HEALTH INSURANCE PATTERNS OF THE POPULATION OF GUAM

Prepared by: Cynthia Naval
June 1986

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I. PURPOSE OF THE HEALTH INSURANCE SURVEY

The health insurance survey was conducted in an effort to discover what proportion of Guam's civilian, non-transient population were covered by health insurance, and what particular age or sex groups, if any, were significantly uninsured. If such groups were to be found, they could be targeted for more intense surveying at a later date to discover why they were uninsured. There was also interest in ascertaining the general population's attitudes toward the responsibility for payment of medical care.

To achieve these ends, a survey instrument was developed that contained questions about demographic characteristics (age, sex, ethnicity, years of education, veteran status, etc.), coverage by health and dental insurance by type, and three scenarios that had the respondent answer how they would pay for a doctor visit and hospitalization if they had no health insurance, and for an off-island medical referral if they had exceeded their health insurance's payment ceiling. The questions were developed by the Guam Health Planning and Development Agency staff, and pre-tested in-house for comprehensibility, specificity, and completion time.

II. SURVEY METHODOLOGY

The survey was conducted by the Department of Labor's Bureau of Labor Statistics as an addition to their quarterly Current Labor Force Survey (CLFS) of December 1985. The sample was chosen by the Bureau through the interval method: a list of all structures on the island is compiled, and for each quarterly survey a number of these structures are systematically selected to be added to an existing sample. At the same time, structures and households are removed from the sample each quarter. An individual household has the potential to be surveyed three times in a year before being removed from the sample. Though not stratified by the proportion of population in each village, the sampling frame is proportional to the number of structures in each village, and is felt to be representative of the distribution of the island's civilian population.

The survey was to take place during the third and fourth weeks of December, utilizing 26 trained interviewers. Due, perhaps, to it being the holiday season, the number of interviewers was reduced by attrition to only 9, and the survey time continued into January 1986. By the third week of January, the survey field work was completed, coding and call-backs were in progress, and GHPDA staff members were able to begin computer entry of the coded data.

The estimated number of structures to be approached during this survey was 1,800. Half of these were to be given the health insurance survey, for a maximum possible sample of 900 households. Only 361 completed, useable surveys were received back, and only 703 could be satisfactorily accounted for. There were 79 surveys refused outright, for a refusal rate of 8.78 percent. Other surveys were returned for various reasons: persistent not-at-homes; structures vacant, demolished or converted into businesses; and occupants ineligible for inclusion in the Current Labor Force Survey. One hundred eleven surveys were returned with no information or notation as to the status of the structure. It is believed that the CLFS sample size was reduced because of the smaller number of interviewers available, and that these blank surveys were never brought to the field.

The 361 completed surveys represented a 40.11 percent return rate. It is believed that the results of analyses performed on the sample population are valid and reliable because they compare well with expected values based on the 1980 Federal Census of the population of Guam, and other surveys of the civilian population.

III. CHARACTERISTICS OF THE SAMPLE POPULATION

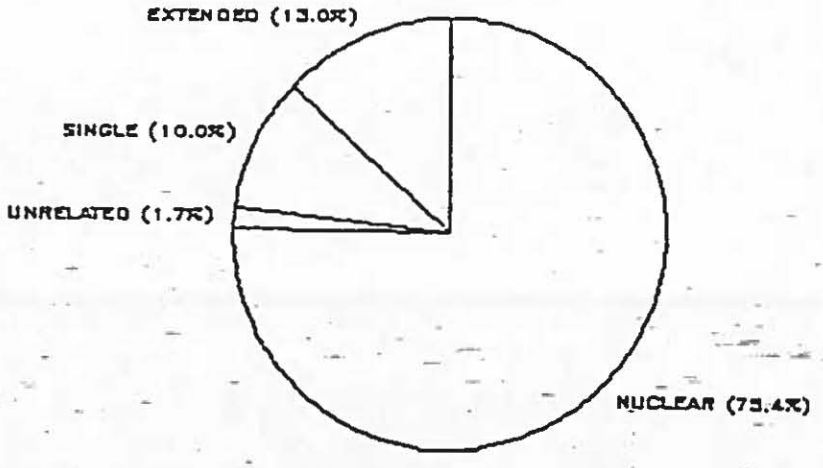
The 361 completed surveys produced a sample population of 1,530 persons. The mean household size of the sample population was 4.24 persons per household; the median size was 4.53 persons, and the modal household size was 3 persons per household. The 1980 Federal Census of the population of Guam reported a mean household size of 4.07 persons, a median size of 4.24 persons, and a modal household size of 4 persons per occupied house. The 1984 Islandwide Survey of the Health Status of the Population of Guam, conducted as a joint venture between GHPDA and the University of Guam's Community Development Institute, sampled the civilian population of the island, and reported a mean household size of 4.82 persons, a median size

of 4.94 persons, and a modal household size of 4 persons per household. The smaller household sizes reported from the Census are almost entirely due to the inclusion of the military population, who tend to have smaller nuclear families than the local population. The mean and median household sizes reported in the CDI report may have been slightly inflated by their undersampling of apartment houses, and oversampling of single family dwellings. This is based on the assumption that those persons who reside in apartment buildings have smaller family sizes than those who live in single family houses. There were no significant differences between the household sizes reported in the Census or the CDI survey and the present survey. The mean and median household sizes of the present survey fall in between those reported from the Census and the CDI survey, which helps to substantiate the validity of the present survey results.

The sample population contained 272 (75.35%) nuclear family households. A nuclear family was defined as a household made up of a head of household, spouse, and their own children. The most common size of a nuclear household was 3 persons. Extended family households, of which there were 47 (13.02%) in this sample, are made up of head, spouse, own children, parents, in-laws, siblings, grandchildren, and/or other relatives. The majority of extended family households had 5 members; the largest was composed of 16 persons. There were 36 (9.97%) single member households, and 6 (1.66%) households made up of unrelated persons. The unrelated households tended to be made up of single persons of the same sex, and the child of one of those adults, living together.

FIGURE 1

PERCENT OF HOUSEHOLD TYPES

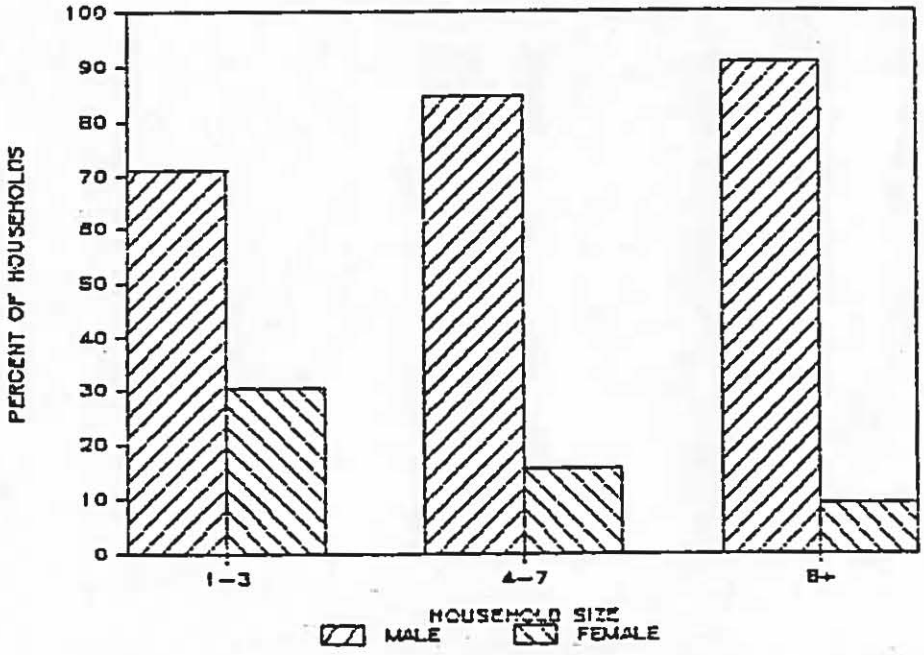


Nearly 80 percent of the households in the sample were headed by males, with this percentage increasing as the size of the household increased. For the 151 households with 1 to 3 persons, 107 (70.86%) were headed by males. This rose to 84.57 percent of the 4 to 7 person households, and 90.91 percent of those with 8 or more members.

The 1,530 individuals encompassed in the survey were almost evenly divided between the sexes: 50.92 percent were males, and 49.08 percent were females. This produced a sex ratio of 1.04 males to females, somewhat different from that of the 1980 Census (1.09) but not significantly so. It was identical to that of the 1984 Health Status Survey, which was limited to the civilian population, while the Census included the primarily male military population.

FIGURE 2

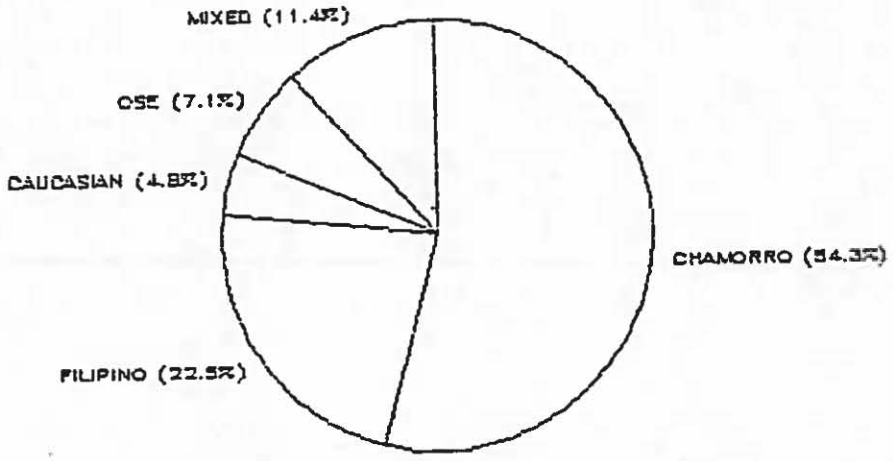
HEAD OF HOUSEHOLD
By Household Size



All of the major ethnic groups on the island were represented in the sample population. Chamorros made up 54.25 percent of the sample, Filipinos 22.48 percent, and Caucasians 4.77 percent. Micronesians accounted for 3.07 percent of those included in the survey, Asians 2.35 percent, Other Single Ethnic Groups (OSE) 1.24 percent, and Mixed Ethnic Groups 11.44 percent. Blacks were counted separately at first, and made up less than one percent of the sample population. In later calculations, Blacks, Micronesians, Other Single Ethnic Groups, and Mixed Ethnic Groups were merged into a larger Other Ethnic Group to provide more meaningful statistics.

FIGURE 3

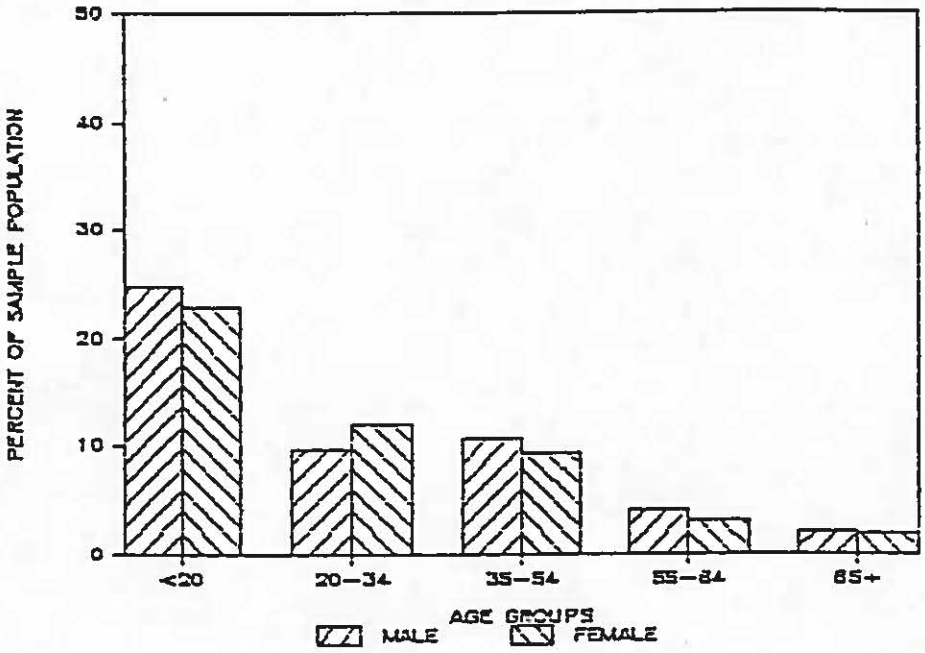
PERCENT OF SAMPLE POPULATION BY RACE



When the survey population was divided into age groups, 47.58 percent were found to be under the age of 20 years, 21.57 percent were 20 to 34 years, 19.87 percent were 35 to 54 years, 6.99 percent were 55 to 64 years, and 3.99 percent were over 65 years old. The smallest age-sex group in the sample population was the 65 and over females; the largest was the males under 20 years old. The median age of the sample population was 21.62 years; that of the males in the sample 21.18 years, and the females 22.03 years. These compare well with the median ages found in the 1980 Census and the 1984 Health Status Study, both of which were 22.2 years.

FIGURE 4

PERCENT OF SAMPLE POPULATION
By Age Groups

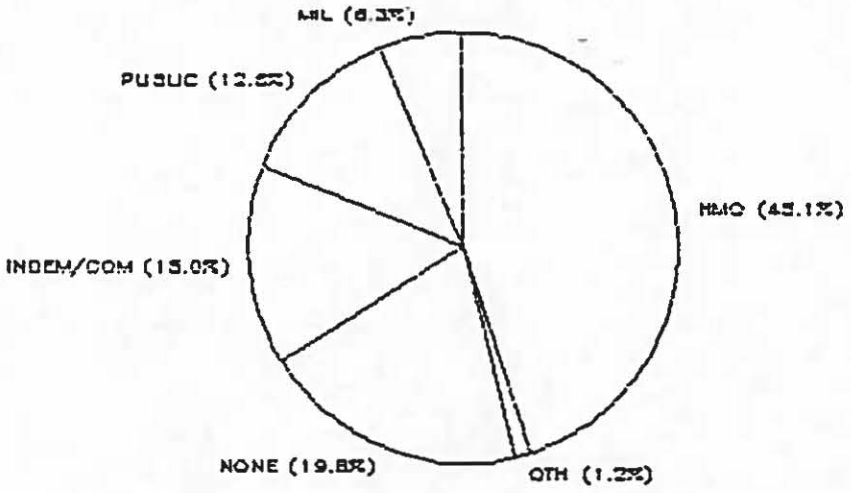


IV. HEALTH INSURANCE COVERAGE

There were 1,227 persons covered by some form of health insurance; this was 80.20 percent of the sample population. Of those reporting insurance coverage, 37.33 percent said that they had FHP; 18.91 percent had GMHP; 3.91 percent had HML; and 3.83 percent had Staywell. Twelve and a half percent of the insured population reported that they were covered by Medicaid; 8.88 percent had commercial insurance; 7.82 percent used the military facilities; 3.26 percent had some form of Medicare coverage; and 3.59 percent reported some other form of health insurance. The remainder of the sample population, 19.80 percent, reported no health insurance coverage. When reported as proportions of the entire sample population, and regrouped into more general categories, these percentages become: 45.10 percent covered by HMOs; 12.61 percent by public insurance; 14.97 percent in an indemnity/commercial plan; 6.27 percent by military services; 1.24 percent by other insurance; and 19.80 percent by no health insurance at all.

FIGURE 5

PERCENT WITH HEALTH INSURANCE
By Type



There were 274 (75.90%) households where all members had health insurance, 37 (10.25%) where only some members were covered, and 50 (13.85%) households where none of the members had any form of health insurance. The median size of those households with full coverage was 4.50 persons; households with partial coverage had a median size of 5.67 persons; and those with no coverage had a median size of 4.28 persons. Nearly 80 percent of the households with full coverage were nuclear families, and 8.39 percent were extended families.

Of the 274 households with full insurance coverage, 216 (78.83%) were headed by males. This was similar to the partially insured households (83.78%), and those with no insurance (78.00%). Forty-three percent of those with full insurance coverage lived in households with one to three persons, 51.46 percent in homes with four to seven persons, and 5.11 percent in households with over eight persons. The partially insured had slightly larger household sizes: 35.14 percent in one to three person homes, 54.05 percent in four to seven person households, and 10.81 percent in houses with eight or more people. Those with no coverage fell in the middle, numerically: 38 percent in homes with one to three people, 54 percent with four to seven persons, and 8 percent in houses with eight or more residents. A chi-square statistical test of association was performed to see if there was any bias towards smaller family sizes for those with more complete coverage. The results were not significant. Household size did not seem to be a factor determining the extent of coverage a household had.

TABLE 1

Characteristics of Households
By Extent of Insurance Coverage

Type Of Coverage	# Of HH	%	Gender of Head Male	%	Female	%	Percent By Household Size 1-3	4-7	8+
Full	274	75.90	216	78.83	58	21.17	43.43	51.46	5.11
Partial	37	10.25	31	83.78	6	19.35	35.14	54.05	10.81
None	50	13.85	39	78.00	11	22.00	38.00	54.00	8.00
TOTAL	361	100.00	286	79.22	75	20.78	41.83	52.08	6.09

Those households with partial insurance were examined more closely to discover which family members were not covered by health insurance. The majority (43.42%) were sons of the head of household, followed by daughters (18.42%), granchildren (14.47%), and spouses of the head (7.89%). All other relatives of the head of household, and unrelated persons accounted for 13.16 percent and 2.63 percent of the total, respectively. Males between the ages of 22 and 29 years made up the largest group of uninsured persons in partially insured households (21.18%), followed by females between 22 and 29 years (14.12%), 18 to 19 year old males (8.24%), and 20 to 21 year old males (5.88%). Another way to look at these numbers is to correlate them to participation in the work force or attendance at school. From the ages of less than 1 year to 17 years, when one is legally a minor and usually resident at one's parents' home, only 19 persons (22.35%) were uninsured in partially insured homes. Those persons from age 18 to 24, when one is usually out of school or college and entering the work force, made up 37.65 percent of the uninsured. The working ages from 25 to 64 years had 32.94 percent of the uninsured in partially insured homes, and the elderly represented the remaining 7.06 percent of uninsured.

FIGURE 6

RELATIONSHIP TO HEAD OF HOUSE
For The Uninsured In Part Insured HH

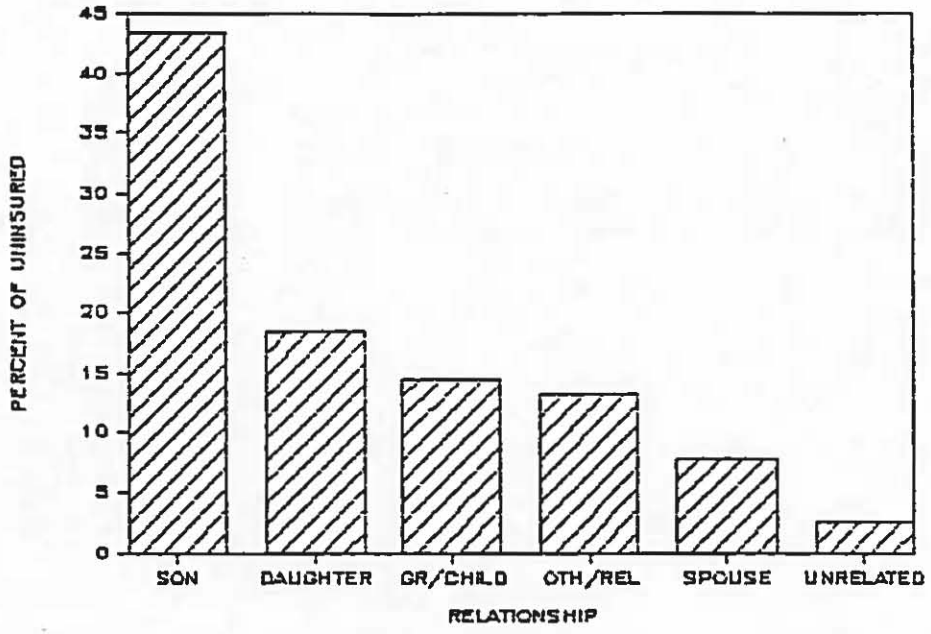


TABLE 2

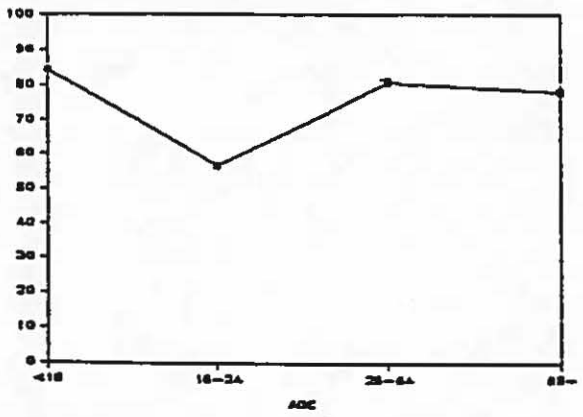
Age and Sex of the Uninsured
In Partially Insured Households

Age	Male	% Of Males	Female	% Of Females	Total	% Of Total
< 17	9	18.37	10	27.78	19	22.35
18-24	21	42.86	11	30.56	32	37.65
25-64	17	34.69	11	30.56	28	32.94
65+	2	4.08	4	11.11	6	7.06
TOTAL	49	100.00	36	100.00	85	100.00

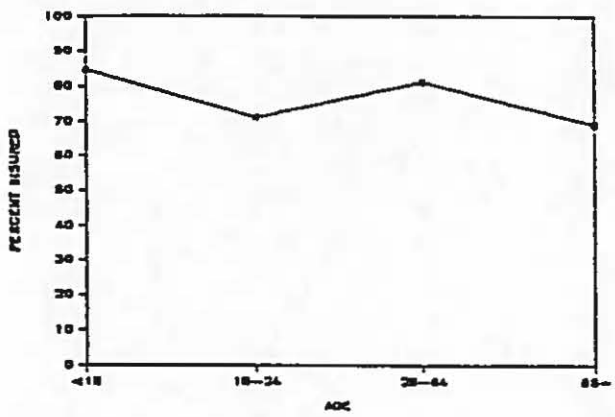
When examined as individuals rather than households, a similar age-associated pattern of insurance coverage is followed. For the 663 persons under the age of 18, there were 561 (84.62%) covered by health insurance. This dropped to 63.93 percent coverage for those in the 18 to 24 year old group, rose to 80.90 percent in the working ages of 25 to 64, and again dipped, in the oldest age group, to 73.77 percent coverage. In all but the oldest age group, women had a higher proportion of their population insured than did men. However, the only age group for which this difference in proportion insured was statistically significant was in the 18 to 24 year old age group. In this group, men had a significantly smaller proportion of their members insured than did women.

FIGURE 7

MALES WITH HEALTH INSURANCE
By Age



FEMALES WITH HEALTH INSURANCE
By Age

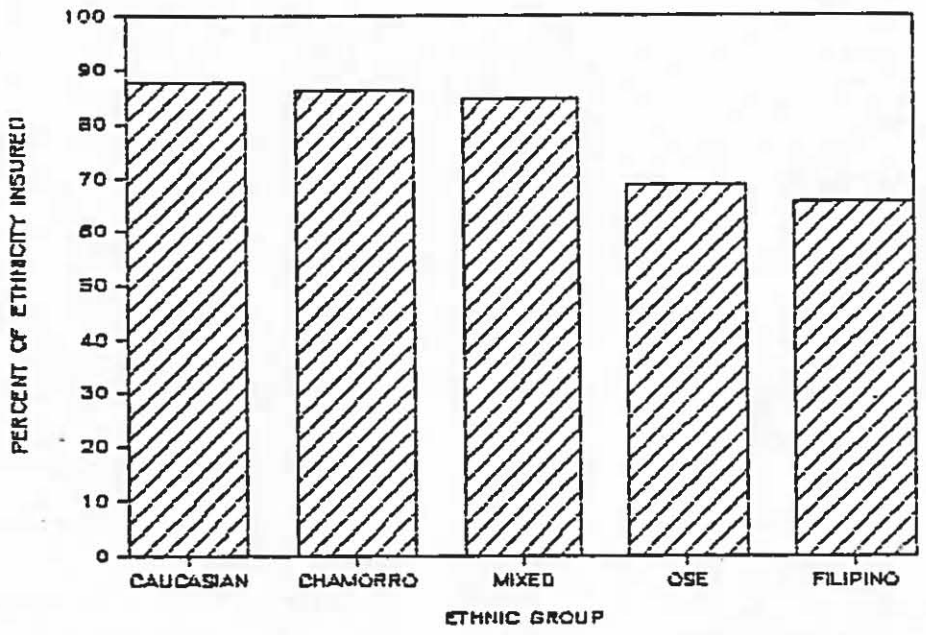


Ethnicity also seemed to be related to health insurance coverage. Caucasians had the highest proportion of their ethnic group insured at 87.67 percent, followed by Chamorros at 86.14 percent. The mixed ethnicities group was next at 84.57 percent. The group made up of Other Single Ethnicities (Micronesians, Asians, Blacks, and other ethnicities), and the Filipinos had the lowest proportions of their ethnic groups insured, with 68.52 percent and 65.70 percent covered, respectively. The chi-square test of statistical association was performed on this data to see if the differences in proportions insured by ethnicity were statistically significant. The results were significant

at the .001 level of probability, with the largest contributors to the chi-square value being the uninsured Filipinos and Chamorros. The Filipinos appeared to be significantly uninsured, and the Chamorros overinsured, based on their proportions in the sample population.

FIGURE 8

PERCENT WITH HEALTH INSURANCE
By Ethnicity



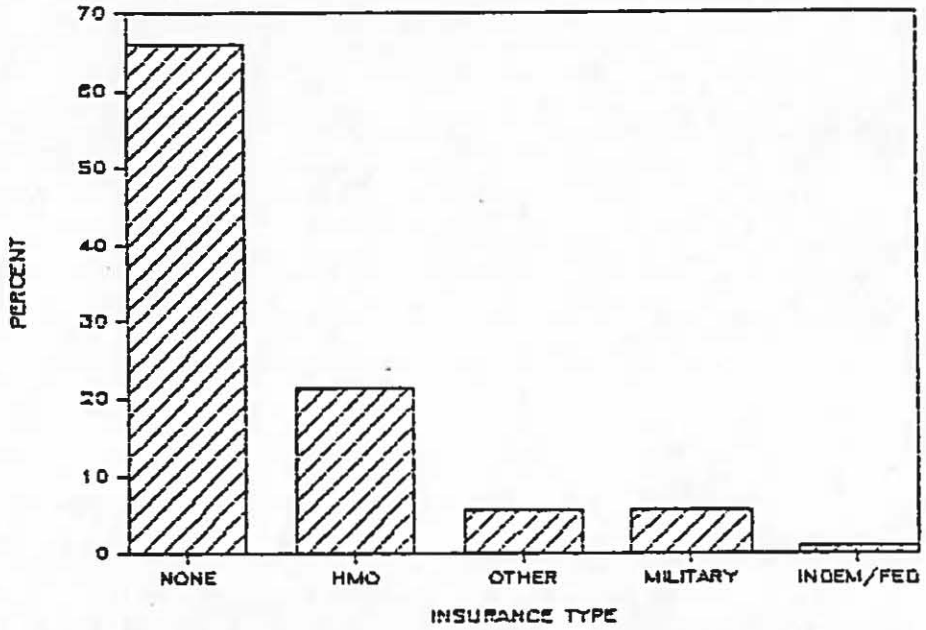
When the variable of sex was joined with race to see if there were any gender differences in proportions insured within ethnic groups, the results were found to be not significant. The Filipino females had a level of coverage that was just as low as their male counterparts, while the male Chamorros had as high a level as the female Chamorros. Ethnicity was a more important factor relating to insurance coverage than was gender. An attempt to discover whether age-race combinations were significant resulted in small numbers that tended to fluctuate too much to provide any meaningful results.

V. DENTAL INSURANCE COVERAGE

There were only 518 (33.86%) persons reporting dental insurance coverage of the 1,530 included in the survey. Of the 518, the largest proportion, 63.51 percent, belonged to an HMO; 16.99 percent had other insurance plans; 16.60 percent received care from military sources; and the final 2.90 percent were members of an indemnity/federal plan. Nearly two-thirds of the sample had no dental insurance coverage.

FIGURE 9

PERCENT OF DENTAL INSURANCE
By Type



There were 108 (29.92%) households with full dental insurance coverage; 29 (8.03%) with partial coverage; and 224 (62.05%) with no insurance. The median family size of those with full coverage was 4.50 persons; households with partial insurance had a median size of 5.63 persons, and those with no coverage had an average size of 4.58 persons per household. Eighty-one percent of the households with full coverage were nuclear families, and 5.56 percent were extended.

Of the 108 households with full coverage, 96 (88.89%) were headed by males. This was similar to the partially insured households (89.66%), and slightly

higher than the homes with no coverage (73.21%). A chi-square test of association was performed on the data, with significant results: the extent of insurance coverage of a household seemed to be associated with the gender of the head of household. Men seemed to head a higher proportion of the households with full coverage than would be expected, and women seemed to head a higher percentage of households with no dental insurance coverage than would be expected from their proportions in the population.

Forty-four percent of households with full insurance coverage were made up of one to three persons, 53.70 percent had four to seven persons, and the remaining 2.78 percent had eight or more persons. For the households with partial insurance, 24.14 percent were of one to three people, 58.62 percent of four to seven members, and 17.24 percent of eight or more. The homes with no dental coverage were similar to those with full insurance: 43.30 percent were made up of one to three people, 50.45 percent had four to seven persons, and 6.25 percent had eight or more members. A test of association was run on the data to see if there was a bias towards smaller family size for those with higher levels of insurance. The results were statistically significant (p=.025), but there was no discernible trend of lower coverage with higher family size. Those households with partial insurance contributed the most to the chi-square value. When the partial category is eliminated, the households divided into "insured" vs. "non-insured," the results are found to be not significant. The effect of household size on partial dental insurance should be explored in more detail.

TABLE 3

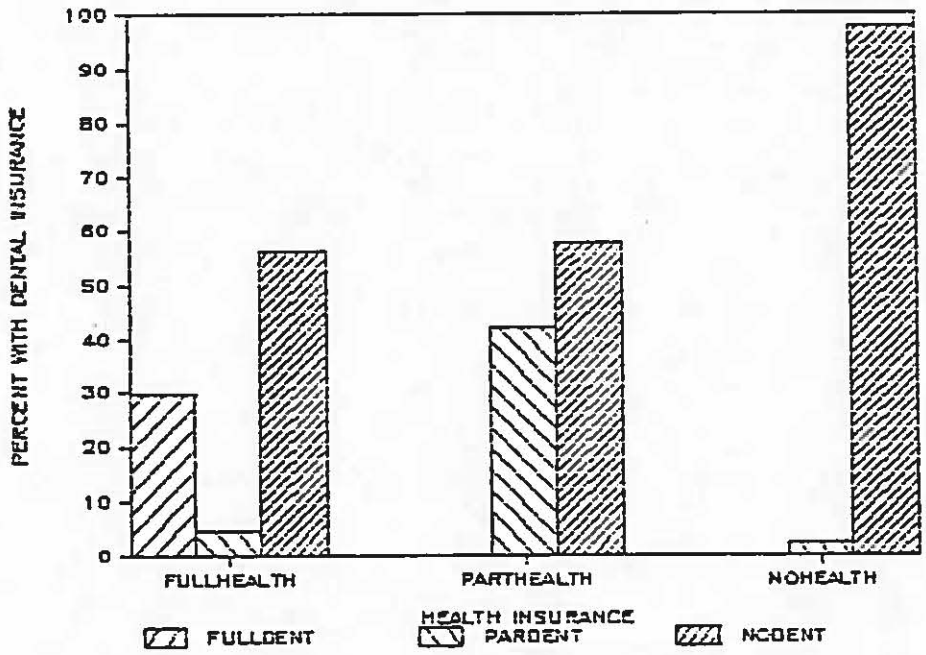
Characteristics of Households By Extent of Dental Insurance Coverage

Type Of Coverage	# Of HH	% Of HH	Gender of Head				Percent By Household Size		
			Male	%	Female	%	1-3	4-7	8+
Full	108	29.92	96	88.89	12	11.11	43.52	53.70	2.78
Partial	29	8.03	26	89.66	3	10.34	24.14	58.62	17.24
None	224	62.05	164	73.21	60	26.79	43.30	50.45	6.25
TOTAL	361	100.00	286	79.22	75	20.78	41.83	52.08	6.09

It was of interest to the Agency to discover whether or not there seemed to be a significant number of households that had health insurance but no dental insurance. In all categories of health insurance coverage (full, partial, none), the largest category of dental coverage was "none." This ranged from 56.04 percent of those who had full health insurance, to 57.89 percent of those with partial health coverage, to 98 percent to those with no health coverage. It was found that only those households that had full health insurance also had full dental insurance. Those homes with partial or no health insurance correspondingly had only partial or no dental insurance. This was nearly a straight line trend, except for the large number of homes with full health and no dental.

FIGURE 10

HEALTH INSURANCE BY DENTAL INSURANCE
By Number of Households

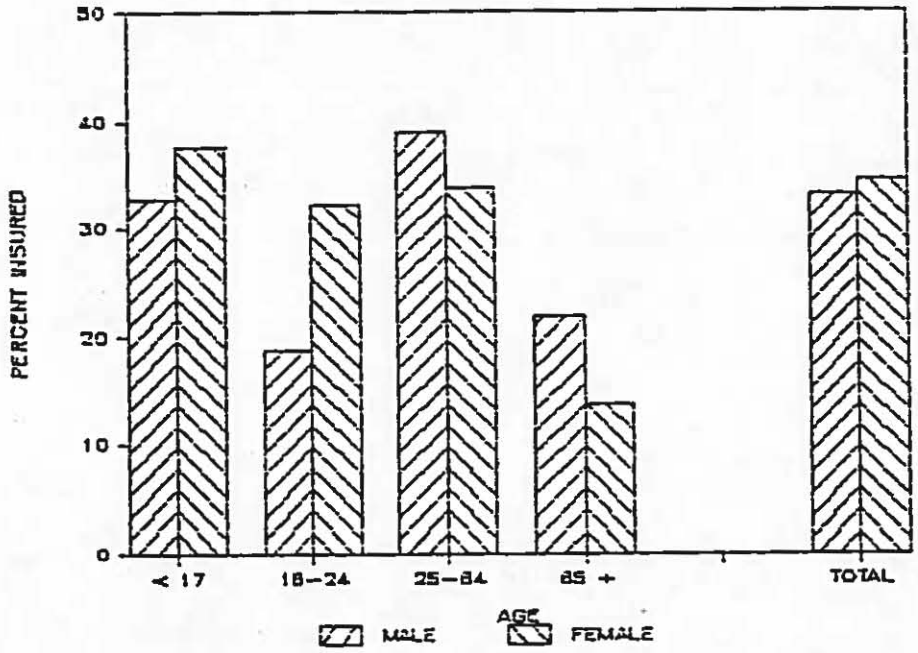


The extent of dental insurance coverage for individuals as opposed to households was examined, and followed nearly the same patterns established by health insurance coverage. The proportion of each age group with dental coverage was highest for those in the working ages of 25 to 64 (36.44%), followed by those under 18 years of age (35.14%). The 18 to 24 year olds were next, with 25.68 percent of their group covered, and those over 65

had the smallest percentage of their age group reporting dental insurance coverage (18.03%). Females (34.49%) had a higher overall percentage of their members covered than did males (33.25%), but only by a marginal amount. They also had the age-sex group with the smallest proportion of members covered: women over the age of 65 had only 13.79 percent coverage. The only age-sex group where the differences in proportions with dental insurance by sex was significant was the 18 to 24 year old group. The men had a much lower level of coverage than would be expected, based on their proportion of the population.

FIGURE 11

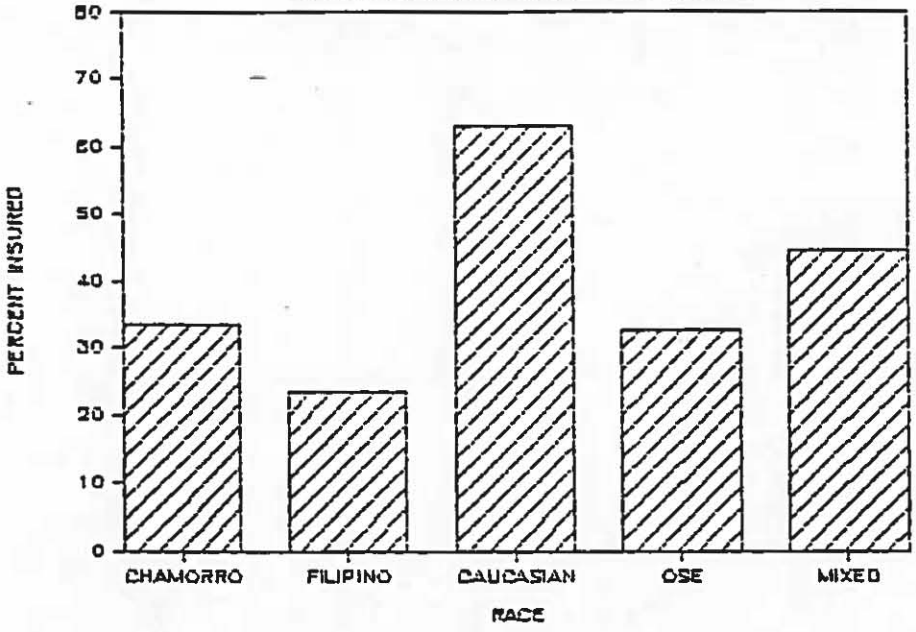
DENTAL INSURANCE
By Age and Sex



The ethnic group with the lowest level of dental insurance coverage were the Filipinos (23.55%); the group with the highest level were the Caucasians (63.01%). These differences in proportions insured by ethnic group were statistically significant, with the Filipinos being underinsured, and the Caucasians overinsured as compared to their percentages in the sample population. Age-race breakdowns fluctuated too much to give any meaningful results, so that it cannot be seen if there was a particular age group within each race that contributed more than others to the apparent ethnic differences in dental insurance coverage.

FIGURE 12

DENTAL INSURANCE BY RACE



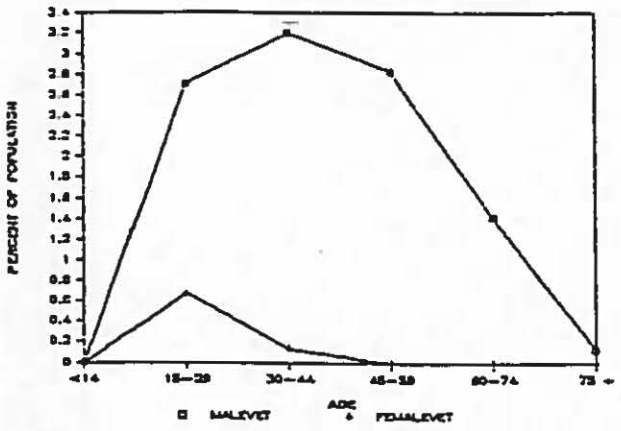
VI. VETERANS

There were 86 persons in the sample answering that they had performed some form of military service; this was 5.62 percent of the sample population. If this percentage were to be applied to the island's civilian population, there would be an estimated 5,512 persons eligible for VA services in 1986. This estimate seems a bit low, as the Veterans Office has reported at least 10,000 registrants as of 1986. It is not known, however, how many of these registrants are still alive and reside on Guam.

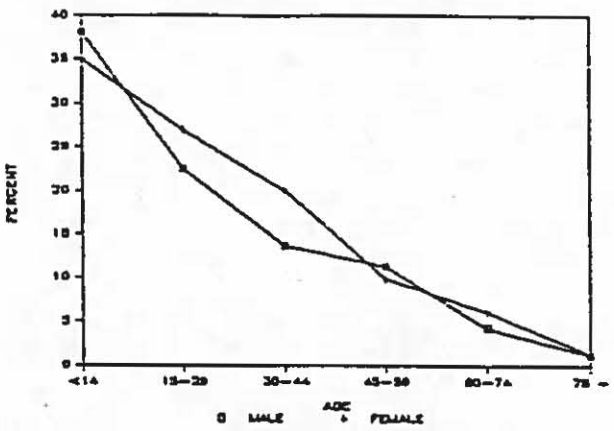
The veteran population was very different from the sample's non-veteran population in sex and age distributions. Eighty of the veterans (93.02%) were male, giving a sex ratio of 1,333.3 males to 100 females, in contrast to the sex ratio of 93.83 for the non-veteran population. The median age of the veteran population was 38.44 years against 15.15 years for the non-veteran population. This was due mainly to the male non-veterans' contribution: the median age for this group was 16.54 years; for the female non-veterans it was 23.05 years. The male veteran's median age was 40.42 years, and the females' was 23.5 years. This is not an unexpected result: it was not until recently that females were encouraged to join the Armed Forces, and those currently in the military would be younger than those who considered themselves veterans. They would also be away in service, and unable to be included in a survey such as this.

FIGURE 13

AGE AND SEX DISTRIBUTION
Of the Veteran Population



AGE AND SEX DISTRIBUTION
Of the Non-Veterans



Of the 86 veterans in the sample, 78 (90.70%) reported some form of health insurance coverage. For those with health insurance, 44.87 percent belonged to HMOs, 33.33 percent received service from the military, 14.10 percent had indemnity/commercial plans, and equal percentages (3.85%) relied on public or other insurance. The difference in proportions insured in each age-sex group between the veteran population and the non-veteran population proved to be statistically significant: there were significantly more veterans with health insurance in each age-sex group that they appeared in than there were non-veterans with health insurance in those same groups.

TABLE 4

Percent of Health Insurance Coverage
By Age/Sex/Veteran Status

	M A L E S					
Age	Insured Non-Vets	Non-Vets	% Ins	Insured Veterans	Veterans	% Ins
20-29	47	84	55.95	16	21	76.19
30-39	60	78	76.92	17	19	89.47
40-49	53	64	82.81	13	13	100.00
50-59	39	52	75.00	15	15	100.00
60-69	25	30	83.33	9	9	100.00
70-79	8	9	88.89	3	3	100.00
TOTAL	232	317	73.19	73	80	91.25

TABLE 5

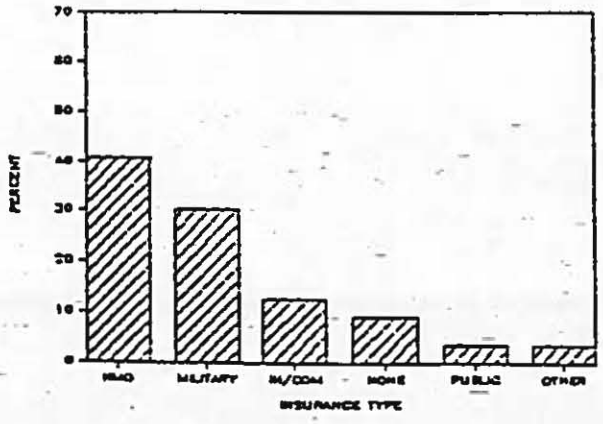
Percent of Health Insurance Coverage
By Age/Sex/Veteran Status

	FEMALES					
Age	Insured Non-Vets	Non-Vets	% Ins	Insured Veterans	Veterans	% Ins
20-29	76	115	66.09	4	5	80.00
30-39	100	117	85.47	1	1	100.00
40-49	46	57	80.70	0	0	0.00
50-59	44	50	88.00	0	0	0.00
60-69	31	42	73.81	0	0	0.00
70-79	5	7	71.43	0	0	0.00
TOTAL	302	388	77.84	5	6	83.33

As to what impact the age and sex distribution of the veteran population has on the extent of health insurance per age-sex group, it is believed to be minimal. The age and sex groups that the veterans belong in are those that were previously shown to have the higher levels of health insurance. While the veterans are proportionately more insured than the non-veterans in each age-sex group, they do not make up more than one-third of any such group, and so cannot be said to greatly influence the extent of insurance coverage in any particular group.

FIGURE 14

VETERANS WITH HEALTH INSURANCE
By Type

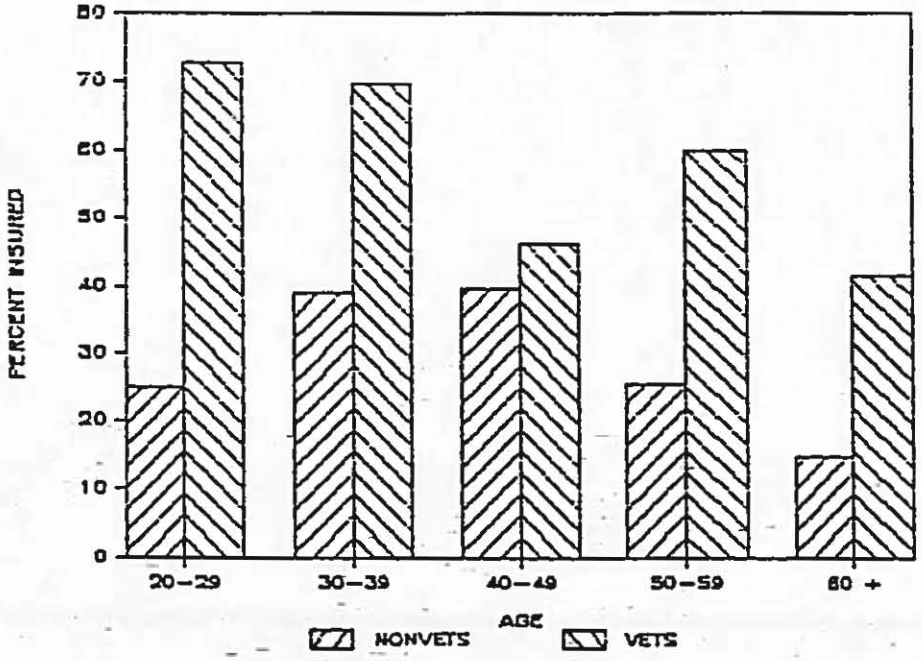


VETERANS WITH DENTAL INSURANCE
By Type

The veteran population also differed from the sample population in terms of dental insurance. There were 53 veterans (61.63%) with dental insurance; they represented 10.23 percent of those sampled who reported dental coverage. Of those with dental insurance, 43.40 percent belonged to an HMO, 7.55 percent had indemnity/federal plans, another 43.40 percent received care from military sources, and the remaining 5.66 percent had other dental coverage. As can be seen, the largest single source of dental insurance for this group was the military, as compared to only 16.60 percent for the dentally covered population as a whole, and 13.55 percent for the non-veteran dentally insured group. There was a significant association between veteran status and source of dental insurance: significantly more veterans received care from military sources than from other sources. There were also significantly more veterans with dental insurance than non-veterans with dental insurance. It may be assumed that these two trends are connected: with free dental care available to them from the military, veterans are more likely to report themselves as having dental insurance, and that insurance is most likely to be from a military source.

FIGURE 15

DENTAL INSURANCE COVERAGE
By Age and Veteran Status



VII. RESPONSIBILITY FOR PAYMENT SCENARIOS

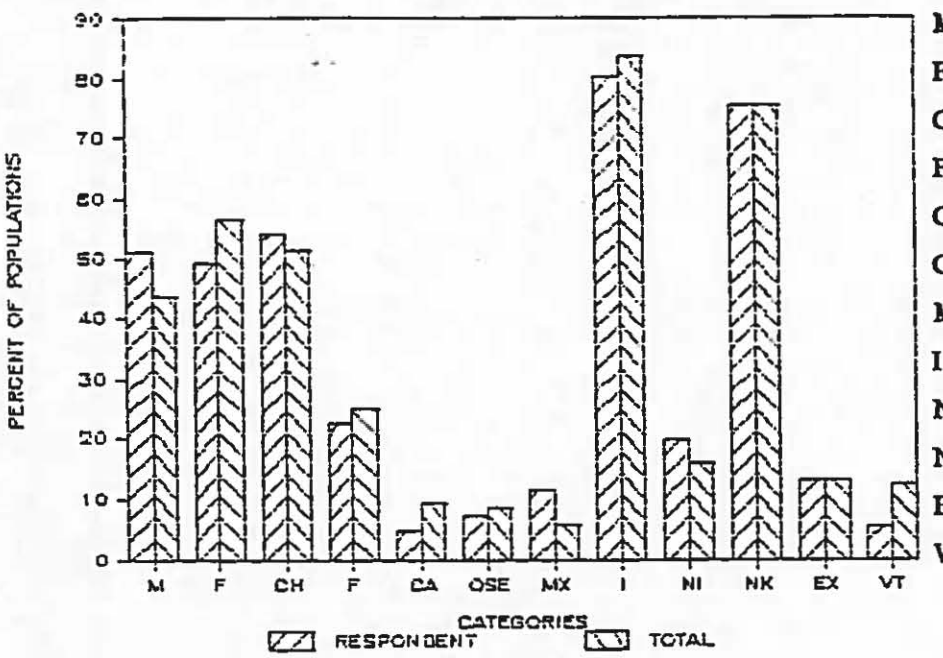
The three responsibility scenarios dealt with a doctor's office visit and hospitalization without the patient having health insurance, and an off-island medical referral whose cost exceeded the ceiling allowed by the patient's health insurance. The responses were elicited from those answering the survey regardless of insurance coverage status; in fact, they were told to assume that they had no insurance before answering. The respondents were asked to rank their replies in order from most likely, second most likely, and third most likely course of action. The possible replies ranged from making payment arrangements with the clinic or hospital, borrowing from several sources, selling property or resources, or applying for help from a Government program or community organization. There was also an open answer space, but it was rarely used. Separate tabulations were done for veterans, the insured and non-insured populations, by sex, racial group, by household size and type, and for the entire respondent population.

The responses were ranked in two ways: by a point system according to the rank assigned, and by number of times chosen as a first place answer. The point system assigned 3 points for a first place ranking, 2 for second, and 1 for third, then all points were summed for a total score. The response with the greatest number of points overall, per scenario, was decided upon as the most popular response by virtue of being chosen often. Responses were also ranked only by number of first place choices, on the assumption that the choice with the most first place votes was the most likely that the majority of respondents would follow. As it turned out, both methods of ranking came up with the same results, with only minimal differences, and those differences usually caused by small numbers in a particular subgroup.

Of the 361 persons aswering the scenarios, 157 (43.49%) were males and the remaining 204 (56.51%) females. Eighty-four percent were covered by some form of health insurance; 13 percent considered themselves veterans; and the major ethnic groups were represented as follows: 51.25 percent Chamorro, 25.21 percent Filipino, 9.14 percent Caucasian, 8.59 percent Other Single Ethnic Groups and 5.82 percent Mixed Ethnic Groups. There were 272 (75.35%) nuclear family and 47 (13.02%) extended family household members answering the scenarios.

FIGURE 16

COMPARISON OF POPULATIONS
Respondent Vs. Total



KEY	
M	Male
F	Female
CH	Chamorro
F	Filipino
CA	Caucasian
OSE	Other Single Ethnicity
MX	Mixed Ethnicity
I	Insured
NI	Not Insured
NK	Nuclear
EX	Extended
VT	Veterans

The total respondent population, when ranking their answers to the visit scenario, gave the following three answers first, second and third place, respectively: make payment arrangement with the physician/clinic, apply for a Government program, and borrow from relatives. This same order of rankings was almost identical for every group tabulated. Any discrepancies were due to small numbers--for example, there was only one extended family of size 16. Their choices for scenario responses would be assumed to have the same weight as the choices made by the extended families of size 5, of which there were 10. However, the choices of one family are not stable enough to base trends on, so when discrepancies appeared and could be attributed to small subgroup sizes, they were ignored. Tabulations were often recalculated with larger groups (extended families of size 6 and below, extended families of size 7 and larger) to see if trends held constant, and in all cases they did. It may safely be said that for this sample group, the payment options of choice, when faced with a doctor's visit and having no health insurance, would be to make payment arrangements, then apply for a Government program, then borrow from relatives to pay the bill.

SCENARIO QUESTIONS AND POSSIBLE RESPONSES

1. You have no health insurance. You have recently been experiencing frequent headaches and would like to see a physician. You are not sure how much it will cost, or if you can afford it. Would you:

   A. Skip the visit.

   B. Go ahead with the visit.

   If you went ahead with the visit, how would you arrange for payment? (Of the options listed below, please rank 3 in order of preference, with 1 being your first choice and 3 your last.)

   A. Make payment arrangement with the physician/clinic.

   B. Borrow from relatives.

   C. Apply for a Government program (i.e., Medicaid, Medically Indigent Program, Department of Vocational Rehabilitation, V.A., etc.)

   D. Sell property/resources.

   E. Other (Specify)

2. You have no health insurance. You are ill and are admitted to the hospital. You are told that the average cost for a hospital stay is $5,000. How will you arrange for payment? (Of the options listed below, please rank 3 in order of preference, with 1 being your first choice and 3 your last.)

   A. Make payment arrangements with the hospital.

   B. Seek a bank loan.

   C. Borrow from relatives.

   D. Apply for a Government program (i.e., Medicaid, Medically Indigent Program, Department of Vocational Rehabilitation, V.A., etc.)

   E. Sell property/resources.

   F. Other (Specify)

3. Your physician has advised you that you must go off-island for medical treatment. Your health insurance company had indicated to you that the average cost of the treatment you are seeking will exceed the available coverage by $20,000. You have decided to seek treatment anyway. Which of the following options would you pursue to meet the excess costs? (Please rank 3 of them in order of preference, with 1 being your first choice and 3 your last.)

A. Make payment arrangements.

B. Seek a bank loan.

C. Borrow from relatives.

D. Apply for a Government program (i.e., Medicaid, Medically Indigent Program, Department of Vocational Rehabilitation, V.A., etc.)

E. Sell property/resources.

F. Seek help from community organizations (i.e., Lions, Jaycees, etc.)

G. Other (Specify)

TABLE 6

Responses to Scenarios for Total Population

Payment Option	1st Choice	2nd Choice	3rd Choice	Total Points	Rank
Visit A	221	42	9	756	1
Visit B	15	72	74	263	3
Visit C	96	79	56	502	2
Visit D	3	8	27	52	
Visit E	15	10	19	84	
Hospital A	230	32	10	764	1
Hospital B	12	118	41	313	3
Hospital C	5	27	51	120	
Hospital D	99	45	82	469	2
Hospital E	4	6	31	55	
Hospital F	10	2	5	41	
Trip A	208	19	29	691	1
Trip B	14	102	14	260	3
Trip C	13	23	34	119	
Trip D	105	62	50	489	2
Trip E	12	10	44	100	
Trip F	1	14	45	76	
Trip G	6	2	5	27	

The second scenario dealt with an unexpected hospitalization ordered by the respondent's physician. Again, the respondent was told to imagine that he had no health insurance, then choose which methods of payment he would be most likely to implement. The overwhelming first choice, as with the physician visit scenario, was to make payment arrangements with the hospital, followed by applying for a Government program, and seeking a bank loan. Again, following the trend of the visit scenario, there were virtually no differences between tabulation subgroups with respect to rankings.

The final scenario was different from the preceding two in that it assumed that the respondent had health insurance, but because of an off-island medical referral, would exceed the payment ceiling of that insurance by $20,000. The payment choices that the respondent would make would be done in an effort to meet the excess costs from the trip. As with the previous two scenarios, the first choice would be to attempt to make payment arrangements, followed by applying for a Government program, and then to seek a bank loan to meet the excess costs. There were no differences between any of the subgroups (male, female, extended family, nuclear family, Chamorro, etc.) with respect to the order of payment choices.

It would seem from the responses gained in a random survey that the civilian population feels a great deal of responsibility towards the payment of health care costs. Even when faced with a catastrophic situation, albeit imaginary, the first response is to attempt to make restitution, even if it must be spaced out over time. The second response is to go to the Government for assistance, and the third to a lending institution. It may be felt by the average person that a Government program set up for the purpose of helping people in the situation that was presented would be easier to approach for help than a bank or savings and loan company. It cannot be construed that the people answering the survey feel that the Government should foot the tab for health care costs if one cannot do so oneself, though there may be a few individuals who do hold these views.

VIII. SUMMARY AND RECOMMENDATIONS

Three hundred sixty-one households throughout the island responded to the health insurance survey, producing a sample of 1,530 persons. The mean, median and modal household sizes of the sample population were 4.24, 4.53,

and 3 persons per household, respectively. The sample population was 50.92 percent male and 49.08 percent female. Ethnically, it was 54.25 percent Chamorro, 22.48 percent Filipino, 4.77 Caucasian, 7.06 percent Other Single Ethnicity, and 11.44 percent Mixed Ethnicity. The largest proportion of the sample was under the age of 20: 47.58 percent, followed by those 20-34 years (21.57%), 35-54 years (19.87%), 55-64 years (6.99%), and the elderly over 65 (3.99%). There 272 nuclear, 47 extended, 6 unrelated and 36 single person households. The majority of the households were headed by males. All households, regardless of insurance coverage, were similar in gender of household head and size of household, those with partial health insurance coverage tended to have more members.

Those members of partially insured households who were uninsured were generally males, sons of the head of household. Though no data was gathered on work force participation or income in this survey, it was assumed that these uninsured persons were either unemployed, students, or newly entering the work force, and had not yet acquired health insurance, or had no plans or means to.

Of the 1,530 persons covered in the survey, 80.20 percent had some form of health insurance. Most of those with coverage belonged to an HMO (56.24 %). Insurance coverage followed an age-associated pattern: those less than 18 years of age had the highest level of coverage (84.62%), with the working ages next (80.90%), and the elderly after them (73.77%). The young adult ages of 18-24 had the lowest level of coverage at 63.93 percent. Males had a lower level of coverage in every age group, but this was only statistically significant in the 18-24 year group. Caucasians demonstrated the highest level of coverage among the racial groups (87.67%), Filipinos the lowest (65.70%). Filipinos were significantly underinsured and Chamorros overinsured based on their representation in the sample population. When speculating on why Filipinos were greatly uninsured, several possibilities come to mind, job force participation in fields where insurance was unavailable and a tendency towards "bartering" for services, including medical care, being two of them. This is one area that almost demands further research and follow-up.

Just slightly over one-third of the sample population had dental insurance, the majority of these belonging to an HMO. Only 29.92 percent of the survey hosueholds had full dental insurance; another 8.03 percent had partial coverage.

Gender of the head of household seemed to be associated with extent of dental insurance coverage: more households with full dental insurance were headed by males than would be expected based on the proportion of households headed by males in the sample population. There was also a statistically significant association between family size and dental insurance coverage, but only when partially insured households are included in the calculations. The relationship between partial dental coverage and household size is another area of further research to be explored.

When examining joint medical-dental coverage by households, it was found that most households with any level of health insurance had no dental insurance. Only those homes with full health insurance had full dental coverage, partially medically insured had more partially dentally insured than any other category of medical coverage, and 98 percent of those with no health insurance also had no dental insurance. Except for the high "none" response in each category, this was almost a straight line trend.

The extent of individuals with dental insurance was similar to that of those persons with health insurance coverage. Females, the working ages of 25-64, and Caucasians had the highest proportions of dental insurance coverage; males, the elderly, and Filipinos had the lowest. Though not statistically significant, female elderly had a very low percentage of dental coverage. This may be due to several factors, chief among which is the fact that very few women in this age group have ever worked. They have no pensions or retirement plans; they may be widowed or have husbands with no retirement benefits. Dental insurance is not a component of most benefit packages, so these women would not have access to dental insurance through that avenue. Dental insurance may also be considered a luxury, or a useless payment, to some, where health insurance would be a necessity.

Veterans were a small (5.62%) part of the sample population. They were generally male (93.02%), over 35 years of age (58%), and were covered by health (90.7%) and dental (61.63%) insurance. HMO's and the military were the most common sources of coverage for this group.

When faced with three situations where they were in need of medical care and either had no insurance or would exceed its coverage, the first choice of the 361 respondents with regards to reimbursement for this care is to attempt to make payment arrangements with the care providers. The second choice

is to apply for a Goverment program, followed by borrowing funds. The same rankings applied for every subgroup of the respondent population that was tested: age groups, racial groups, insured, uninsured, male, female. Only minimal fluctuations caused by small subgroups produced any differing responses, and these were generally for the second or third choice. This should help to discredit the myth of the local population that is ever ready to sponge off of the Government instead of assuming financial responsibility for itself.

Though helpful baseline data on insurance was obtained through this survey, there are still avenues left to explore. The relationships between type of job (i.e., Government service, private sector, etc.), income and insurance coverage need to be explored, as does the effect of household size on extent of household coverage with dental insurance. The question of insurance coverage and ethnicity may be answered by investigating job type as well, and more questions about people's attitudes towards insurance and health care may provide ideas for educational campaigns.