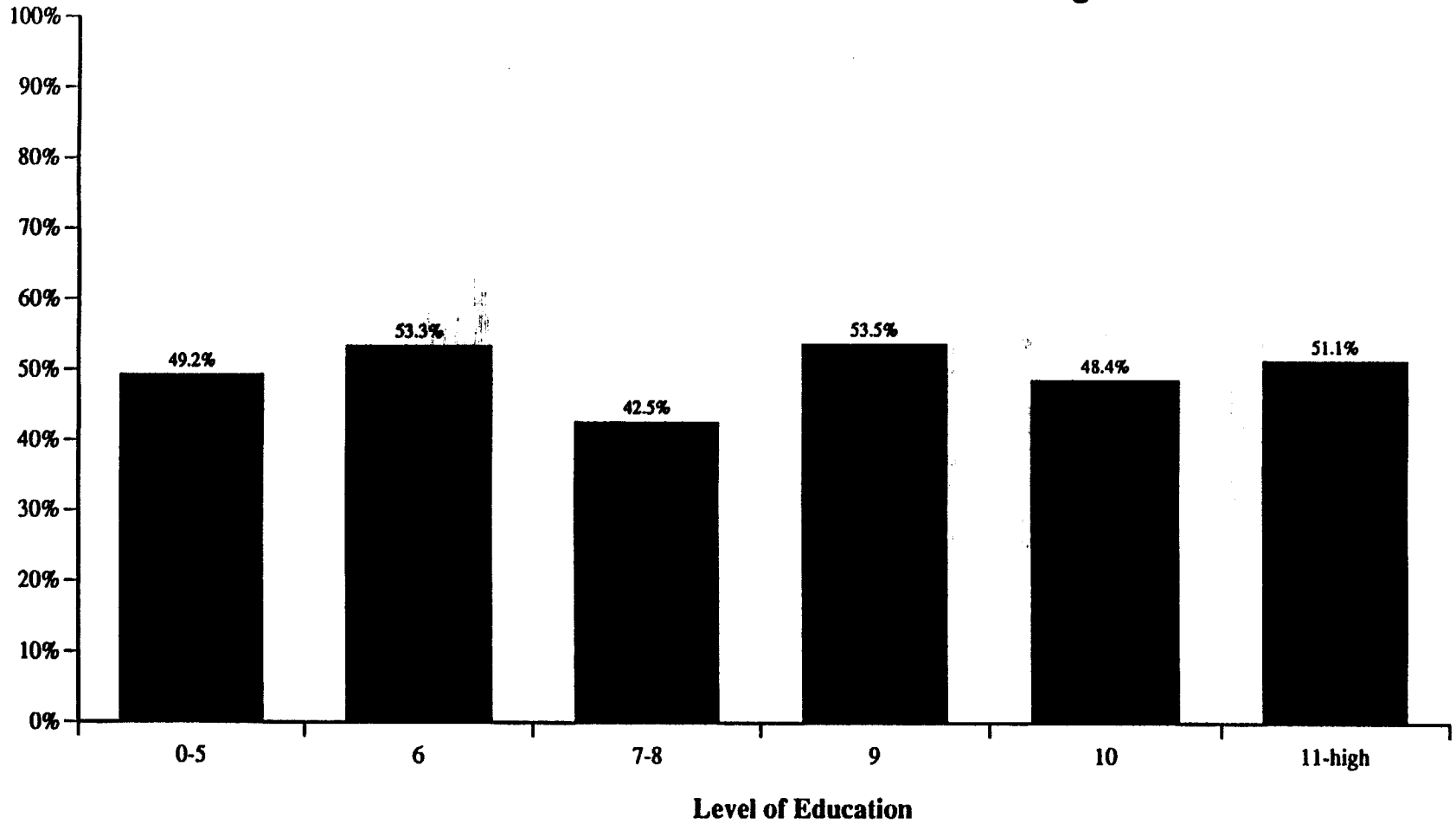
RATE OF CURATIVE VISIT BY HEALTH INSURANCE AND PLACE OF VISIT:
Conditional on Visits>0 for 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

figure 2h

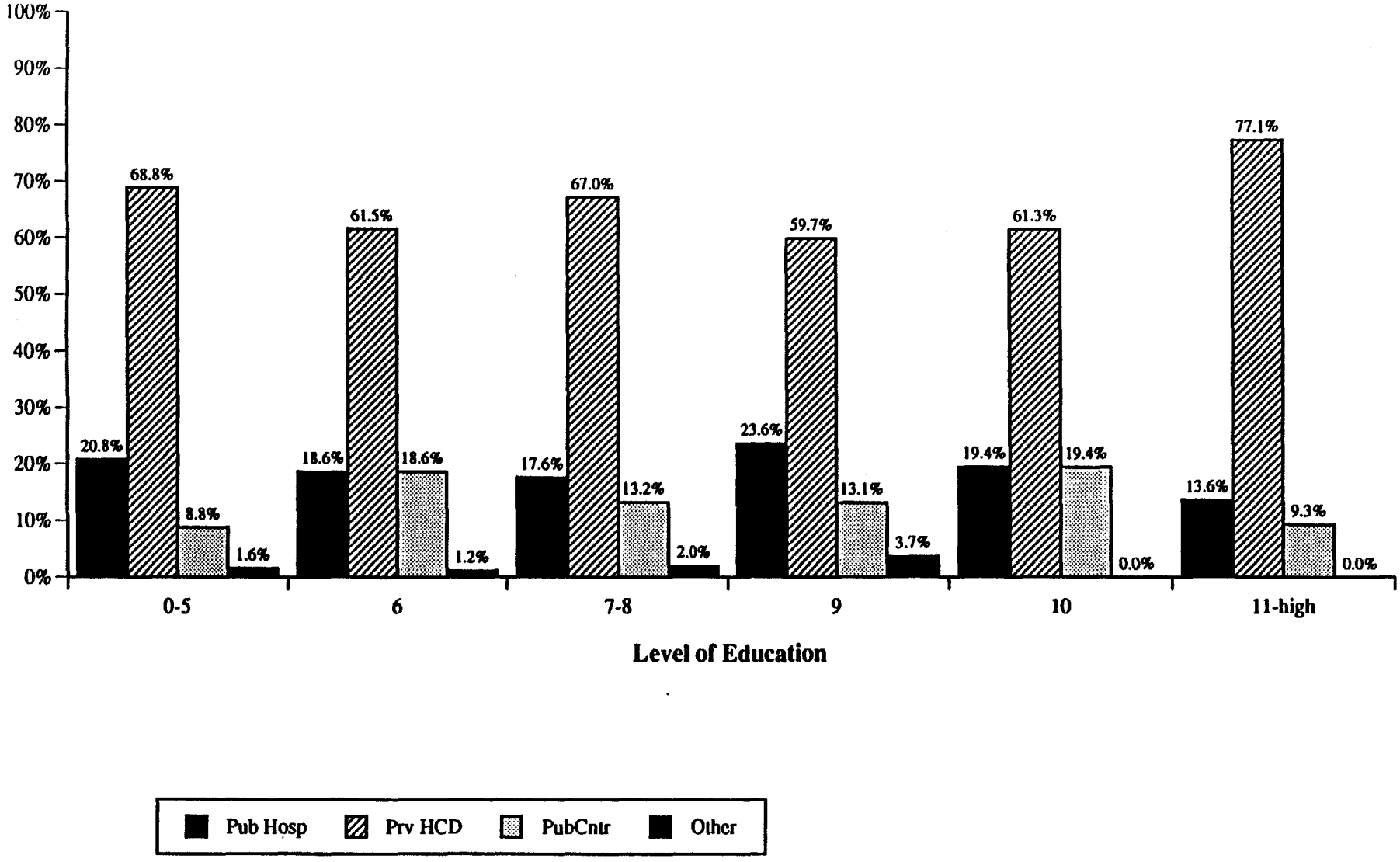
RATE OF CURATIVE VISIT BY LEVEL OF EDUCATION: Conditional on Illness for 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 2i

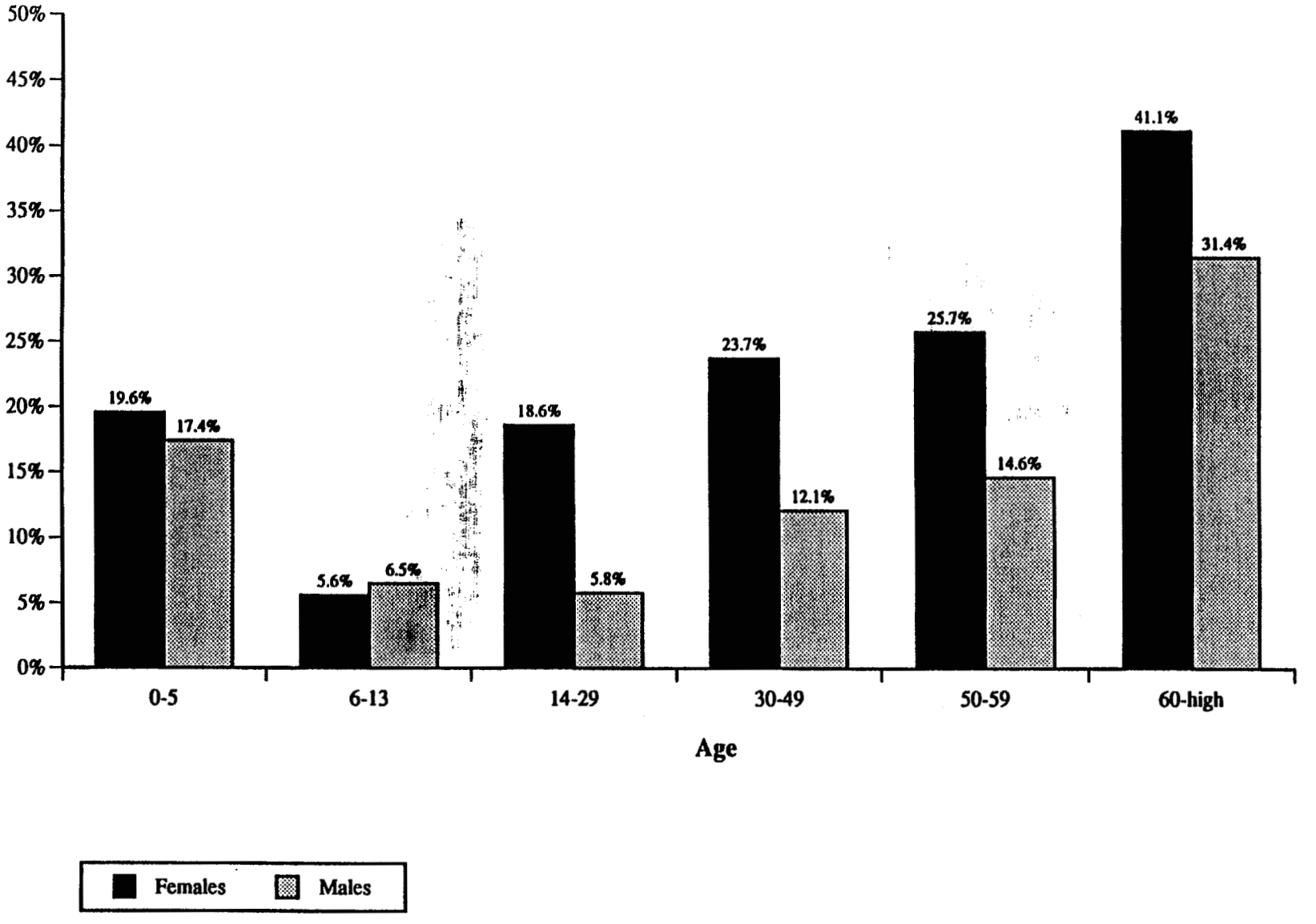
RATE OF CURATIVE VISIT BY LEVEL OF EDUCATION AND PLACE OF VISIT: Conditional on Visits>0 for 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

figure 3a

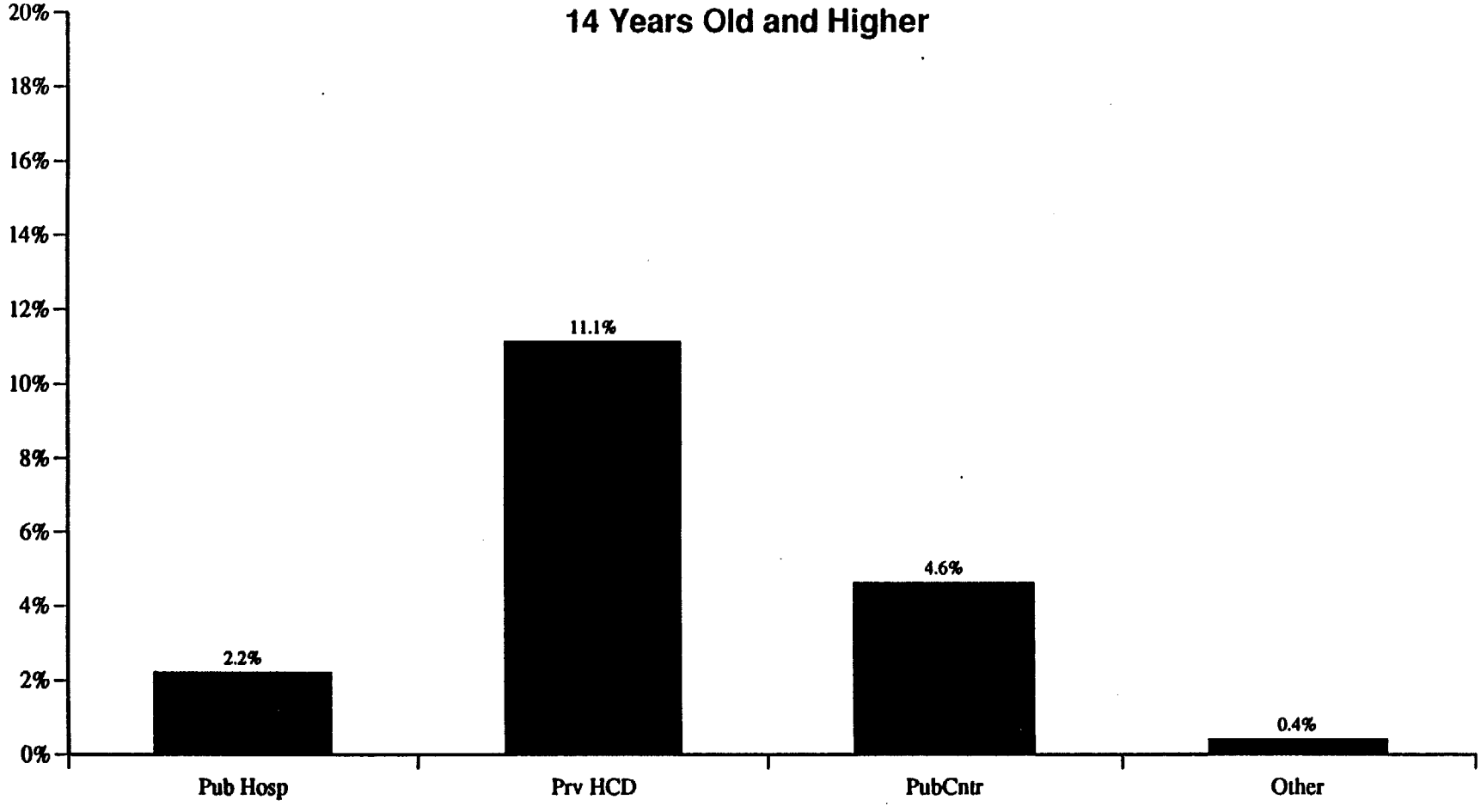
RATE OF PRENTIVE VISIT BY AGE AND SEX



Jamaica Survey of Living Conditions 1989-2

Figure 3b

RATE OF PREVENTIVE VISIT BY PROVIDER TYPE
14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 3c

RATE OF PREVENTIVE VISIT BY PROVIDER TYPE: 13 Years Old and Lower

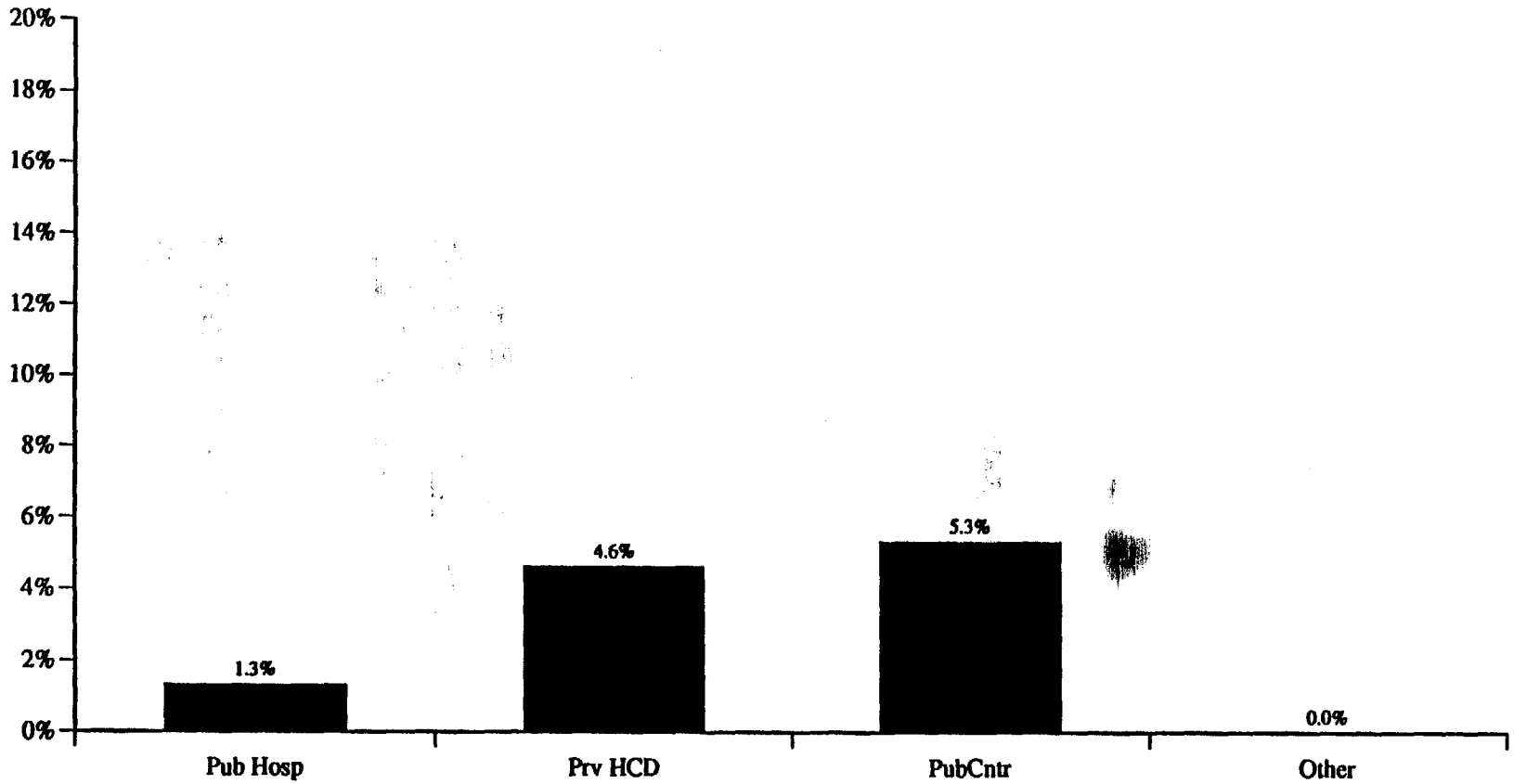


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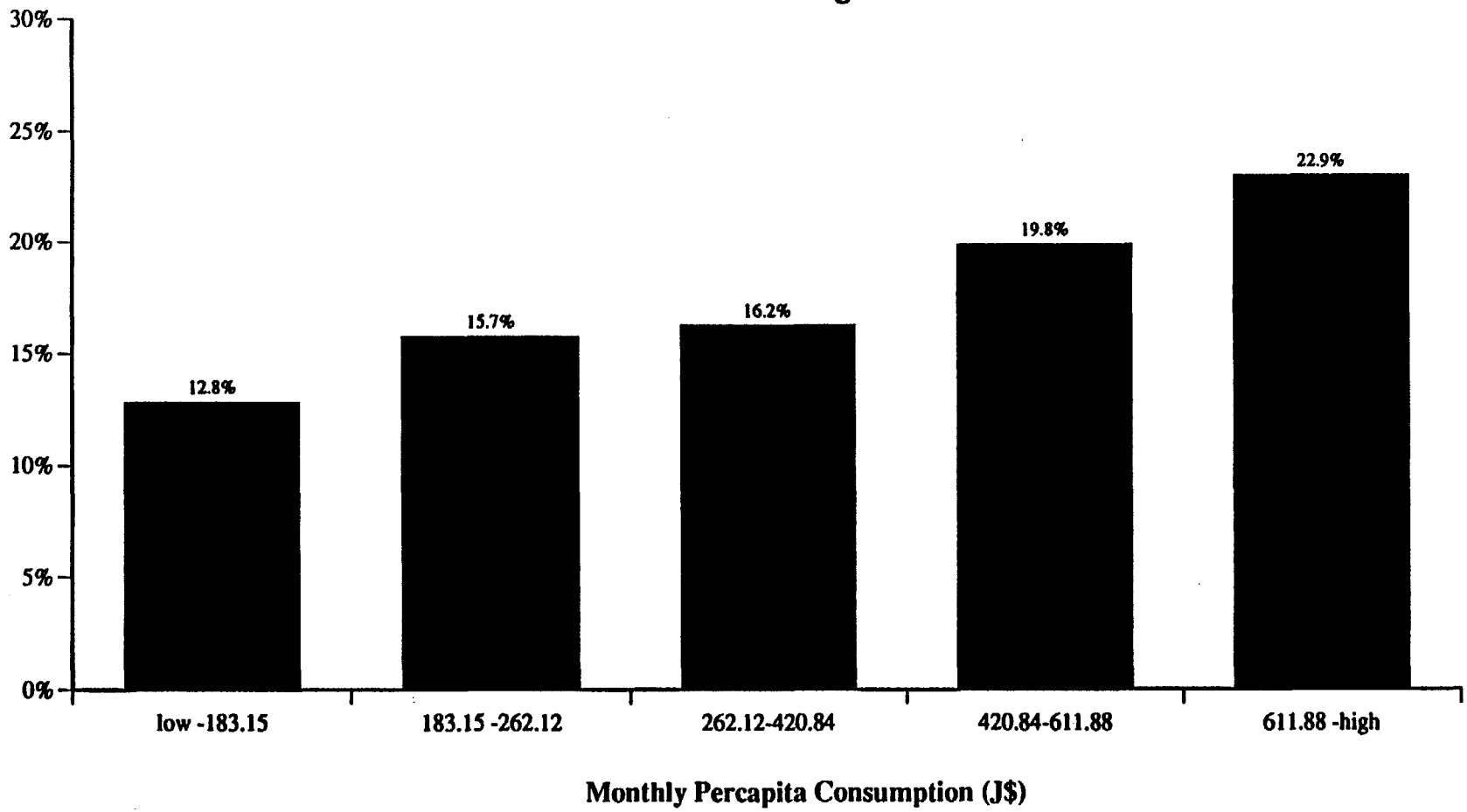
Figure 3d

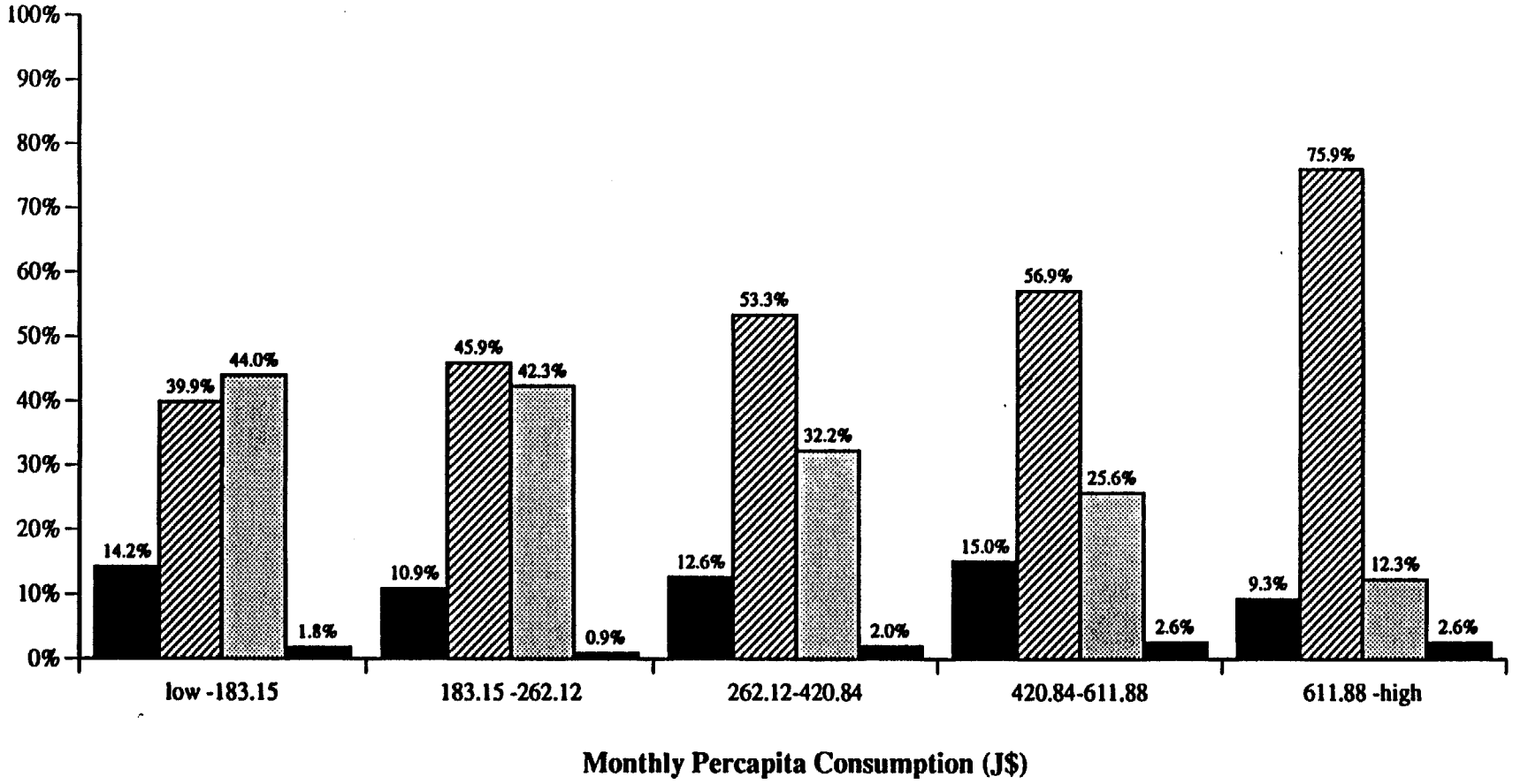
RATE OF PREVENTIVE CARE MONTHLY PERCAPITA CONSUMPTION: 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 3e

RATE OF PREVENTIVE VISIT BY MONTHLY PERCAPITA CONSUMPTION AND PLACE OF VISIT: Conditional on Visits>0 for 14 Years Old and Higher

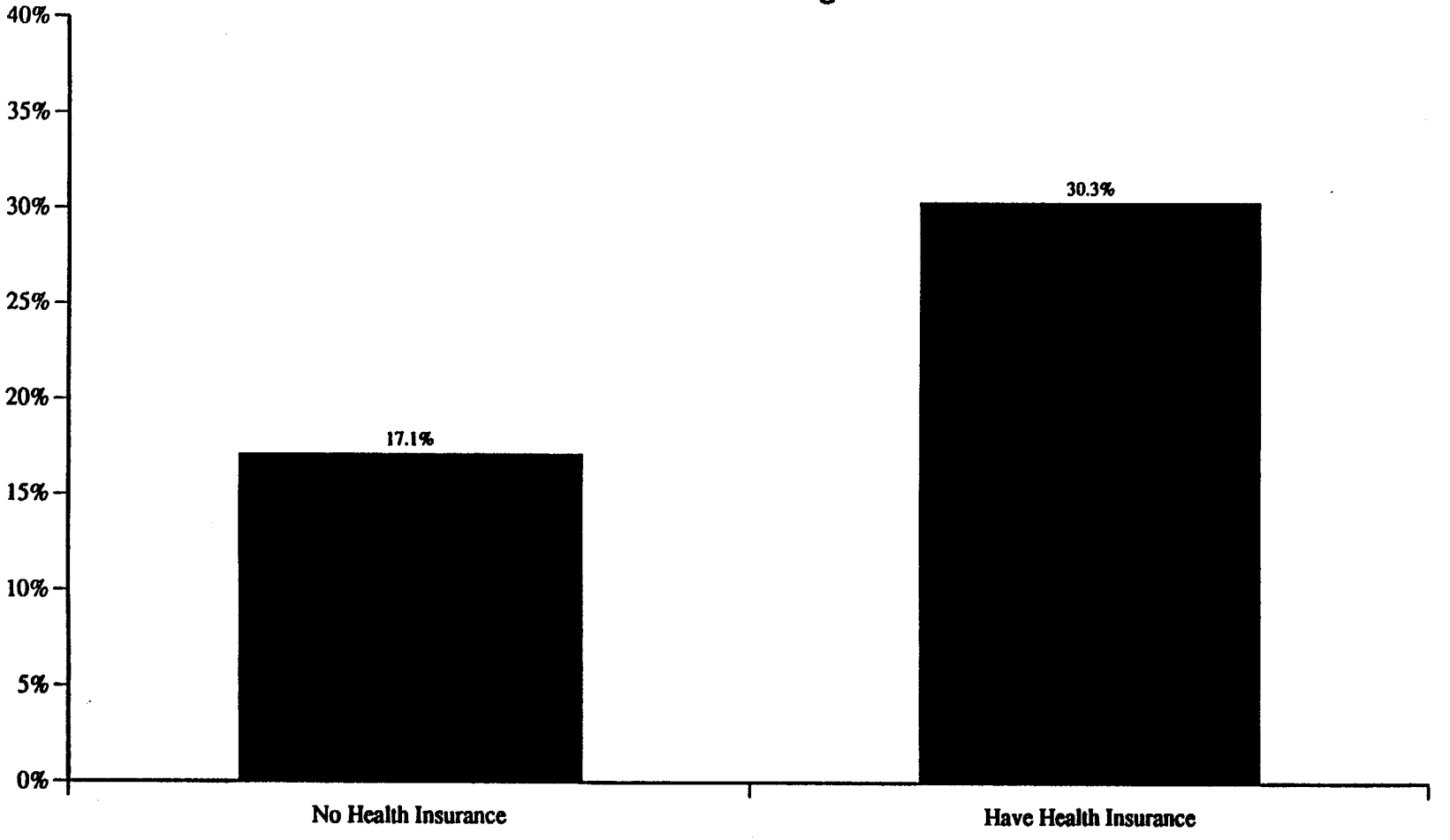


Pub Hosp | Prv HCD | PubCntr | Other

Jamaica Survey of Living Conditions 1989-2

Figure 3f

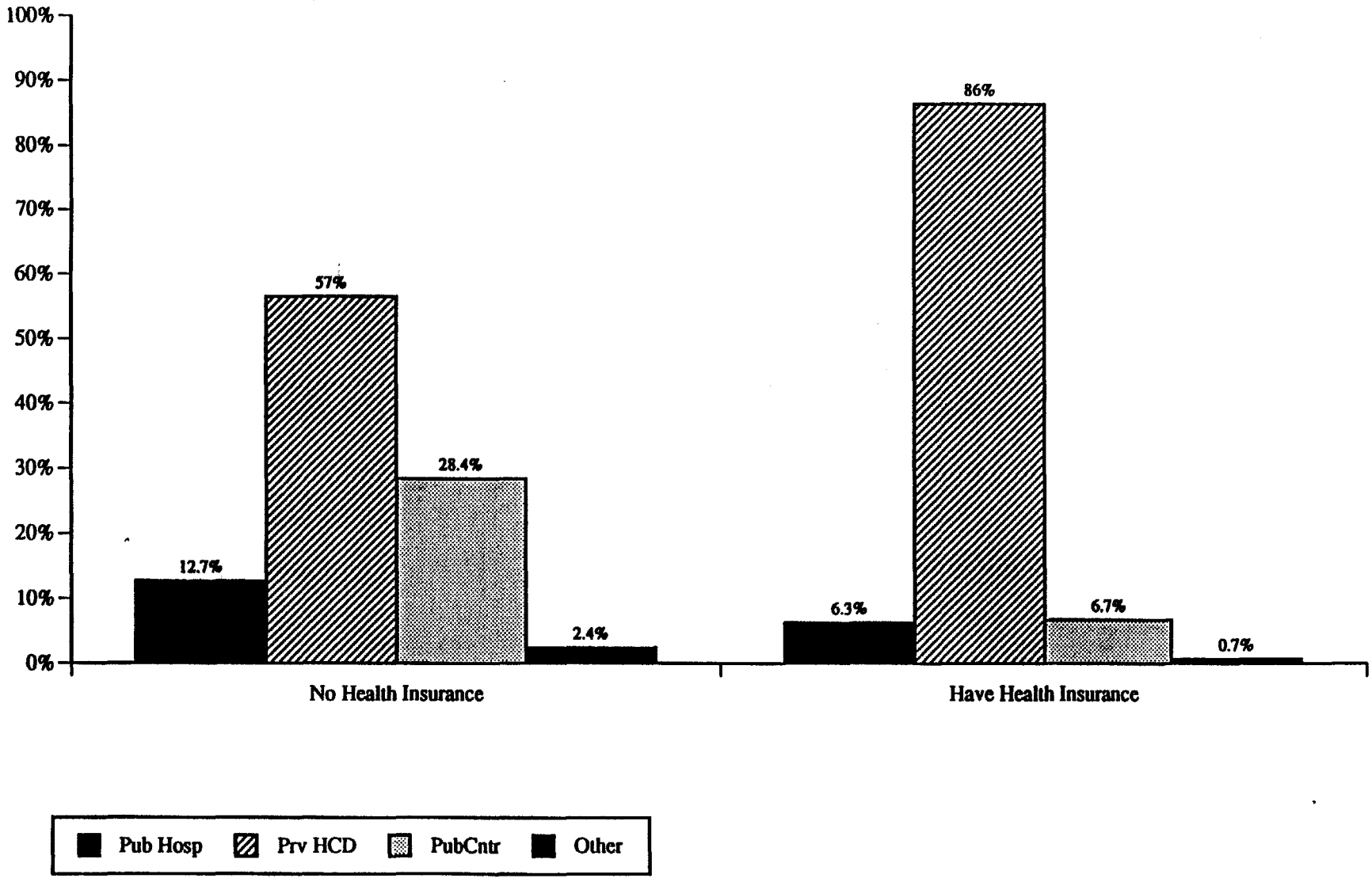
RATE OF PREVENTIVE VISITS BY HEALTH INSURANCE: 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 3g

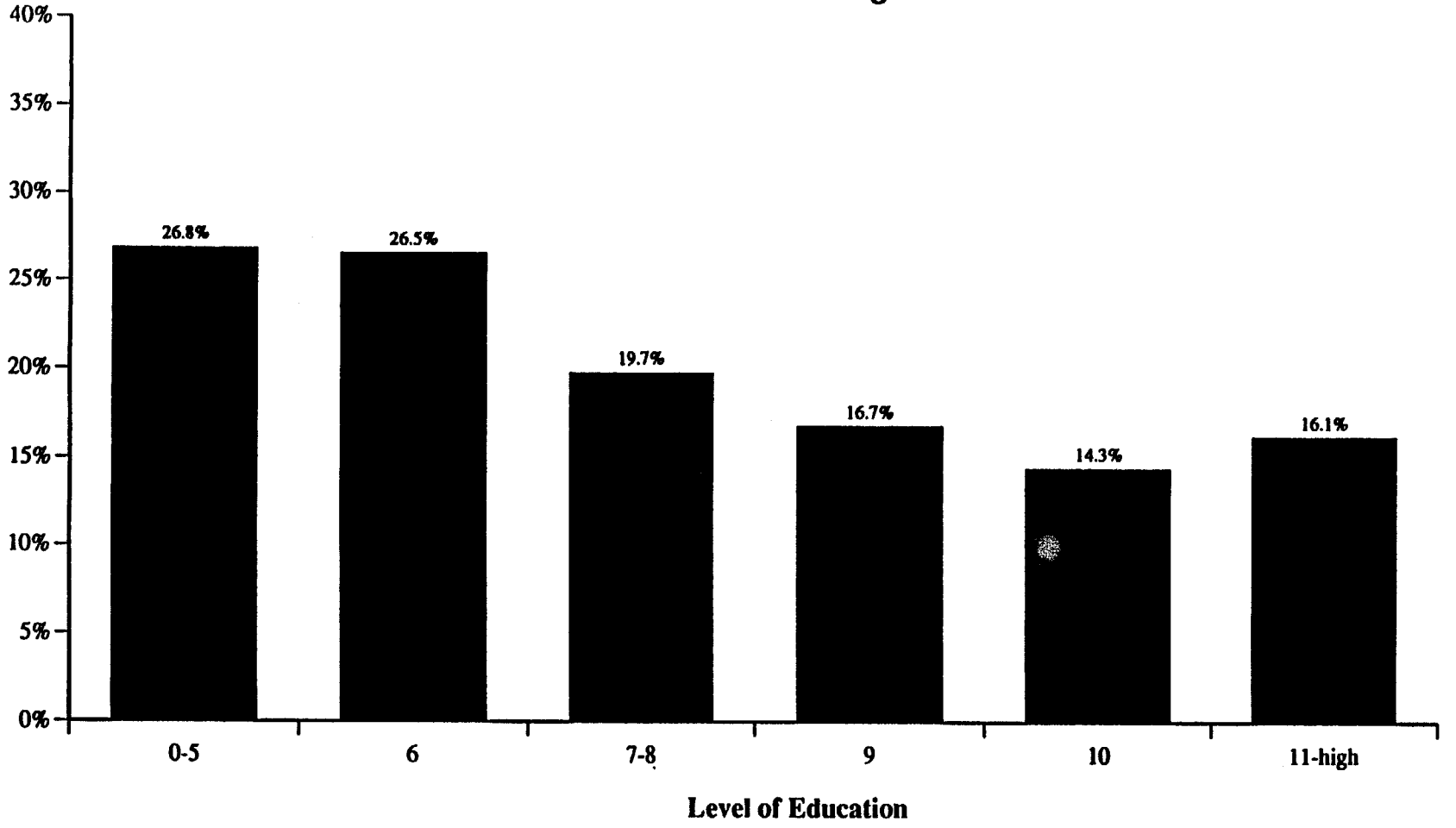
RATE OF PREVENTIVE VISIT BY HEALTH INSURANCE AND PLACE OF VISIT: Conditional on Visits>0 for 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 3h

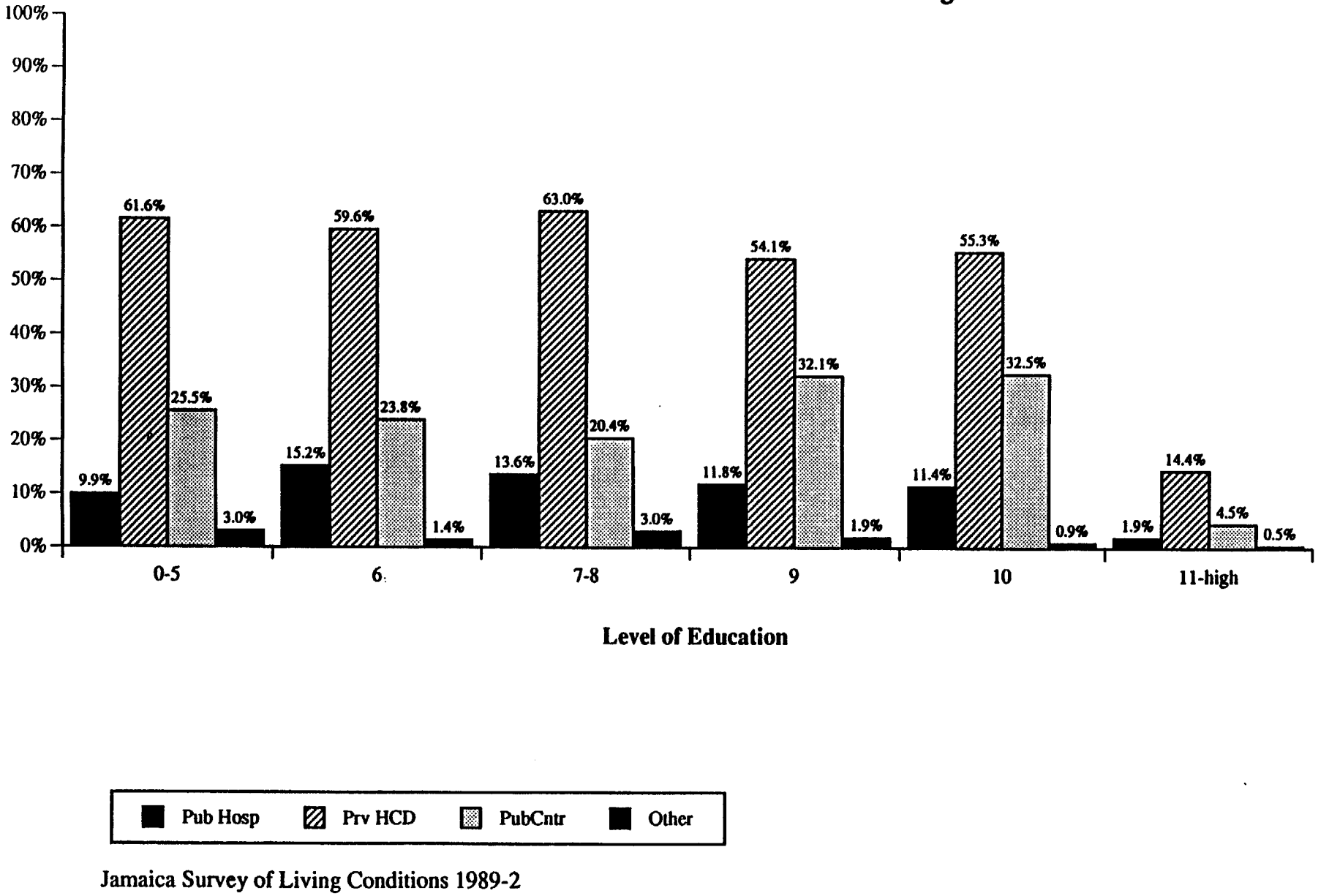
RATE OF PREVENTIVE VISIT BY LEVEL OF EDUCATION: 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

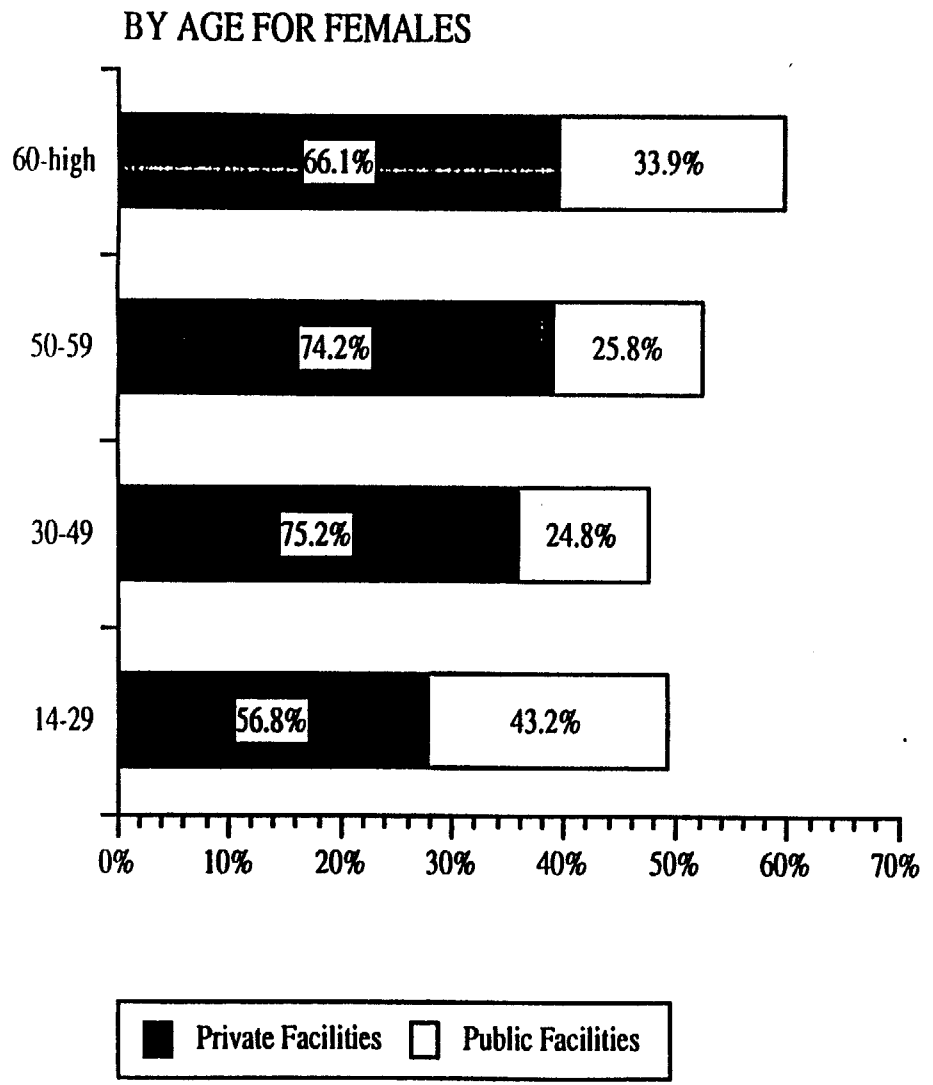
Figure 3i

RATE OF PREVENTIVE VISIT BY LEVEL OF EDUCATION AND PLACE OF VISIT: Conditional on Visits>0 for 14 Years Old and Higher



Jamaica Survey of Living Conditions 1989-2

Figure 4a
Simulated Probabilities of Usage Per Month: Conditional on Illness for 14 Years Old and Older



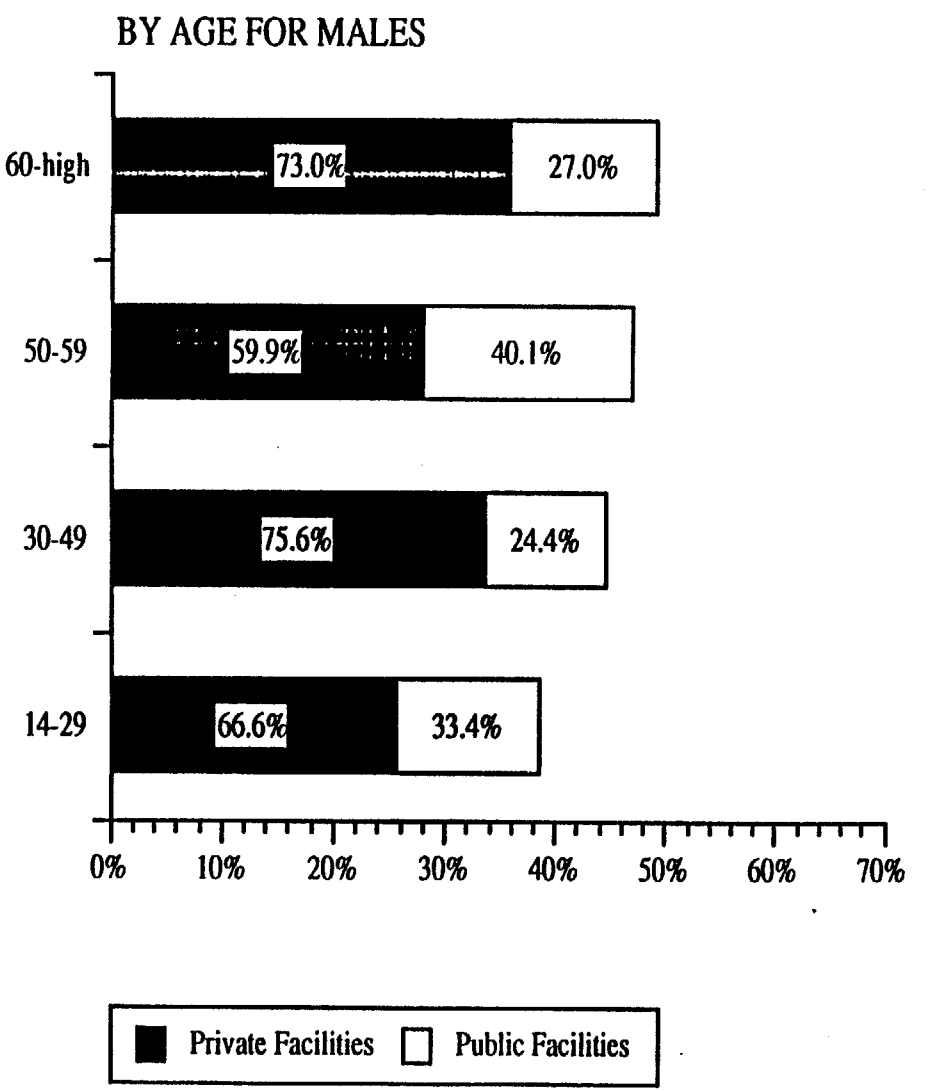
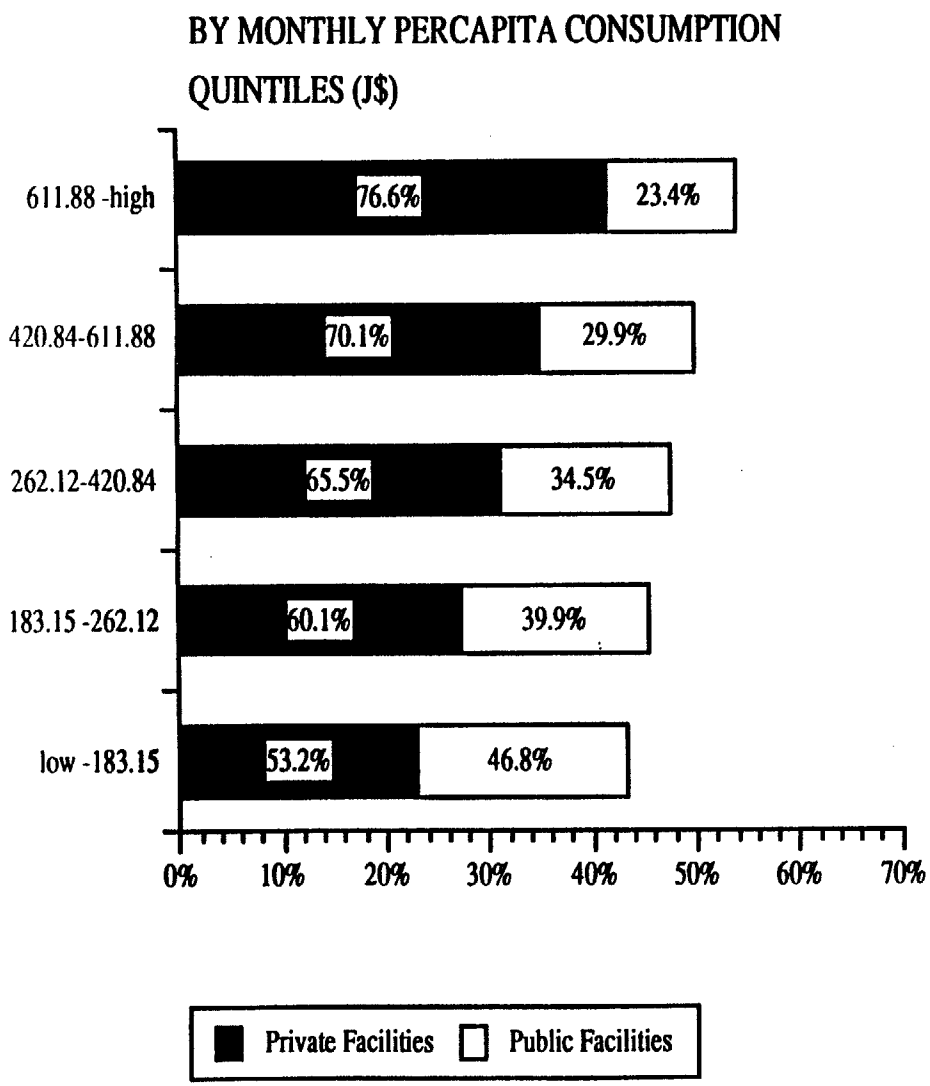


Figure 4b
Simulated Probabilities of Usage Per Month: Conditional on Illness for 14 Years Old and Older



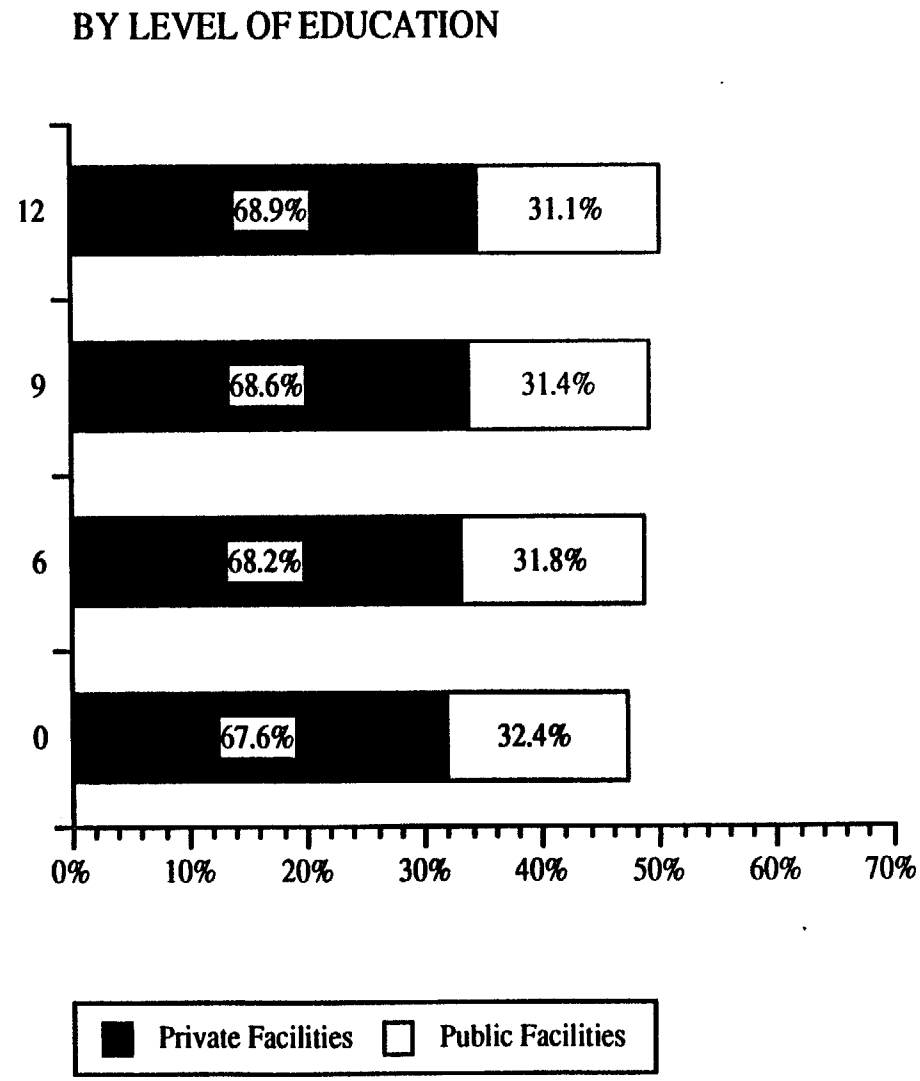
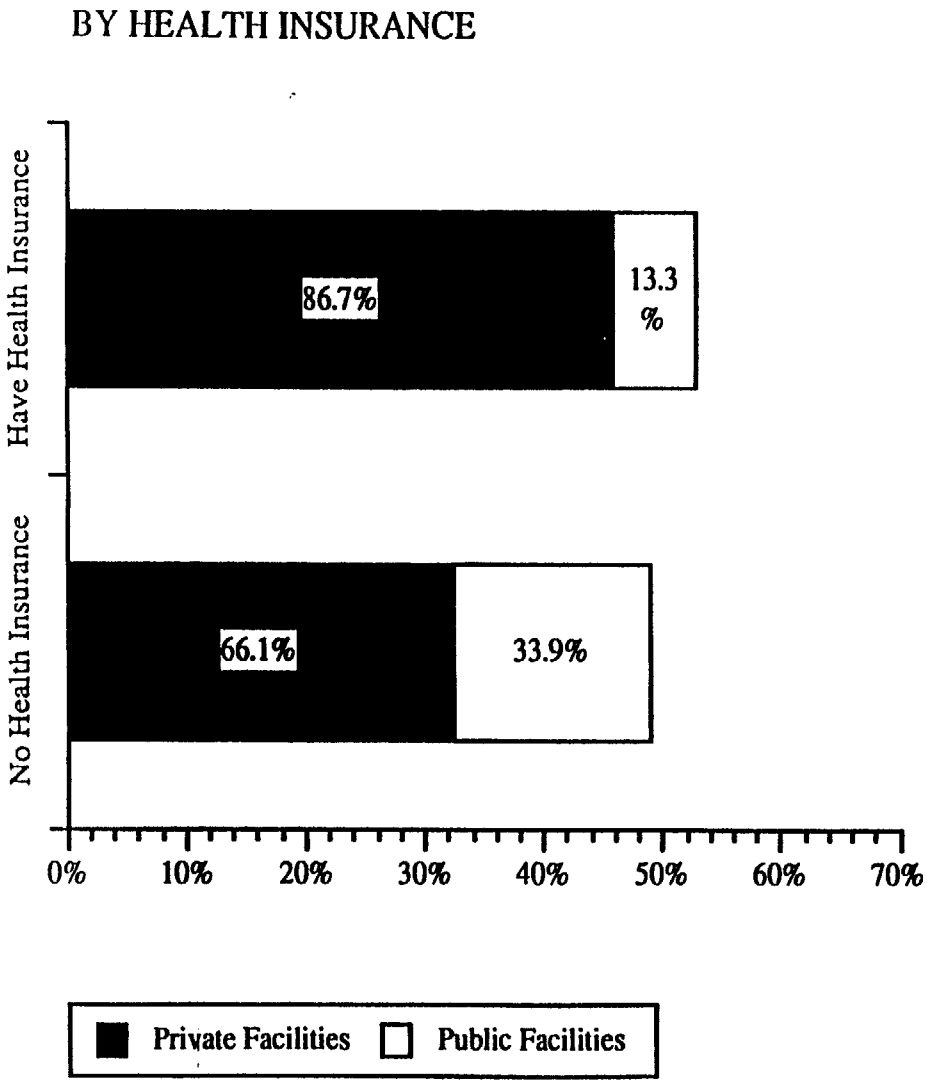
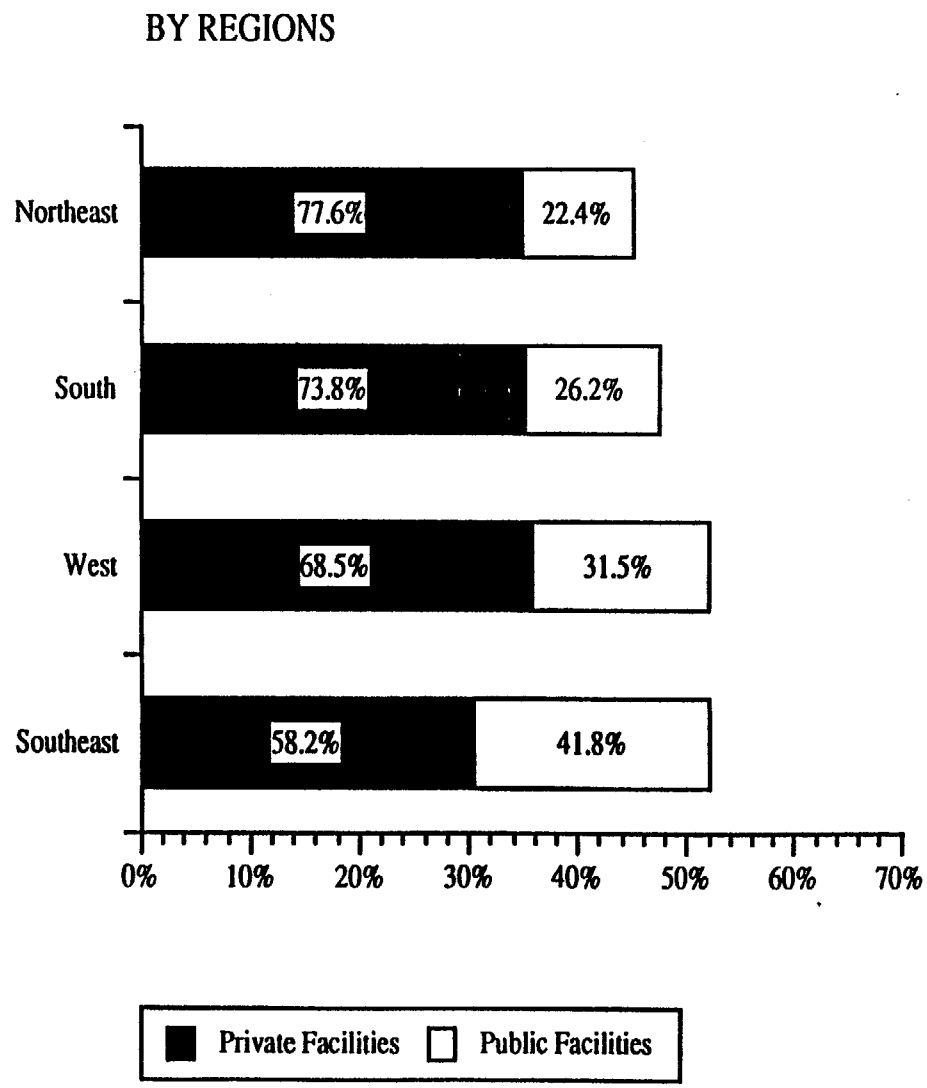


Figure 4c
Simulated Probabilities of Usage Per Month: Conditional on Illness for 14 Years Old and Older





Probability of Illness

Adults Aged 14 and Older

Table 1

Probit Estimated Effects on the Probability of Illness	
Intercept	-1.045
	[-3.01]
Male * Aged 14 to 29	-0.237
	[-4.30]
Aged 30 to 49	0.193
	[3.30]
Male * Aged 30 to 49	-0.332
	[-5.09]
Aged 50 to 59	0.529
	[6.73]
Male * Aged 50 to 59	-0.259
	[-2.69]
Aged 60+	0.696
	[10.58]
Male * Age 60+	-0.204
	[-2.97]
Grade Completed	-0.022
	[-2.84]
No. of Peopple in HH	-0.032
	[-5.75]
Predicted Percapita Consumption Expenditure (J$)	-0.059
	[-1.47]
Northeast Region	-0.059
	[-1.00]
West Region	-0.005
	[-0.09]
South Region	0.010
	[0.17]
% of Females Aged 0 to 13 Sick within Constituency	-0.005
	[-1.06]
% of Females Aged 14 to 29 Sick within Constituen	0.010
	[1.87]
% of Females Aged 30 to 49 Sick within Constituen	0.003
	[1.14]
% of Females Aged 50+ Sick within Constituency	0.004
	[1.54]
% of Males Aged 0 to 13 Sick within Constituency	0.002
	[0.40]
% of Males Aged 14 to 29 Sick within Constituency	0.021
	[3.55]
% of Males Aged 30 to 49 Sick within Constituency	0.004
	[1.04]
% of Males Aged 50+ Sick within Constituency	0.010
	[3.27]
Number of Observation	9726
Log Likelihood	-3560.11
Chi2	801.88
Chi2 for % Sick within Constituency Dummies	26.34
Chi2 for Region Dummies	0.48

Curative Care

Adults Aged 14 and Older

Table 2

	Probit Estimated Effects on the Probabilities of:				OLS Estimated Effects on:	
	Public-Usage Conditonal on Illness	Private-Usage Conditonal on Illness	Public Exp >0 Conditional on Public Usage	Private Exp >0 Conditional on Private Usage	LN (Public Exp.) Conditional on Public Exp >0	LN (Private Exp.) Conditional on Private Exp >0
Intercept	0.474	-2.538	-2.481	0.920	0.626	2.900
	[1.07]	[-6.502]	[-2.63]	[1.001]	[0.44]	[6.346]
Male * Aged 14 to 29	-0.334	-0.067	0.744	-0.258	0.408	-0.149
	[-2.14]	[-0.489]	[2.19]	[-0.845]	[0.84]	[-0.917]
Aged 30 to 49	-0.388	0.219	0.940	0.406	0.207	0.028
	[-2.52]	[1.682]	[2.73]	[1.228]	[0.40]	[0.200]
Male * Aged 30 to 49	-0.043	-0.053	-0.428	-0.462	0.566	-0.131
	[-0.22]	[-0.357]	[-0.93]	[-1.357]	[0.89]	[-0.832]
Aged 50 to 59	-0.306	0.305	1.055	0.174	0.240	0.207
	[-1.68]	[1.957]	[2.66]	[0.476]	[0.42]	[1.201]
Male * Aged 50 to 59	0.221	-0.297	-1.204	-0.518	0.871	-0.378
	[0.99]	[-1.561]	[-2.38]	[-1.308]	[1.08]	[-1.757]
Aged 60+	-0.037	0.318	0.619	-0.325	0.056	0.052
	[-0.26]	[2.423]	[2.14]	[-1.126]	[0.12]	[0.344]
Male * Age 60+	-0.275	-0.092	-0.190	0.638	0.412	-0.034
	[-1.94]	[-0.750]	[-0.63]	[2.328]	[0.84]	[-0.250]
Grade Completed	0.001	0.006	0.035	0.019	0.036	0.035
	[0.05]	[0.388]	[0.85]	[0.556]	[0.57]	[2.082]
No. of Peopple in HH	-0.012	0.037	0.029	0.045	0.037	0.042
	[-0.84]	[2.891]	[1.07]	[1.439]	[0.93]	[2.832]
Percapita Consumption Expenditure (J$	-0.155	0.265	0.269	-0.030	0.142	0.114
	[-2.51]	[4.971]	[1.99]	[-0.249]	[0.68]	[1.914]
Northeast Region	-0.500	0.125	0.337	0.196	-0.079	0.427
	[-3.99]	[1.213]	[1.17]	[0.849]	[-0.21]	[3.645]
West Region	-0.202	0.148	-0.733	0.220	0.941	0.254
	[-1.72]	[1.416]	[-2.94]	[0.947]	[2.16]	[2.175]
South Region	-0.379	0.128	-0.044	0.148	0.369	0.036
	[-3.52]	[1.384]	[-0.18]	[0.715]	[1.03]	[0.342]
If Have Health Insurrance	-0.506	0.351	1.449	-0.031	0.722	-0.797
	[-2.68]	[2.735]	[2.29]	[-0.126]	[1.35]	[-6.517]
Number of Observation	1398	1398	232	475	111	415
R Square					0.136	0.168
Log Likelihood	-602.31	-868.03	-139.98	-170.69		
Chi2	51.93	55.84	41.23	18.98		
Chi2 for Parish Dummies	6.92	1.00	4.25	0.41	1.89	5.79

Preventive Care

Adults Aged 14 and Older

Table 3

	Probit Estimated Effects on the Probabilities of:				OLS Estimated Effects on:	
	Public-Usage	Private-Usage	Public Exp >0 Conditional on Public Usage	Private Exp >0 Conditional on Private Usage	LN (Public Exp.) Conditional on Public Exp >0	LN (Private Exp.) Conditional on Private Exp >0
Intercept	-0.412	-3.413	-1.562	1.131	2.323	2.372
	[-1.84]	[-17.22]	[-2.71]	[2.05]	[2.39]	[6.11]
Male * Aged 14 to 29	-1.003	-0.409	0.575	-0.015	0.151	0.033
	[-12.55]	[-6.96]	[2.17]	[-0.08]	[0.37]	[0.25]
Aged 30 to 49	-0.094	0.220	-0.033	0.043	-0.038	0.257
	[-1.51]	[3.82]	[-0.22]	[0.27]	[-0.13]	[2.32]
Male * Aged 30 to 49	-0.576	-0.413	0.648	-0.047	0.512	-0.234
	[-6.77]	[-6.39]	[2.59]	[-0.27]	[1.29]	[-1.82]
Aged 50 to 59	-0.122	0.337	0.421	0.111	0.004	0.442
	[-1.29]	[4.12]	[1.81]	[0.50]	[0.01]	[2.98]
Male * Aged 50 to 59	-0.474	-0.436	0.253	0.057	-0.444	-0.115
	[-3.34]	[-4.10]	[0.62]	[0.19]	[-0.72]	[-0.57]
Aged 60+	0.274	0.533	0.437	0.041	0.297	0.260
	[3.85]	[7.88]	[2.67]	[0.23]	[1.05]	[2.14]
Male * Age 60+	-0.295	-0.139	-0.135	0.081	-0.163	0.066
	[-3.70]	[-1.90]	[-0.77]	[0.43]	[-0.52]	[0.54]
Grade Completed	-0.004	-0.021	0.013	-0.025	0.031	0.004
	[-0.41]	[-2.74]	[0.56]	[-1.18]	[0.77]	[0.29]
No. of Peopple in HH	-0.029	0.003	0.038	0.016	0.001	0.028
	[-4.09]	[0.45]	[2.28]	[0.81]	[0.03]	[2.24]
Percapita Consumption Expenditure (J$	-0.103	0.365	0.201	0.042	0.007	0.282
	[-3.27]	[13.34]	[2.45]	[0.56]	[0.05]	[5.41]
Northeast Region	-0.053	0.183	0.123	-0.121	-0.259	0.370
	[-0.87]	[3.61]	[0.85]	[-0.89]	[-1.07]	[3.88]
West Region	-0.130	-0.177	-0.742	-0.438	-0.326	0.152
	[-2.19]	[-3.24]	[-4.89]	[-2.97]	[-0.99]	[1.27]
South Region	0.079	0.218	-0.085	0.160	-0.245	0.082
	[1.47]	[4.68]	[-0.67]	[1.21]	[-1.15]	[0.95]
If Have Health Insurrance	-0.171	0.482	-0.237	-0.689	0.824	-0.710
	[-1.96]	[8.80]	[-1.02]	[-5.99]	[1.96]	[-7.29]
Number of Observation	9931	9931	720	1196	362	1033
R Square					0.034	0.092
Log Likelihood	-2351.74	-3255.64	-464.14	-445.10		
Chi2	461.81	793.61	69.82	62.20		
Chi2 for Parish Dummies	3.99	19.17	10.11	4.86	0.74	5.19

Simulated Probabilities and Means by Age and Sex
Aged 14 and Older
Table 4a

Probabilities of Illness per Month

Age	Female	Male
14-29	0.097	0.063
30-49	0.135	0.076
50-59	0.221	0.152
60-high	0.274	0.210

	Females			Males		
Probabilities of Usage per Month Conditonal on Illness						
Age	Public Facilities	Private Facilities	total	Public Facilities	Private Facilities	total
14-29	0.212	0.279	0.491	0.129	0.257	0.386
30-49	0.118	0.357	0.475	0.109	0.337	0.446
50-59	0.135	0.389	0.524	0.188	0.281	0.469
60-high	0.202	0.394	0.596	0.133	0.359	0.492
Probabilities of Usage per Month						
Age	Public Facilities	Private Facilities	total	Public Facilities	Private Facilities	total
14-29	0.021	0.027	0.048	0.008	0.016	0.024
30-49	0.016	0.048	0.064	0.008	0.025	0.033
50-59	0.030	0.086	0.116	0.029	0.043	0.072
60-high	0.055	0.108	0.163	0.028	0.076	0.104
Probabilities of Expenditure > 0 for Curative Care per Month Conditional on visits > 0						
Age	Public Facilities	Private Facilities		Public Facilities	Private Facilities	
14-29	0.294	0.886		0.581	0.828	
30-49	0.655	0.946		0.489	0.875	
50-59	0.697	0.916		0.245	0.805	
60-high	0.531	0.810		0.456	0.935	
Probabilities of Expenditure > 0 for Curative Care per Month						
Age	Public Facilities	Private Facilities		Public Facilities	Private Facilities	
14-29	0.006	0.024		0.005	0.013	
30-49	0.010	0.046		0.004	0.022	
50-59	0.021	0.079		0.007	0.035	
60-high	0.029	0.088		0.013	0.071	
Mean of Expenditure for Curative Care per Month Conditional on expenditure >0						
Age	Public Facilities	Private Facilities	total	Public Facilities	Private Facilities	total
14-29	8.731	61.016	69.747	13.129	52.584	65.713
30-49	10.736	62.773	73.509	18.914	55.042	73.956
50-59	11.099	75.048	86.147	26.511	51.422	77.933
60-high	9.236	64.278	73.514	13.943	62.159	76.102
Mean of Expenditure for Curative Care per Month						
Age	Public Facilities	Private Facilities	total	Public Facilities	Private Facilities	total
14-29	0.053	1.468	1.521	0.061	0.700	0.761
30-49	0.112	2.859	2.971	0.076	1.227	1.303
50-59	0.230	5.922	6.152	0.187	1.775	1.962
60-high	0.271	5.627	5.898	0.178	4.398	4.576

Simulated Probabilities and Means by Monthly Percapita Consumption Quintiles (JS)
Aged 14 and Older
Table 4b

Probabilities of Illness per Month

pc consumpt (JS)	
low -183.15	0.159
183.15 -262.12	0.152
262.12-420.84	0.146
420.84-611.88	0.141
611.88 -high	0.133

Probabilities of Usage per Month
Conditonal on Illness

pc consumpt (JS)	Public Facilities	Private Facilities	total
low -183.15	0.202	0.230	0.432
183.15 -262.12	0.181	0.273	0.454
262.12-420.84	0.164	0.312	0.476
420.84-611.88	0.149	0.350	0.499
611.88 -high	0.127	0.415	0.542

Probabilities of Usage per Month

pc consumpt (JS)	Public Facilities	Private Facilities	
low -183.15	0.032	0.037	0.069
183.15 -262.12	0.027	0.042	0.069
262.12-420.84	0.024	0.046	0.070
420.84-611.88	0.021	0.049	0.070
611.88 -high	0.017	0.055	0.072

Probabilities of Expenditure > 0 for Curative Care per Month
Conditional on visits > 0

pc consumpt (JS)	Public Facilities	Private Facilities
low -183.15	0.370	0.894
183.15 -262.12	0.422	0.891
262.12-420.84	0.467	0.889
420.84-611.88	0.509	0.887
611.88 -high	0.578	0.883

Probabilities of Expenditure > 0 for Curative Care per Month

pc consumpt (JS)	Public Facilities	Private Facilities
low -183.15	0.012	0.033
183.15 -262.12	0.012	0.037
262.12-420.84	0.011	0.041
420.84-611.88	0.011	0.044
611.88 -high	0.010	0.049

Mean of Expenditure for Curative Care per Month
Conditional on expenditure >0

pc consumpt (JS)	Public Facilities	Private Facilities	total
low -183.15	9.546	52.892	62.438
183.15 -262.12	10.259	56.046	66.305
262.12-420.84	10.892	58.812	69.704
420.84-611.88	11.515	61.501	73.016
611.88 -high	12.620	66.192	78.812

Mean of Expenditure for Curative Care per Month

pc consumpt (JS)	Public Facilities	Private Facilities	total
low -183.15	0.114	1.735	1.849
183.15 -262.12	0.119	2.077	2.196
262.12-420.84	0.122	2.386	2.508
420.84-611.88	0.124	2.690	2.814
611.88 -high	0.123	3.218	3.341

Simulated Probabilities and Means by Education
Aged 14 and Older
Table 4c

Probabilities of Illness per Month

Completed grade	
0	0.153
6	0.124
9	0.111
12	0.099

Probabilities of Usage per Month
Conditonal on Illness

Completed grade	PublicFacilities	PrivateFacilities	total
0	0.153	0.319	0.472
6	0.155	0.332	0.487
9	0.155	0.338	0.493
12	0.156	0.345	0.501

Probabilities of Usage per Month:conditonal on Illness

Completed grade	Public Facilities	Private Facilities	total
0	0.023	0.049	0.072
6	0.019	0.041	0.060
9	0.017	0.037	0.054
12	0.015	0.034	0.049

Probabilities of Expenditure > 0 for Curative Care per Month
Conditional on visits > 0

Completed grade	Public Facilities	Private Facilities
0	0.379	0.858
6	0.460	0.881
9	0.502	0.892
12	0.543	0.902

Probabilities of Expenditure > 0 for Curative Care per Month

0	0.009	0.042
6	0.009	0.036
9	0.009	0.033
12	0.008	0.031

Mean of Expenditure for Curative Care per Month
Conditional on expenditure >0

Completed grade	Public Facilities	Private Facilities	total
0	8.571	47.088	55.659
6	10.670	58.158	68.828
9	11.904	64.634	76.538
12	13.281	71.831	85.112

Mean of Expenditure for Curative Care per Month

Completed grade	Public Facilities	Private Facilities	total
0	0.076	1.966	2.042
6	0.094	2.101	2.195
9	0.103	2.156	2.259
12	0.111	2.203	2.314

Simulated Probabilities and Means by health insurrance
Aged 14 and Older
Table 4d

Probabilities of Illness per Month
overall mean= 0.141

Probabilities of Usage per Month
Conditonal on Illness

health insurrance	Public Facilities	Private Facilities	total
no	0.166	0.324	0.490
yes	0.070	0.458	0.528

Probabilities of Usage per Month

health insurrance	Public Facilities	Private Facilities	total
no	0.023	0.046	0.069
yes	0.010	0.065	0.075

Probabilities of Expenditure > 0 for Curative Care per Month
Conditional on visits > 0

health insurrance	Public Facilities	Private Facilities
no	0.457	0.888
yes	0.910	0.882

Probabilities of Expenditure > 0 for Curative Care per Month

health insurrance	Public Facilities	Private Facilities
no	0.011	0.040
yes	0.009	0.057

Mean of Expenditure for Curative Care per Month
Conditional on expenditure >0

health insurrance	Public Facilities	Private Facilities	total
no	10.700	68.419	79.119
yes	22.037	30.820	52.857

Mean of Expenditure for Curative Care per Month

health insurrance	Public Facilities	Private Facilities	total
no	0.114	2.770	2.884
yes	0.198	1.753	1.951

Simulated Probabilities and Means by Regions
Aged 14 and Older
Table 4e

Probabilities of Illness per Month

Regions	
West	0.114
South	0.117
Northeast	0.104
Southeast	0.115

Probabilities of Usage per Month
Conditonal on Illness

Regions	Public Facilities	Private Facilities	total
West	0.164	0.357	0.521
South	0.124	0.350	0.474
Northeast	0.101	0.349	0.450
Southeast	0.218	0.304	0.522

Probabilities of Usage per Month

Regions	Public Facilities	Private Facilities	total
West	0.019	0.041	0.060
South	0.014	0.041	0.055
Northeast	0.010	0.036	0.046
Southeast	0.025	0.035	0.060

Probabilities of Expenditure > 0 for Curative Care per Month
Conditional on visits > 0

Regions	Public Facilities	Private Facilities
West	0.251	0.905
South	0.507	0.892
Northeast	0.655	0.901
Southeast	0.524	0.862

Probabilities of Expenditure > 0 for Curative Care per Month

Regions	Public Facilities	Private Facilities
West	0.005	0.037
South	0.007	0.037
Northeast	0.007	0.033
Southeast	0.013	0.030

Mean of Expenditure for Curative Care per Month
Conditional on expenditure >0

Regions	Public Facilities	Private Facilities	total
West	24.134	69.040	93.174
South	13.726	55.493	69.219
Northeast	8.768	82.053	90.821
Southeast	9.491	53.553	63.044

Mean of Expenditure for Curative Care per Month

Regions	Public Facilities	Private Facilities	total
West	0.114	2.543	2.657
South	0.100	2.026	2.126
Northeast	0.060	2.679	2.739
Southeast	0.125	1.613	1.738