EXECUTIVE SUMMARY OF THE ISLAND-WIDE HEALTH BEHAVIOR PATTERNS SURVEY

VOLUME 1: SALIENT SOCIAL AND ECONOMIC CHARACTERISTICS

A COLLABORATIVE PROJECT BETWEEN
GUAM HEALTH PLANNING
AND DEVELOPMENT AGENCY
AND
UNIVERSITY OF GUAM - COMMUNITY
DEVELOPMENT INSTITUTE

SECTION EIGHT

SUMMARY OF FINDINGS

8.1 Residential Distribution

The 1,928 individuals studied were members of the 400 households that were selected to represent the entire civilian population of Guam. Using the 1980 Guam Census data as a basis, the GHPDA/CDI health project team defined the total population to be 84,979--residing in a total 23,549 households. Geographically, they were residing in the three major regions as follows: 50% in the North, 30% in the Central, and the remaining 20% in the South.

8.2 Household Size and Composition

The average number of persons per household was in the upper four range which was very similar to the number found in other recent surveys. The number of individuals residing in each household varied from one to as many as fifteen. The largest percentages, however, were in the three to five household members range. While the average size of households varied moderately on a village-by-village basis, the difference was slight with a trend toward larger households in the South when studied on a geographical region basis. The differences were believed to be more closely related to ethnicity than to the rural-urban factor.

The ethnic origin tended to correspond with household size. Those who were native to the island (Chamorros) and

those who had migrated the shortest distance (Other Islanders) had the largest households. Consistent with this hypothesis was the inverse relationship noted between average household size and the distance the various ethnic categories had migrated in order to reside on Guam.

8.3 Population Structure

On the average, the people of Guam are young. The median age of slightly over 22 in this study was equal to the average age found by the Federal Census enumerators several years earlier. Fourteen percent were 55 years or older. The sex-ratio (S-R) of 104.5 in this study tended to affirm the younger-population notion. This figure, as expected, was somewhat lower than the 109.2 S-R on the island in 1980 when the total population (including civilian and military persons) were enumerated. The disproportionate number of males in the Armed Forces clearly accounted for the difference in the two ratios.

Those of Chamorro ancestry not only comprised the largest ethnic category in the study but also represented a majority of the total 1,928 individuals. Filipinos made up the next largest category. Nearly nine out of every ten individuals in this health survey identified themselves as being either Chamorro or Filipino. None of the remaining major groupings or subpopulations made up more than 3.5% of the sample. The sex-ratio (S-R) of the various ethnic groups was found to support another migration hypothesis which suggests that males tend to be more mobile than females. In this study the sex-ratio ranged from 99.0 for the Chamorros (which suggests males

leave the island) to a high of 126.7 for the Caucasians, who had migrated the greatest distance.

8.4 Marriage

While the Federal Census reports marital status for all persons 15 years or older, the GHPDA/CDI survey planning team designated age 16 as the youngest age category to study. Only 2.0% of those who were married fell in the 16 to 21 age bracket. Approximately 58.0% of the 1,253 individuals age 16 and older were married. Of the 34.1% who had never married, 60.4% were under age 22. Over 86.0% of the elderly age 55 to 64 were married, while two-thirds of the oldest senior citizens (who were at least 65) were married, also. Thirty percent of this category were widowed.

8.5 Education

The number of years of school completed varied depending on one's age and geographical location of residence. Those in their early thirties had achieved an education level equivalent to approximately one year of college. It appeared that those who were younger had not had sufficient years to conclude their formal education, while the older persons probably did not have higher education opportunities. The median of 10.8 years of education was for all those age 16 and older.

A definite trend or direction was found in the average education level of the subjects and the geographical region in which they lived. The percentage of high school graduates and the percentage of those who had gone on to college increased when comparing the regions from South to North.

8.6 Financial Status

The final characteristic studied focused on the economic level of the subjects. It was believed to be an important factor related to one's level of health, also. There were 701 or 57.7% of the 1,215 individuals age 16 or older who had had income during the year immediately preceding the survey. Their median annual gross income was $10,727.

The 40 to 54 age category had the highest proportion (72.0%) of income recipients. This category of individuals also enjoyed the most income. The average yearly income earned was $12,780.

As expected, by far more males than females had incomes. The amount of income was also greater. Both relationships prevailed throughout the age range. Generally, males received 57% more income than their counterparts. This was equivalent to $5,249 on a 12-month basis.

Depending on one's ethnic identity, his chances of having an income (as well as the amount of that income) varied. Since ethnicity correlated with distance migrated, those who moved the greatest distance to the island tended to likewise have the higher incomes. This relationship held true only for males.

As household size increased the percentage of individuals in the household age 16 or older who were without income also increased. Total income per household, however, was found to increase as size of households increased from 1 to 10. The reverse trend tended to exist for those with 11 or more living in a single household.

While the median household income levels were above the projected poverty guidelines for the island, they were well within the guidelines of the federally sponsored Expanded Food and Nutrition Education Program. This would suggest that more than half the island population is eligible for this particular program. A more detailed analysis of the data collected in this islandwide survey would show more exact percentages of persons eligible for the various social services and assistance programs.

VOLUME 2: DENTAL NEEDS AND CARE

SECTION THREE

SUMMARY OF FINDINGS

3.1 Dental Services

Interviews were conducted in 400 households sampled at random from among all households located throughout the island. Those located on military bases and in institutions were not included. Of the 1,928 individuals found residing in the 400 households, 445 (23.1%) had gone to a dentist at least once during the 12-month period immediately prior to the survey.

The 445 individuals who had received dental services made a total of 995 dental visits for an average per person of 2.24 trips to the dental clinics. This average rate was equal to a dental visit every five months and eleven days.

The number of visits to a dentist for treatment or cure of a given condition ranged from one to nine. When comparing the Islandwide Health Behavior Study findings with comparable data from the Northern Area Health Status and Needs Survey of about five years earlier, a drop in the percentage of individuals who had gone to the dentist (as well as the number of dental visits) was noted.

3.2 Socioeconomic Factors

Some differences emerged among the three geographical regions of the island with regard to the proportion of individuals who had gone to a dentist. The Central had the highest rate of about 1:3.8. The South was next with 1 out of every 4

persons having made a dental visit, whereas the ratio in the North Region was the lowest at 1:5.

Only a slightly larger percentage of females than males received dental services. With regard to age, the 10-year-old children had the highest utilization rate. Nearly 55% were reported to have gone to a dentist over the year. Children at this age would generally be expected to be in the fifth grade. Children between the ages of 5 and 13 were more likely to have gone to a dentist than all others. There was a rapid decline in the percentage of youths who had gone to a dentist after age 13.

Caucasians were by far more likely to have gone to a dentist than those of the other major ethnic categories. Filipino and Asian individuals were least likely to have received dental services. There was a significant difference in the proportion of individuals who had gone to a dentist for care, depending on their income. Those in the low- to middle-income categories were significantly less likely to have been cared for by a dentist than were those who had received a higher annual income.

3.3 Dental Conditions and Related Visits

The 445 individuals who had gone to a dentist did so for a variety of reasons. Most (76.6%) went for care or treatment of only one condition, with 23.4% seeking care for a second condition and only 2.7% seeking care for a third dental condition treated. Nearly two-thirds of the dental visits were for having a dental check up and/or cleaning of teeth. Tooth extractions and/or fillings were the next most common dental

conditions treated. While some visits to the dentist did not require follow up visits, nearly 11.0% of all dental visits made were for conditions that required as many as six visits for treatment.

3.4 Dental Care Facilities

The 995 dental visits reported were made at 13 locations, or clinics. Slightly over one-third of all visits were to dentists at the DPHSS Dental Clinic in Mangilao. Children were almost exclusive users of this public service. By law, dental services are available without charge for children age 16 or younger--if received at the DPHSS Dental Clinic. The next most "popular" dental clinics were SDA and FHP. Both are located in Tamuning.

Not all children (83.0%) received dental care at the public clinic. The percentage of those having gone to DPHSS for dental care (out of all children who had received dental services) varied by age levels. Nearly 9 out of every 10 of the 10- and 12-year-old youths were reported to have gone there. The percentage, however, dropped to 22.0 for those age 15 and zero for those who were 16. The primary question not answered by this study was why so many individuals had not gone to a dentist even once during the 12-month period studied. This seemed even less clear in view of the public law that makes such services available to children at no cost.

3.5 Dental Insurance Coverage

Those who had gone to a dentist during the year were evenly divided between having or not having dental insurance

coverage. This study did not ascertain the rate of coverage among those who did not go to a dentist at all during the 12-month period.

Only a slightly larger percentage of females than males had dental insurance coverage. Approximately 7 out of every 10 Caucasians who went to the dentist had dental insurance. For Chamorros, the proportion was slightly over one-half, while for Filipinos, Other Islanders and Asians, about one-third who had received dental services also had dental insurance.

One's level of income did not correlate to his having dental insurance. No doubt this occurred as a result of dental insurance typically applying to the family rather than to just an individual.

3.6 Type of Insurance

Females more so than males were covered by GMHP and FHP for dental care, while males were more likely to have CHAMPUS (military), federal or "other" dental plans. Nearly one out of every four males who went to a dentist was covered through CHAMPUS or other federal programs. Chamorro individuals were more likely (35.0%) to be covered for dental care by FHP. Those identifying themselves as Filipino differed in that 47.0% were insured by GMHP. Caucasians received dental coverage in similar proportions from GMHP, FHP, military/CHAMPUS and "Other" insurance providers. It was noted that GMHP allows their clients to select their dentists while FHP primarily covers services provided by dentists associated with two specific clinics.

One's level of income was found to relate in somewhat strange ways to the type of insurance coverage held. Results suggest further study is needed to determine if, in effect, type of employment rather than income is a more direct causative factor. This study did not explain the clear distinction between GMHP and FHP with regard to income. It was reported that those who had incomes of $14,430 or less were more likely to be GMHP subscribers, while those receiving over $14,430 annually were more apt to have FHP dental coverage.

VOLUME 3: MORBIDITY

SECTION TEN

SUMMARY OF FINDINGS

10.1 Health Needs and Care

Included in this report is morbidity information derived from personal interviews with 400 individuals who represented a population of 84,979. Interviews were conducted in 400 households sampled at random from among all households located throughout the island. Those individuals residing on military bases and in institutions were not included. Of the 1,928 individuals who resided in the 400 households, 739 (38.3%) were identified as having had a health condition that affected their normal or usual activity during the prior year.

A statistical analysis of the personal-social characteristics of gender, ethnicity and age revealed that females were more likely than males to have had or reported a health condition for which they received medical attention. Similar to findings in a Hawaii Health Study (6), Filipinos were less likely than would be expected to have had a health condition. This study indicated that Chamorros and Caucasians were overrepresented (or more likely to have had a health condition than would be expected) based on their proportions in the sample.

A total of 131 specific health conditions were identified and categorized into four main areas. These were disabling, catastrophic, chronic, and acute conditions. Those diseases

and illnesses for which treatment is provided without charge by Guam Law were considered independently.

Acute conditions represented 78.7% of all health conditions reported while chronic conditions made up an additional 19.7%. Only 0.7% were catastrophic in nature, while 0.5% were mental illness and 0.4% physical disabilities.

Caucasians and children less than 16 years of age were found to have had acute health problems beyond the expected levels. Filipinos and persons 16 and over were less likely to have had them.

Females, Chamorros and persons 40 years or older were more likely than other groups to have had catastrophic or chronic health problems. Filipinos continued to be underrepresented in this analysis, except in the case of arthritis.

The study indicates that females were much more likely to experience kidney problems, while Parkinson's disease and rheumatism were reported only by males. Diabetes was found to be basically a health problem of Chamorros. These findings were statistically significant at an extremely high level of probability. The few cases of physical disabilities involved only Chamorros who were middle-age or older. A majority of the mental illness cases noted were reported by males of Filipino ancestry.

A total of 13 individuals reported off-island treatment. Using the sample factor of 44 to project to the total civilian population of the island, these data would suggest that in a given year approximately 572 medical cases treated off-island

were for acute conditions, while 39.0% and 15.0%, respectively, were for catastrophic and chronic conditions. Insurance was used to help pay for off-island treatment costs in slightly over half of the cases.

10.2 Hospital Care

Approximately 7.0% of the 1,928 individuals studied were hospitalized during the year. Of these, 91.0% had been admitted only once. Women were more likely to have been hospitalized. Within their ethnic categories, "Other Islanders" were most likely to have been admitted to the hospital while Filipinos were least likely. With regard to age, those who were more likely to have been hospitalized were the infants under one year of age and all age categories of 40 or older while the 5- to 15-years-old group was least likely.

The mean length of stay in the hospital averaged about 7.5 days. On the average, males were hospitalized one day longer than females. Those 40 years or older were found to stay in the hospital for a longer period of time than those who were younger.

Nearly 10.0% of the individuals who had been hospitalized were admitted at the Naval Regional Medical Center. Most of the remaining individuals (84.1%) had gone to the Guam Memorial Hospital while 5.0% had been hospitalized off-island.

Eighty-nine percent of the individuals hospitalized were admitted for care or treatment of acute health problems, while the remaining 11.0% were there because of disabling, catastrophic and chronic health conditions. Worthy of special note

is the fact that those hospitalized for care of hypertension problems were females who were 40 years old or older.

Nearly 3 out of every 4 individuals who had been hospitalized had been referred by 8 of 19 doctors/clinics. These clinics were as follows: FHP, GMH, SDA, NRMC, ITC Clinic #1, Carlos Heights Clinic, and the Good Samaritan Clinic.

Slightly over 1 out of every 5 persons who were hospitalized reported that the method of payment for their care was by FHP and a like number mentioned GMHP.

10.3 Home Bed Care

One out of every 11 (8.9%) of the total 1,928 individuals were reported to have stayed at home in bed due to illness or injury during the year of the study. The median length of stay was 3.0 days, while the mean was 5.4.

In contrast to hospitalization, Caucasians were two and one-half times more likely than the average of all cases to have stayed at home in bed due to illness or injury. For this ethnic category the rate was approximately 1 out of every 4 individuals. In addition, they also remained at home in bed much longer than any other ethnic category. Filipinos and Asians were least likely to have required home bed care.

With regard to age, those 16 to 39 were least apt to have received home bed care, while the average number of days in bed generally increased consistently as age increased. The most senior age group (65 or older) reported to have stayed in bed at home because of illness or injury about 12 days, while for the younger age groups the average number of days was about 4.

10.4 Reduced Activity Due to Illness or Injury

Slightly over 5.0% (about 1 out of every 20 individuals) reported that they had reduced their usual activity due to illness or injury. This did not include the time hospitalized or at home in bed.

Females were somewhat more likely to have reduced their activity for health reasons, although the difference in gender in this case was not of statistical significance at the predetermined cut-off level of .05. With regard to ethnicity and age, these findings for reduced activity were similar to those of home bed care. Caucasians were four times more likely than any other group to have reduced their normal activity due to illness or injury. Filipinos, Asians and "All Others" were least likely to have reduced normal activity. As age increased for those 40 and older, so did the number of individuals who reduced their activity due to illness.

Because several individuals had to reduce their normal activity for a major portion of the 12-month period, the arithmetic mean for all individuals was 26 days while the median was only 4.3 days. Caucasians reduced their normal activity for twice as many days during the year as did Chamorros and Filipinos. The median figures were 11.0 and 4.3/3.7, respectively.

Generally, there was an increase in the median number of days of reduced activity during the year for the various age categories beginning with those who were 1-4 years old to those who were senior citizens--with the exception being the oldest category.

10.5 Schooldays and Workdays Lost Due to Illness or Injury

An attempt was made in this study to determine what impact illness or injury had on regular work and school attendance. No doubt illness occurred throughout the week (including weekends, holidays and vacation periods) so workdays and schooldays lost should not be considered as representing the total morbidity situation.

In this study an estimated 668 workdays were lost due to hospitalization, home bed care or reduction in normal activity. Schooldays lost by the subjects were estimated to be 628.

10.6 Level of Well-Being

Upon projecting the days lost due to illness or injury to the total civilian population, it was estimated that a total of 42,768 hospital patient days, 42,416 home bed care days and an additional 121,308 persondays of reduced activity were "lost" during the year by the 84,979 individuals. The grand total of days affected during the study year for the island population (excluding those living in military housing on base) was 206,492. This figure was equivalent to 566 person years or about two and one-half days per person.

10.7 Diagnosis or Treatment of Illness or Injury

More than one-fourth of the 1,928 subjects (28.1%) made 2,405 doctor visits during the study year for diagnosis or treatment of an illness or an injury. An individual's gender or ethnicity was not "correlated" with such medical care; however, his age was. Those who were in the 1-4 age category

and those 40 or older were more likely to have had an illness or injury diagnosed or treated.

Caucasians were most likely and Filipinos least likely to have had an acute illness or injury diagnosed or treated. Those who were under age 16 or 65 and older were also more likely to have had treatment for an acute illness.

With regard to catastrophic and chronic health conditions, those who were more likely to have received diagnostic or treatment services were the Chamorro females, and adults in the 40 and older age range. These findings were all statistically significant beyond the .05 level of probability. More specifically, hypertension, diabetes and arthritis were clearly more likely to have been chronic medical problems of females, Chamorros and older persons.

The FHP Guam Medical Clinic was more likely to have been the location for diagnosis or treatment of illness or injury than any other clinic. More than 23.0% reported this specific clinic. This finding corresponded with the 22.0% figure noted several years earlier in the Health Needs Assessment of Northern Guam study (1). In this study, the Carlos Heights Clinic was mentioned by 18.6%.

Males were more likely to have gone to the St. Anthony's Clinic and to Dr. Acosta. Females were more likely to have gone to the Guam Poly Clinic, Good Samaritan Clinic and Dr. Cruz' office for diagnostic care or medical treatment. There appeared to be no significant gender difference or preference in going to various other medical clinics or doctor offices.

Considerable variation did, however, occur among ethnic groups in their use of medical facilities for diagnosis or treatment of illness or injury. Chamorros were more likely to have gone to the FHP Clinic, Filipinos to the Carlos Heights Clinic and Caucasians to the SDA Clinic. Thirty-three percent of all who had gone to the three military medical facilities were Caucasians. Among the 27 medical facilities mentioned, the military clinics/hospital ranked fifth for the Chamorros. The ITC Clinic #1 ranked second in use among Filipinos and sixth among Chamorros. It was of interest to note that the SDA Clinic ranked first, second or third among five of the six ethnic categories in the study. Filipinos virtually did not go there for diagnostic or medical treatment. Only one out of 134 (0.7%) of the Filipinos indicated that they had utilized the services of the SDA Clinic for this purpose. The various medical clinics also tended to be age specific.

The 539 individuals made a total of 2,405 doctor visits for diagnostic services or treatment of illness or injury. The number of visits per individual ranged from 1 to 98 while the median was 8.0 and the mean 4.5 visits. Males and females averaged about the same number of doctor visits. However, with regard to ethnicity and age differences were noted. Caucasians topped the list while Filipinos and Asians made the fewest doctor visits for diagnosis or treatment of illness or injury. Generally, as age increased the number of doctor visits also increased.

Those who had consulted a doctor during the year were compared with those who had not. Both gender and age were found to be statistically significant at extremely high levels of probability, .005 and .001, respectively. No significant difference were noted among the ethnic categories. More women had consulted a doctor during the year as did young children under age 5, those 16 to 39 and the 65 and older individuals.

10.8 Preventive Medical Care

Preventive medical care measures such as immunizations, x-rays and medical advice were also a part of this islandwide health study. During the 12-month study period 270 individuals (14.0% of the total sample of 1,928) made a combined total of 676 doctor visits for preventive medical care.

With regard to the various personal-social characteristics, the study revealed that more females, Caucasians and "Other Islanders," and infants and other young children under five years of age were by far the most likely to have received preventive medical care. Although females were more likely to have received preventive medical services than males it was suggested that much of the difference was in the area of medical advice and perhaps x-rays, but not immunization. Those of Filipino ancestry were only four-fifths as likely to have received medical care of a preventive nature as would be projected based on their proportion within the total number of individuals studied. The high rate of preventive health measures (especially immunizations) among the babies and preschool age children was expected.

One-third of all preventive health care doctor visits were for immunizations. This was, no doubt, heavily influenced by the emphasis placed on updating immunizations among early school-aged children because of the measles epidemic observed during part of the year-long study. Annual health examinations made up one-third of all preventive health care visits of Caucasians while accounting for only 17.6% and 18.6% of the visits made by Chamorros and Filipinos, respectively. Immunizations made up 27.0% to 33% of preventive health care doctor visits for these three ethnic groups. Three out of 10 senior citizens ages 65 and older listed eye examinations as the type of preventive health care they had received. An additional 50.0% mentioned "general medical check-ups".

Two-thirds of all preventive health care visits were made at the FHP Guam Medical Center, DPHSS, SDA Clinic and the Carlos Heights Clinic. The FHP Center was the most "popular" for this purpose. Over 18.0% of all doctor calls were made at the FHP Center.

Regarding ethnicity and clinics used for preventive health care, the study results showed that the FHP Center ranked first among Chamorros, DPHSS was most likely to be used by Filipinos, and the SDA Clinic was used most by Caucasians. Generally, the study suggested that ethnicity "correlated" with choice of medical clinics/doctors for preventive care services.

Also "correlated" with use of specific medical clinics for health services of a preventive nature was one's age. DPHSS ranked first or second for children. The emphasis on immuniza-

tions and free care at the DPHSS no doubt contributed significantly to this level of use. Those in the childbearing age range were most likely to go to the SDA Clinic while FHP ranked first for those in their mid-life and early senior years. It was of interest to note that the NRMC ranked either first or second for preventive medical care by the senior citizens.

The number of preventive health care visits made during the year ranged up to 13. The median for all persons was 4.1 visits, while the mean was found to be 2.5. Females were found to make considerably more preventive care doctor visits than males. This differed from diagnostic and treatment doctor visits which were dominated by males. Virtually no differences in the number of preventive care medical visits were noted among the various ethnic categories. This also differed from the analysis of diagnostic and treatment services where it was found that Caucasians had the largest proportion of visits within their ethnic category and Filipinos the fewest.

The children and youth ages 5-15 were found to have made the fewest preventive medical care visits during the year. Infants less than a year old, those in the childbearing age range and the older senior citizens had made the largest number of such doctor calls. These findings also differed when compared with diagnostic and treatment medical care. As reported earlier, the number of doctor visits for this purpose increased as age increased.

10.9 Therapy, Habilitation and Rehabilitation

Only 14 (0.7%) of the total 1,928 individuals studied reported having had therapy or similar rehabilitative medical care during the study year. The variables of gender and ethnicity did not appear to be statistically related to receipt of this type of medical care. Age, however, was significantly related. Individuals 40 years or older were much more likely to have received therapy or rehabilitative medical care than were the younger group.

The GMH and NRMC were more frequently used for therapy and rehabilitation care than the other various medical clinics. The NRMC was used by more males than females, while at GMH the gender distribution was even. It was of interest to note that 3 out of the 8 Chamorros had utilized the NRMC for this type of health care. These 3 individuals, therefore, represented 75.0% of the 4 who were reported to have received therapy or rehabilitation care at NRMC. Those who were 40 years or older were more likely to have gone to the GMH and NRMC while the other medical care facilities offered therapy and rehabilitation services to an equal number of individuals in both the under 40 and 40 and older groups.

The number of medical facility visits by an individual during the year for therapy, habilitation or rehabilitation ranged to 30. The median and mean number of visits or treatment were 10.7 and 10.1, respectively.

VOLUME 4: HEALTH CARE ACCESSIBILITY, UTILIZATION, SATISFACTION AND RESPONSIBILITY

SECTION EIGHT

SUMMARY OF FINDINGS

8.1 Introduction

This is the fourth of five volumes on the health status of the population of Guam. Included in this report is information pertaining to health care accessibility, utilization, satisfaction and responsibility. The final section concerns child care and food handling sanitation knowledge.

A major portion of this report contains information about the perceptions, attitudes, feelings and knowledge of the 400 respondents. Their answers to Questions 16-20, 33-40 and 49 provided the basic data for the body of this report.

8.2 Accessibility and Utilization of Health Services

In this study 123 individuals (6.4%) of the total sample of 1,928 were reported not to have gone to a doctor when one was needed. There were three main reasons for their foregoing the needed health care. The three accounted for 75.0% of the nine reasons given. More than one-fourth (26.0%) indicated that a lack of transportation was the reason they were not able to see a doctor when needed. An additional 19.5% were unable to receive medical care because they did not have enough money and/or insurance. Twenty-nine percent didn't go because they decided their illness was not that severe after all.

Nearly one-half of the males (45.7%) and a like proportion of the females (45.5%) encountered transportation or financial

problems to the extent that they did not see a doctor when needed. Caucasians did not seem to have money or insurance problems that kept them from seeing a doctor when necessary. About 20.0% of the Chamorros and Filipinos, however, gave those reasons for doing without medical care. Nearly one-half (19.5%) of all other subjects experienced insurance or financial problems. Transportation virtually was not a problem for the Filipinos, but it was for 32.5% and 41.7% of the Chamorros and Caucasians, respectively. With regard to age, transportation and money problems were the most significant reasons that prevented the elderly aged 55 and older from receiving needed medical and health care. These reasons were considerably more pronounced for the elderly than for the other age groups.

Guam lacks a functional mass transportation system, but evidences a high vehicle-person ratio. Responses indicated, as expected, that nearly all individuals (91.0%) relied on their own car or truck when in need of health care. This same figure was reported for the 1980 health study of Northern Guam. Vehicles owned by relatives were relied upon by an additional 6.0% of the sample.

With regard to the relationship between mode of transportation and personal-social characteristics, it was found that females were less likely than males to have access to their own car or truck. Therefore, they depended more on relatives and friends. Chamorros and Caucasians were least likely to have their own form of transportation. This was especially the case for the females. In their time of need Chamorros turned to

relatives while Caucasians were more likely to rely on non-relatives for assistance with their transportation needs. The senior citizens--more than any other group--found it necessary to depend on others for transportation to medical facilities.

Respondents also indicated the degree of difficulty they encountered in obtaining necessary transportation for their medical care. Eleven percent stated that it was either "very" or "somewhat" difficult. These data showed a slight improvement when compared with the situation reported four years ago. In the current study, female subjects noted greater difficulty in accessing necessary transportation when they needed to see a doctor. Caucasians and All Others (excluding Chamorros and Filipinos) were least likely to have encountered such transportation problems. The aged expressed the greatest degree of difficulty in having transportation available when they needed medical attention.

There has been an increase in the number and distribution of physicians and medical clinics in areas outside of Tamuning since 1980. No doubt this contributed to a reduction in the percentage of individuals who specified that they at times needed medical care but did not receive it due to the unavailability of transportation. Statistical differences within gender and age variables were noted. Females and older persons definitely had foregone needed medical services because they were not able to secure transportation at the time.

Accessibility and utilization of medical services were also measured in terms of the time required to get to the

doctor's office or medical facility. Using actual medical visit data for the two weeks preceding the study, it was determined that the average distance traveled for all medical care visits was 6.9 miles. On the average, it was calculated that one would require 13 minutes and 48 seconds to cover the distance by car or truck. There seemed to be no correlation between distance traveled and whether or not medical care was received. For example, those residing on the south end of the island required an average of 35 minutes and 29 seconds to get to the doctor or clinic, while those from the central areas required only about 11 minutes. The percentages of individuals who had actually received medical care from the two regions, however, differed by only 1.0%.

Approximately 42.0% of all individuals studied claimed to have specific or regular doctors to whom they went for their medical care. Filipinos were more likely to have a regular doctor; Caucasians were least likely. These differences among the ethnic groups were statistically significant. With regard to age, the adult working-age category was least likely to have a regular or specific doctor, as compared with children and senior citizens who tended to do so.

Nearly 22.0% of all respondents mentioned that their regular place of medical care was the FHP Medical Center. The Carlos Heights Clinic (12.7%) and the SDA Clinic (9.4%) ranked second and third, respectively. Chamorros were clearly more likely to select the FHP Medical Center (28.9%) while Filipinos tended more to obtain their medical services from three

locations, namely: ITC Clinic #1 (12.9%), Carlos Heights Clinic (11.9%), and the FHP Medical Center (9.8%). Only 2.7% of the Filipino population mentioned that they regularly (or usually) went to the SDA Clinic. This finding was consistent with a general utilization pattern throughout this report on the status of health care. Caucasians, however, were more likely to go to the SDA Clinic (23.5%) than to any other location. More than one-half of the infants and other children under 16 years of age usually received medical services at the Carlos Heights Clinic and the FHP Medical Center. In contrast to this, only 5.0% of all others mentioned going to the Carlos Heights Clinic on a regular basis. The elderly in this study were more likely to see a doctor at the FHP Medical Clinic (16.1%) or one of the military medical facilities (10.8%). The Suruhano was noted as being the usual source of medical care by two elderly Chamorros.

8.3 Health Education Programs

Nearly two-thirds (62.0%) of the 400 adult respondents expressed an interest in attending one or more of eight proposed health education programs. Females were more interested in such educational programs (63.4%) than were the males (57.8%). Caucasians expressed the greatest interest (73.0%), and Filipinos the least (51.6%). There was an inverse relationship noted between age and interest in health education programs. As one became older, interest decreased from 71.1% for the 16- to 39-years-old group to 31.4% for those age 65 and older.

The health related education program that was of greatest interest was first aid/CPR training (34.3%). It ranked first for both males and females, all ethnic categories, and all age groupings. Programs in exercise and weight reduction ranked second and third, although differences were noted among the various classifications. For instance, males were equally as interested in a program to help them stop smoking as they were in the first aid/CPR course.

Conversely, the "stop smoking" program was ranked lowest by the females. This was also found to be the case for the Filipinos. Stress management and parenting programs elicited the least interest. This may have been a result of their lack of appeal for certain categories of individuals. None of the elderly, for example, were interested in these two programs. Although there appeared to be limited interest in the stress management program overall, it did rank second highest for Caucasians. Caucasians also tended to rank parenting higher than both Filipinos and, in particular, Chamorros who ranked it lowest among their interests.

Village community centers were clearly the preferred location for holding suggested health education programs. Over 38.0% reported that they would rather have the programs available on weekdays, while 28.7% preferred that they be held on Saturdays. As many as 23.1% indicated no particular day of preference. The times suggested for attending health education programs, in order of preference, were: early evenings after 5:00 p.m., mornings, afternoons, and evenings after 7:00 p.m.

More than 8 out of every 10 individuals (83.0%) indicated that they would be willing to pay a nominal fee to participate in the health and health related education programs. Nearly 92.0% of the Caucasians and 79.9% of the Chamorros were willing to pay such a fee. Approximately 86.0% of all others would pay the fee to participate or attend. With regard to age, those in the 40 to 54 age range were most willing to pay a nominal fee for attending health education programs.

8.4 Health Care Information Sources

The findings of this study--regarding the extent of use of various sources of medical and health information--were very similar to those reported for the Northern Guam health study (1) four years earlier. Medical doctors were considered by far to be the most useful sources of information. Household members and various forms of printed and electronic media ranked next in order of importance. Nurses continued to receive an intermediate ranking, while traditional healers and clergymen were considered to be of little or very limited use as medical information sources.

8.5 Level of Satisfaction in the Quality, Accessibility and Cost of Health Care Services

In general, a high level of satisfaction with health care services was found to prevail in this islandwide study. This was an improvement of about 10.0% over the 1980 health study. Of special note in this research was the high level of satisfaction (90.0%) in the information received from professionals about health conditions in general and treatment in particular. The quality of health care also received a high rating (89.0%).

This did mean, however, that 11.0% of the sample were not satisfied.

The subjects were clearly less satisfied with the out-of-pocket expenses they had to pay for medical care. Approximately 31.0% noted some degree of dissatisfaction. The one aspect of medical care which the survey group found most dissatisfying was the length of time required from their arrival at the doctor's office or clinic until care was received and they were able to return home. About 37.0% reacted negatively to this particular situation. Out-of-pocket costs and doctor's office waiting time were the two aspects of health care with which the sample group in 1980 (Tamuning, Yigo, and Dededo area) also found the greatest dissatisfaction.

There was a substantial increase in the degree of satisfaction noted for the days of the week and the times of the day that medical services were now available as compared to the situation four years earlier. The levels of satisfaction virtually "shot up" between 11.0%-15.0% to register in the 90.0% range for the present study group.

8.6 Health Care Responsibility

Generally, those interviewed felt a personal responsibility for the maintenance and protection of their own good health (68.8%). Seventeen percent felt that their family should have the responsibility, and 25.5% said it was the responsibility of the doctor. Only 4.3% mentioned that the government should have any such role regarding the status of their personal health.

8.7 Food Handling and Child Care Sanitation Knowledge

Generally, the subjects knew that kelaguin could not be safely left unrefrigerated and that babies could contract diseases from playing with puppies. Fewer of those surveyed were aware that it was not beneficial for children to eat small amounts of dirt. Clearly the statement that was least well understood concerned the difference from a sanitation viewpoint between cold and hot water when doing laundry and using an all-temperature detergent.

Females tended to be more knowledgeable than males regarding the sanitation statements. This was also the case for Caucasians in comparison to other ethnic groups. Chamorros and Filipinos scored lowest on the item concerning small children eating dirt, while Chamorros ranked second on the kelaguin statement. All of the 31 individuals in the All Other ethnic category knew the correct answer to the statement about eating dirt.

With regard to age, the older individuals who were at least 65 did less well than the younger age groups in answering three of the four sanitation questions. They were, however, more likely to answer correctly what seemed to be the most difficult statement about laundering and the use of hot or cold water with an all-temperature detergent.

VOLUME 5: AN ANALYTICAL DISCUSSION OF SELECTED LIFE STYLE PATTERNS

SECTION SIX

SUMMARY OF FINDINGS

6.1 Introduction

Interviews were conducted with 400 adults representing randomly selected households throughout the island. A total of 1,928 individuals resided in the homes. This is the fifth report--in a series of five--concerning health behavior patterns of the population on Guam. The information contained herein was derived primarily from answers given to Questions 21 through 32 of the Interview Schedule.*

The major topics of this report cover smoking, drinking and eating life-style patterns, aspects of mental health, exercise and personal safety programs. A brief overview of each major section of this report comprises the remainder of this summary.

6.2 Physical Health: Smoking, Drinking and Eating Life-Style Patterns

Slightly over one-third (35.3%) of the sample population 16 years or older were reported to be smokers. Nearly one-half of the males were smokers, while the percentage figure for females was about 24.0. As a group Filipinos were the least likely to smoke and Chamorros the most (41.5%). The 40 to 54 age group contained the highest percentage of smokers (41.2%), while the senior citizens' age group contained the least (23.0%).

*See Appendix C

Of those who smoked, two-thirds were males, 66.0% were Chamorro and 55.0% were in the 16 to 39 age bracket. As was to be expected, the number of years a person had smoked correlated highly with their chronological age. The range for years of active smoking extended from less than one year to 60 years. Males were found to have been smoking several years longer than females. The 17.0-years average that Filipinos had been smoking was nearly twice that of the Chamorros (9.5 years).

The amount of cigarettes smoked per day ranged from one cigarette to four packs. Males smoked only slightly more than did the females. The number was 23.6 and 21.5 cigarettes, respectively. Of all the smoking of tobacco reported, 98.2% was cigarette smoking. A few also smoked pipes or cigars. Approximately one out of three smokers said that doctors had advised them to stop smoking.

Alcohol consumption patterns were also studied in this research effort. The personal-social profile of the typical alcohol drinker was similar to that of the average smoker. Approximately one-fourth of the adults consumed at least one drink per month. They drank primarily beer; some had liquor and a small quantity of wine. With regard to gender, 40.0% of the males drank while the figure was under 10.0% for females. Of those who drank, most were males (82.0%), Chamorro (51.0%), and in the 16 to 39 years age range (56.8%). Caucasians were two to three times more likely to be drinkers than any other ethnic group. About 28.0% of the 40 to 54 age group drank, while 13.0% of those 65 or older did so. The average alcohol

consumption frequency was once or twice a week. Males drank more frequently than females and drank larger volumes of beer, in particular. Asians were two and one-half times more likely to drink during the week than anyone else. As age increased, there was no difference in drinking frequency except for the senior citizens. While others averaged a drink a week, the eldest senior citizens averaged one alcoholic drink per day. Males consumed an average of three and one-half cans of beer per sitting. This was more than one can greater than the females' average. A larger percentage of women than men were found to drink wine; however, the amount they drank at a sitting was less. Other Islanders seemed to be the "heaviest" drinkers. With regard to age, those 40 to 54 years old averaged the most cans of beer per occasion. The oldest individuals were more likely to be drinkers than any other group. However, the amount they consumed per occasion was less. Doctors had advised about 11.0% of the drinkers to break their habit. This was about one-third the number of smokers who had received similar medical advice. Around 60.0% of the drinkers admitted that they had driven after consuming alcoholic beverages. The average number of times was approximately once every 8 or 9 months. The occurrence of driving after drinking was greatest among Caucasians.

Another cultural or life-style pattern discussed was the practice of adding extra seasoning (such as salt) to one's food while eating. Nearly 60.0% of the subjects were reported to use extra sodium on their food. Asians and Chamorros were most

likely to have used such condiments. Almost 30.0% of the Caucasians said they rarely or never added extra seasoning to their food. This was three times larger than the other ethnic groups.

6.3 Mental Health

Three and one-half percent of all subjects complained of emotional stress. This was found to be more characteristic of females, Caucasians and those in the age 16 to 39 years range. Family problems and death or illness in one's family were primary causes. Job problems were more of a problem for males than females.

Females, Caucasians and the eldest adults were most likely to have been taking medication or drugs to help relieve themselves of their stress or to aid in relaxation.

6.4 Health Fitness and Exercise

To determine the health consciousness or general health fitness level of the subjects, they were asked about their leisure time physical activity. Nearly one-fourth exercised at least three times a week. No significant difference was noted between males and females with regard to the proportions of their respective group who were physically active. Caucasians tended to differ considerably in the area of health fitness. More than one-half of the Caucasians exercised regularly. Due to their being represented more extensively in the sample, Chamorros and Filipinos made up 84.0% of all individuals who exercised.

Yardwork and housework tended to be the most common forms of exercise for males and females, respectively. Ranking second for males was running/jogging and for females aerobics. The first place rating of running and jogging by the Filipinos was not anticipated. When considering their age, it was found that those under 40 years ranked jogging or running as their first type of exercise. The oldest individuals seemed to prefer yardwork and walking to stay physically and mentally well. The 460 individuals in the study who exercised regularly did so for nearly one hour per occasion. The length of time was greater for males, Caucasians, and the senior citizens.

6.5 Personal Safety Programs

The extent to which the subjects in this islandwide health behavior study routinely utilized select safety measures was analyzed. Approximately one-third regularly used seat belts for safety reasons while traveling in cars. Caucasians were more than twice as likely to wear them as any other group, while Other Islanders were the least likely to do so. Little variation was noted among the various age groups or within gender.

Caucasians were also far more likely to have had first aid training than any other group. This also held true for CPR training. Males, in general, were more likely to have had first aid or CPR training than were women. Based on these findings, it appears that community informal information programs on first aid would most likely be very well attended.

As life-styles and cultural traits continue to change, the health status and behavior patterns of the people can also be

expected to be modified. This islandwide survey should, therefore, prove helpful in future years for the comparative baseline data it can provide.