

Appendix J

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PAPA OLA LOKAHI HAWAIIAN HEALTH UPDATE: MORTALITY, MORBIDITY, MORBJDITY OUTCOMES AND BEHAVIORAL RISKS

Presented to:

Papa Ola Lokahi
March 1, 1996

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INTRODUCTION

Purpose

This report provides a baseline assessment of Native Hawaiian Health at the time when the Native Hawaiian Health Care Act of 1988 programs are beginning to be implemented under Papa Ola Lokahi, an umbrella Hawaiian Health Agency that is responsible for coordinating the various Hawaiian Health initiatives throughout the state. Since Federal funding for these activities and organizations became available in 1989 in the form of planning and organizing grants, and the actual delivery of services began in 1990 and 1991, the data in this report targets this time period, reflecting the health status of Native Hawaiians at the beginning of this effort. It is expected that periodic studies of this type will be required in the future to determine the impact of these initiatives over time.

Scope

This effort provides comparable data and analysis of changes of health status, as measured by mortality and morbidity, taking the average of the 1980-86 and 1989-91 periods. This report looks at age-adjusted mortality and morbidity rates for the major causes of death and most prevalent diseases. The main comparison is between Native Hawaiians and the total population of the state. There are some data, which permit comparison between “pure” Hawaiians and “part” Hawaiians in terms of health status and outcomes.

An added feature of this report, are data on behavioral health risks obtained from the Behavioral Risk Factors Surveillance Survey conducted since 1986 by the Hawaii State Department of Health. These data show how Native Hawaiians compare with the state population in terms of their exposure to various health risks, based upon behaviors. This section addresses lifestyle factors such as smoking, drinking and being overweight. It also includes preventive measures taken by women to screen for breast and cervical cancer. The section illustrates time trends in these behavioral risks from 1987 through 1993.

MORTALITY

This section provides a picture of the major causes of death by ethnicity and gender. The mortality rates are age-adjusted to the total Hawaii population to more clearly show the comparisons among ethnic groups and genders. The rate of mortality is an important indicator of the health in a population, and the principal causes of mortality provide a picture of the kinds of medical and non-medical problems that need to be addressed in helping a group improve its level of well-being. Thus death caused by accidents, suicide or some preventable illness conditions might be averted with appropriate intervention.

The official registration of deaths began in Hawaii in 1908. Since records have been kept, all ethnic groups have experienced a downward trend in death rates until 1980 (7). There

has been a general decline in rates for cancer and heart disease over time until 1980 but these have shown a modest increase between 1980 and 1990 (8).

In reviewing the mortality trends since 1910, Native Hawaiians have experienced the highest age-sex standardized mortality rates of any major ethnic group in Hawaii (9). Part-Hawaiians have experienced mortality rates similar to non-Hawaiians, while Hawaiians have had much higher rates than other groups. For mortality caused by cancer, Hawaiian males have had the highest rates of all groups. They were among the highest for cancer of the stomach and have had the lowest survival rate from colon cancer. Hawaiian females have had higher mortality rates than females from other groups for cancer of the breast and cervix (7).

Another indicator of mortality is life expectancy. Historically Native Hawaiians have had among the lowest life expectancy of all groups in the population. Their life expectancy from birth has ranged from five to ten years less than the overall population average during the period from 1910 through 1970 (2). The most recent life tables for 1980 show Hawaiian life expectancy at birth about five years less than the total population of the State (1).

Present status

For purposes of this analysis, mortality data for the major ethnic groups of Hawaii are based on the vital statistics for the years of 1989 through 1991. The causes of mortality are those utilized by the official national and state vital records.

Table 2 compares the mortality rates for each cause of death by ethnicity and gender. A consistent pattern emerges. The combined category Native Hawaiians includes Hawaiians (pure) and Part-Hawaiians and is generally the highest, next to Caucasians, across different causes of death. For all causes of death, pure Hawaiians have the highest rates, next are Caucasians, Native Hawaiians Part-Hawaiians, Filipinos, Chinese, and Japanese. Pure Hawaiians generally have the highest mortality rates by cause of death, with Part-Hawaiians closer to the overall average rates.

When comparing the Hawaiian, Part-Hawaiian and Native Hawaiian categories with the total rates they are generally higher across all major causes of death. The top causes of death for the Native Hawaiian categories are the same as for the overall total population. The major difference is that the Native Hawaiian rates are higher, with the pure-Hawaiian much higher than the Part-Hawaiian group. Figures 1 A-C show that the highest mortality rate is for circulatory disease, with Hawaiians higher than Part-Hawaiians and the overall total rate. Heart disease and cerebrovascular disease are the highest circulatory diseases (see Figure 1B). The second highest rate of mortality is for malignant neoplasms, again with pure Hawaiians much higher (See Figure 1A). Cancer of the respiratory system and digestive system are highest, again with Hawaiians much higher than Part-Hawaiians and the overall total. For Native Hawaiians, accidents, diabetes, influenza/pneumonia round out the top five causes of death. Figures 1A-C show that while the pattern of cause of death is similar between Hawaiians and Part-Hawaiians, the former generally have much higher rates. Again, Native Hawaiians show higher than average mortality rates among the major causes of death.

Figure 1A
Top Five Mortality Conditions
 Age-Adjusted Rates Per 100,000 Population

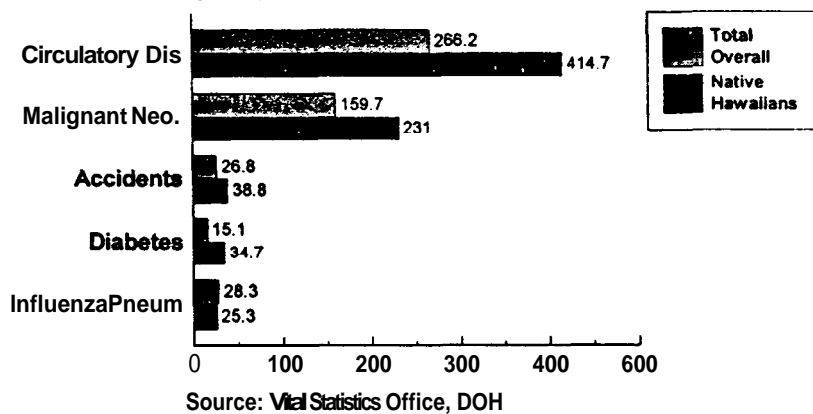


Figure 1B
Mortality Conditions Relating to Circulatory Diseases
 Age-Adjusted Rates Per 100,000 Population

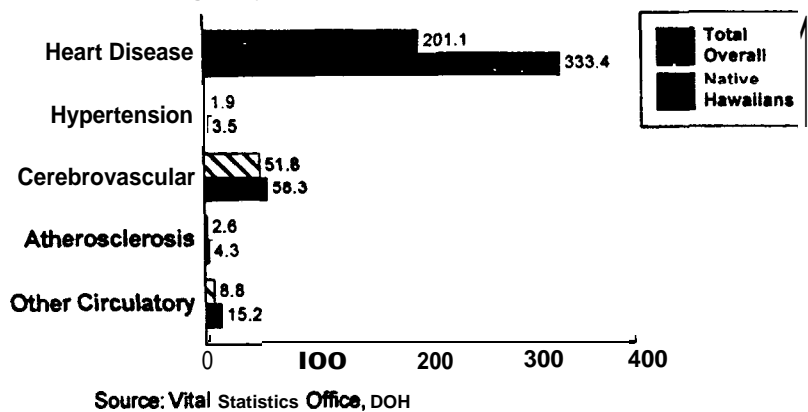
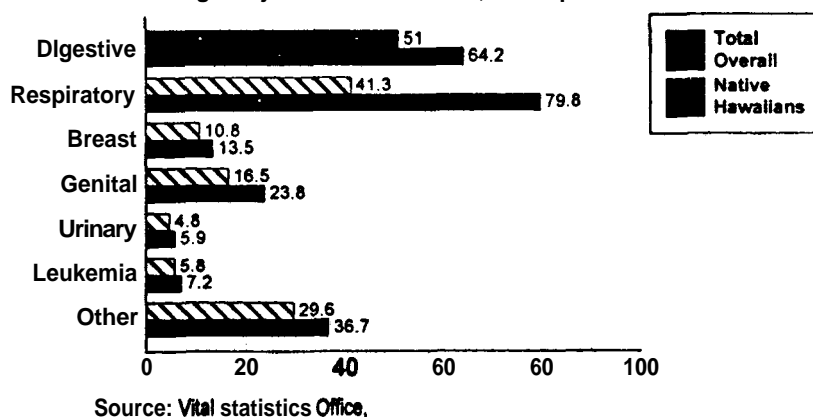


Figure 1C
Mortality Conditions Relating to Malignant Neoplasm
 Age-Adjusted Rates Per 100,000 Population



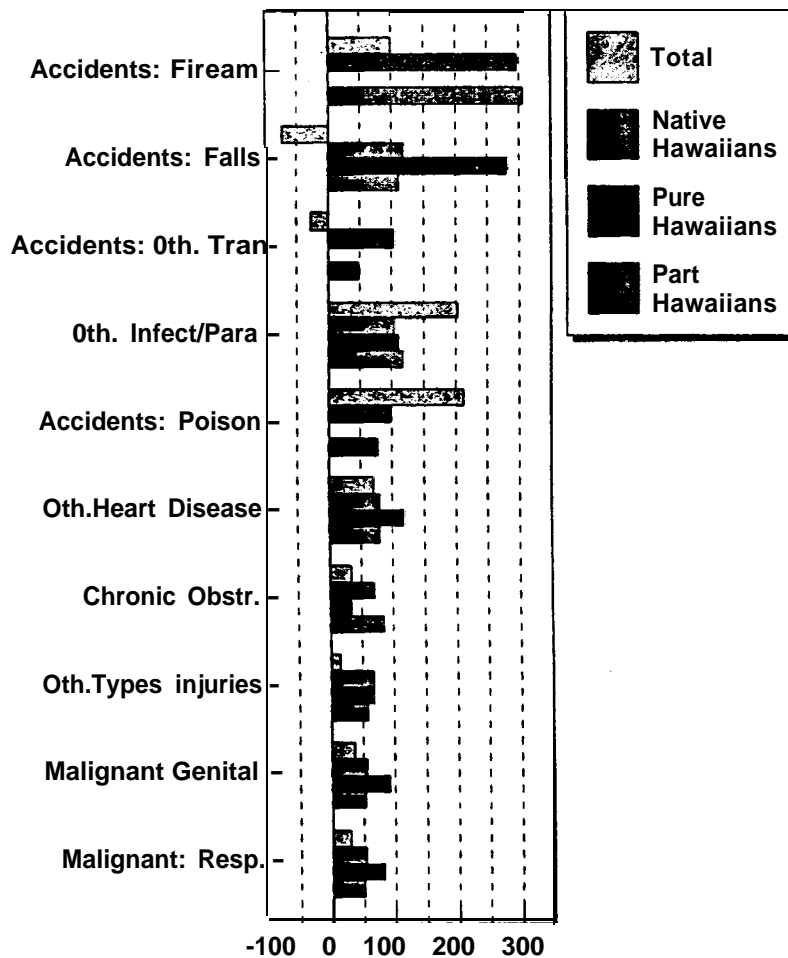
Males and females share the major causes of death and have similar patterns to those described for the total population. Males have higher rates than females across all the top causes of death, except for female diseases such as breast cancer. Heart disease and ischemic heart rates are the highest for both sexes. Next is cancer of the respiratory system and cancer of the digestive system for both males and females, except that Hawaiian females have higher rates of cerebrovascular disease. Hawaiian males have the highest mortality rates overall, often doubling, tripling or quadrupling the overall population average. Hawaiian females, while lower than males, have extremely high mortality rates for these same causes of death. The age-adjusted rates have the effect of age removed and so these differences between genders is not due to differences in their age-distribution (See Tables 2B-C).

Comparison with 1980-86

This section of the analysis will compare the current age-adjusted mortality rates for 1989-91 with those that were computed for 1980-86 in order to ascertain the magnitude and direction of differences that have occurred between the 1980-86 mid-point (1983) and the 1989-91 mid-point (1990). This represents a seven year time differential between the mid-points of the two sets of mortality rates. The earlier data was also computed from the cause of death statistics obtained from the Office of Vital Statistics of the Hawaii State Department of Health. The age-adjustments for both sets of mortality statistics are identical, so that direct comparisons of rates can be done. The approach has been to compute the percentage difference in age-adjusted rates for the two periods, thus making it possible to compare changes across both gender and ethnic groups (See Table 3). The charts in this section of the report illustrate the percentage change in age-adjusted mortality rates between the two periods, rather than the rates per se.

Table 3 shows that, overall, Hawaiians had the greatest percentage increase in mortality rates over all causes during the period 1980-6 to 1989-91 with a 48% increase. This was followed by Caucasians with an overall 40% increase, then Filipinos with a 31% increase, and Chinese with 25%. The overall increase across all ethnicities was 20% and those groups with less than 20% were Native Hawaiians 19%, Japanese 17%, Part-Hawaiians 16% and Others 3%. The fact that there was an overall 20% increase in mortality during that 7 year period is alarming and may be accounted for only in part by the aging of the population. We will look at the specific conditions that have increased the most and compare the Native Hawaiian categories with the total population.

Figure 2A
Percentage Increase from 1980-86 to 1989-91,
For the Top Ten Causes of Death



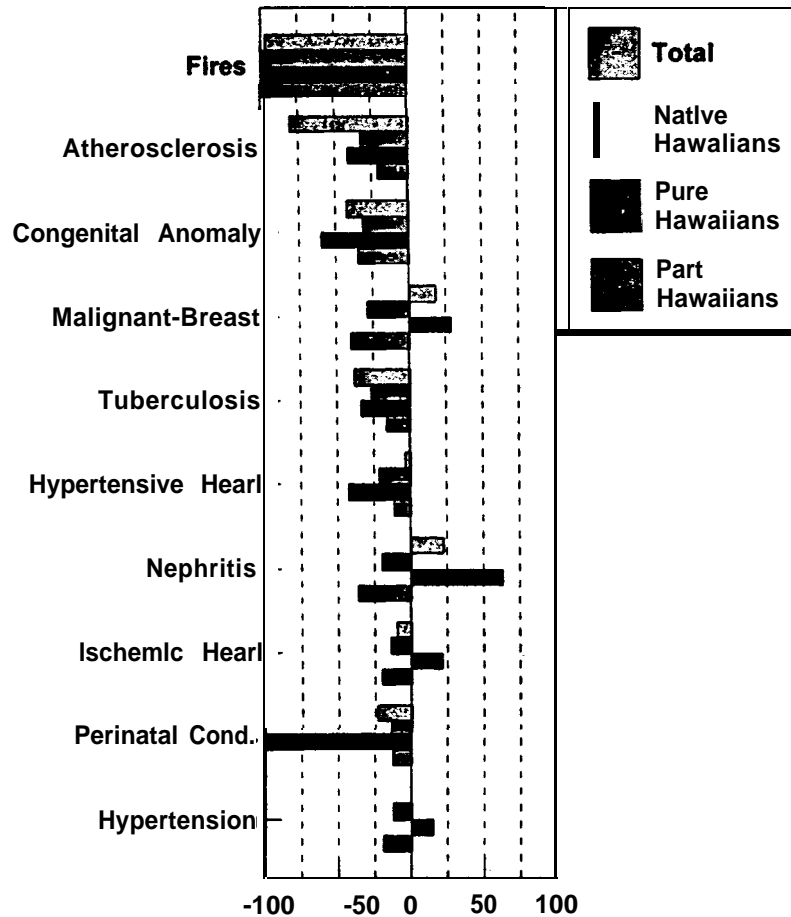
Source: Vital Statistics, Hawaii State Department of Health

In looking at Figures 2A and 2B it appears that those causes of death increasing most in the total population also increased the most among Native Hawaiians and conversely, those causes that declined in the total population were generally the same as those that declined in the Native Hawaiian population. Increases, however, are greater for Native Hawaiians than for the total population for some causes of death and smaller for other causes of death, even though both Native Hawaiians and the total population show an increase or decrease.

For Native Hawaiians, firearm accidents increased **300%** during the 7 year period from 1980-86 to 1989-91. This compares with a 100% increase for the total population. Deaths due to accidental falls increased 119% for Native Hawaiians and declined by 73% for the general population. Accidents appear to be an increasingly important cause of death for Native compared to the total population. Other infectious and parasitic diseases increased by

100% for Native Hawaiians and 200% for the total population meaning that, although this cause of death became more important for Hawaiians and for the total population, the change was only half for the Native Hawaiians as for the total population. This is also true for accidental poisoning, which increased at 100% for Native Hawaiians but much more rapidly for the total population. over 200%. Other heart diseases increased by 80% for Native Hawaiians compared to 70% for the total population. Chronic obstructive disease increased by 70% for Native Hawaiians compared to 34% overall. Other types of injuries increased by 68% for Native Hawaiians compared to 16% overall. Genital cancer increased by 58% for Native Hawaiians compared to 26% overall. Respiratory cancer increased by 52% for Native Hawaiians and only 30% overall. Other causes of death for Native Hawaiians increased but at a slower rate than those mentioned above.

Figure2B
**Percentage Decline from 1980-86 to 1989-91,
 For the Top Ten Causes of Death -**



Source: Vital Statistics, Hawaii State Department of Health

In Figure 2B, causes of death that declined in importance were somewhat similar for Native Hawaiians and the total population, although the rates of change varied. Native Hawaiians experienced a decline in accidental death due to fire (100%) compared to 97% for the total population; atherosclerosis (-41%) compared to -88% in the total population, congenital anomalies declined by -31% for Hawaiians compared to -42% in the total population. Also, there was a decline in deaths caused by breast cancer for Native Hawaiian women (-29%) compared to an increase of 19% for total women. Tuberculosis declined by -26% for Native Hawaiians compared to -38% for the total population. Hypertensive heart disease declined by -21% for Native Hawaiians compared to only -3% for the total population. Nephritis declined for Native Hawaiians (-20%) compared to an increase of 22% for the total population. Ischemic heart disease declined for Native Hawaiians by -14% compared to -10% for the total population. Perinatal conditions declined by -14% for Native Hawaiians compared to -23% for the total population. Deaths caused by hypertension among Native Hawaiians declined 12% compared to 0% change for the total population.

As with both sexes combined, the Native Hawaiian male and female patterns of change were similar to the total population males and females. Chronic obstructive, influenza/pneumonia, malignant neoplasms circulatory disease, cerebrovascular disease and heart disease show increasing importance in mortality for Native Hawaiian males and females as well as males and females in the total population. Decreasing importance for both males and females is found with hypertension, perinatal conditions, congenital anomalies and atherosclerosis. These declines are found also in the total population.

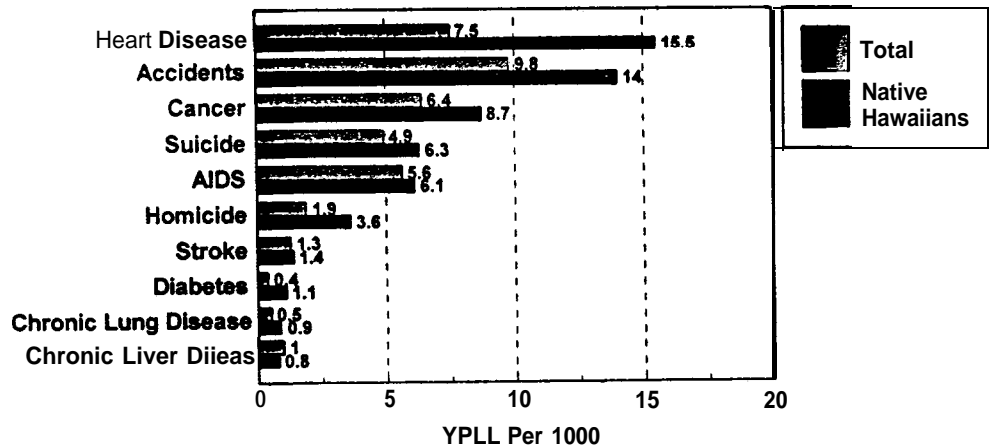
Native Hawaiian males and females have shown similar patterns of change for most major causes of death; however, for suicide and diabetes, Native Hawaiian females show a trend that is contrary to their female counterparts in the total population as well as in Native Hawaiian males. Suicide rates for Native Hawaiian males have increased (+18%) but have declined for females (-25%). This contrasts with increases in suicide rates for both males and females in the total population (+20% males, +8% females). Diabetes mortality has also increased for Native Hawaiian males (+28%) but declined for Native Hawaiian females (-10%). However in the total population, both sexes have shown increases (+15% males, +24% females).

Years of productive life lost

In order to evaluate the effect of mortality on different populations and to compare this among the different population groups, years of productive life lost (YPLL) is a technique of assessing the effect of mortality on different groups. The technique assumes that the productive years of life extend until age 65 and those who die prior to age 65 lose a number of years of productivity. If a person dies at age 65 or older, then no years of productive life are lost. The years of productive life lost are calculated for each person in the population and aggregated by cause of death and by ethnicity and gender. The total YPLL for each cause, sex and ethnicity are divided by the total number of deaths in each of those categories to produce an average of years of productive life lost for those deaths in each respective category.

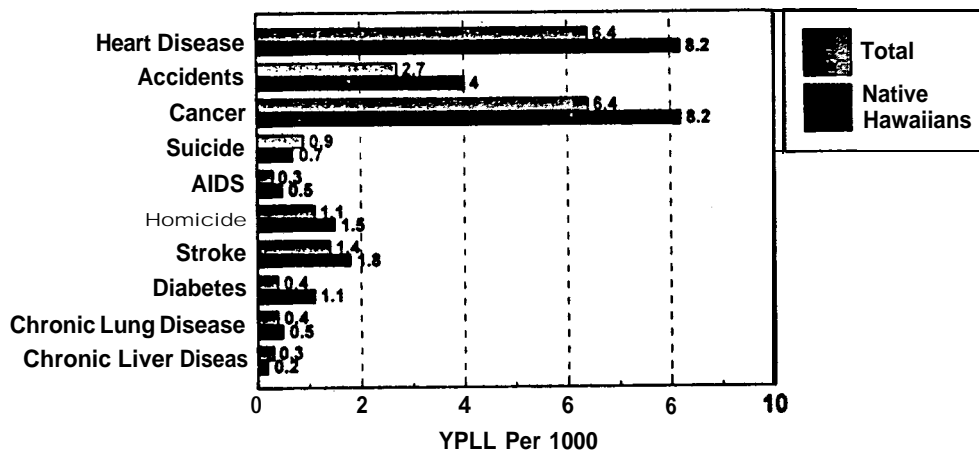
As a rule, Native Hawaiians have more YPLL than the overall population for each of the selected diseases. The only exception is for suicide among Native Hawaiian females, which is lower than for females overall. Also, males except for stroke and diabetes have more YPLL than females. The greatest number of YPLL is due to heart disease for Native Hawaiian males (see Figures 3A and 3B). Males lose an average of 15.5 years and females 8.2 years of productive life due to heart disease. This compares to 7.5 years for total population males and 6.4 for total population females. Both Native Hawaiian males and females have higher YPLL than the other groups being compared.

Figure 3A
Years Lost for Selected Mortality 1990
for Males



Source: R.M.Worth, HAPI MEDTEP Center, and Vital Statistics. DOH

Figure 3B
Years Lost for Selected Mortality 1990
for Females



Source: R.M.Worth, HAPI MEDTEP Center, and Vital Statistics DOH

Additional observations:

- ◆ After heart disease, YPPL is greatest for accidents, particularly for Native Hawaiian males who have an average of 14 YPPL compared to 9.8 YPPL for all males. Native Hawaiian Females have only 4 YPPL by comparison. Nevertheless, they are higher than all women.
- ◆ YPLL due to cancer is highest for Native Hawaiian males with 8.7 years compared to Native Hawaiian females with 8.2 years. The total population males and females by comparison each have 6.4 YPLL
- ◆ As with other causes of death, males have more YPLL than females due to suicide. Native Hawaiian males have 6.3 YPLL compared to males overall (4.9 YPLL). However, Native Hawaiian females have fewer YPLL (0.9) than do females overall (0.7) due to suicide.
- ◆ For AIDS, Native Hawaiian males have a YPLL of 6.1 compared to 5.6 for males overall. Native Hawaiian females have YPLL of 0.5 compared to the average of 0.3 for all females.
- ◆ Homicide as a cause of death results in 3.6 YPLL for Native Hawaiian males compared to 1.9 YPLL for males overall. Native Hawaiian females have 1.5 YPLL compared to 1.1 YPLL for females overall.
- ◆ Stroke causes the greatest YPLL for Native Hawaiian females (1.8) compared to Native Hawaiian males who lose 1.4 years of productive life.
- ◆ YPLL for diabetes is much higher for both Native Hawaiian males and females (1.1 years each) compared to the overall YPLL for males and females which is 0.4 years.
- ◆ Chronic lung disease has the greatest effect on Native Hawaiian males who lose 0.9 years of productive life, compared to males overall, who have 0.5 YPLL. Native Hawaiian females (with 0.5 YPLL). on the other hand, have lower YPLL than for women overall, which is 0.4 years.

Table 2 (total) Age adjusted mortality rates 1989-91

Table 3a (total) Changes In mortality rates 1980-6 to 1989-91

This section will show the distribution of morbidity within the Native Hawaiian population and between Hawaiian and the Part-Hawaiian population and the total State population. Morbidity is the presence of acute or chronic conditions due to illness (disease), accidents and injuries.

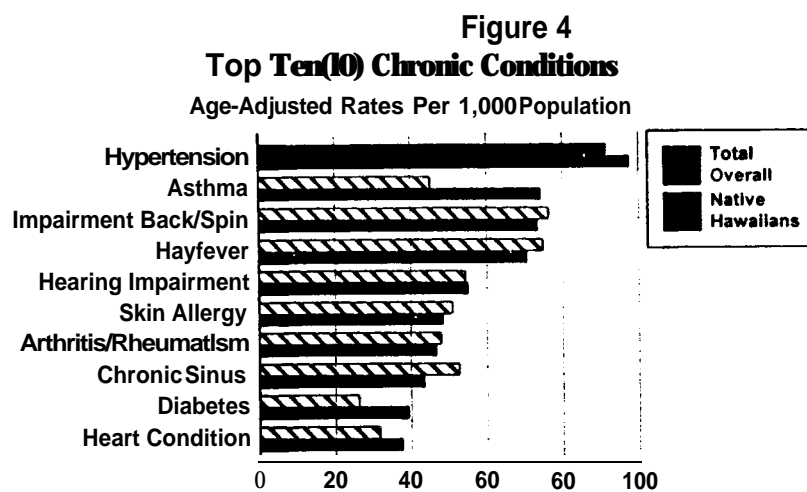
Chronic morbidity refers to long term **illness** and impairments. Data on chronic morbidity show that, over the past two or three decades, Native Hawaiians have experienced higher rates of chronic illness than have other groups. Studies show an inverse relationship between income and chronic illness and hospitalization for the state's population as well as among Native Hawaiians (12,13). Native Hawaiians report more hospitalization and days spent in bed due to illness than other groups.

A 1978 study showed higher than expected age-sex standardized rates of heart disease, hypertension and cerebrovascular disease among Native Hawaiians, compared to Chinese, Filipinos and Japanese who had lower than expected rates(5). This same report shows that Native Hawaiians have the highest ranking of any group on selected chronic conditions, number of days spent in bed due to illness and number of hospital nights.

Present status

Of the top conditions, Native Hawaiians have higher age adjusted morbidity rates for hypertension, asthma, diabetes and heart conditions than does the total population. This compares to impairments of back and spine, hayfever, hearing impairments, skin allergies, arthritis and rheumatism, chronic sinusitis and impairments of lower extremities that have the same or lower age adjusted rates for Native Hawaiians than for the total population (See Table 4a)

The most prevalent chronic conditions are much the same for the total population as the Native Hawaiians. However, the age-adjusted morbidity rates for the Native Hawaiians are varied; some are higher and some lower than the total population. The top ranked chronic conditions that are higher for Native Hawaiians than for the total population are asthma, diabetes, heart conditions and hypertension. These conditions are a greater problem to Native Hawaiians than they are to the total population, although both are among the top chronic conditions. Top chronic conditions ranked about the same for Native Hawaiians and the total population are impairment of back or spine, hayfever, hearing impairment, skin allergy and arthritis/rheumatism. Chronic sinusitis is less for Native Hawaiians than for the total population, although it is ranked among the top chronic conditions overall (See Figure 4 below).



Source: Health Surveillance Survey OHSM DOH

Among the Native Hawaiian subgroups, Hawaiians have higher rates compared to Part-Hawaiians for hypertension, diabetes and impairments of lower extremities.

The distribution of morbidity is slightly different for Native Hawaiian males and females. For males hypertension, asthma, heart condition and diabetes rates are higher for Native Hawaiians than for total population males. By comparison, Native Hawaiian females have higher age-adjusted rates for hypertension, asthma, arthritis/ rheumatism, skin allergies, hearing impairments, diabetes and heart conditions than do the total population females. This provides a basis for determining priorities for intervention.

Native Hawaiian males have higher rates of hypertension, impairment of back and spine, hearing impairments, heart condition, and diabetes. Native Hawaiian females have higher rates of asthma, hayfever, skin allergies and chronic sinusitis.

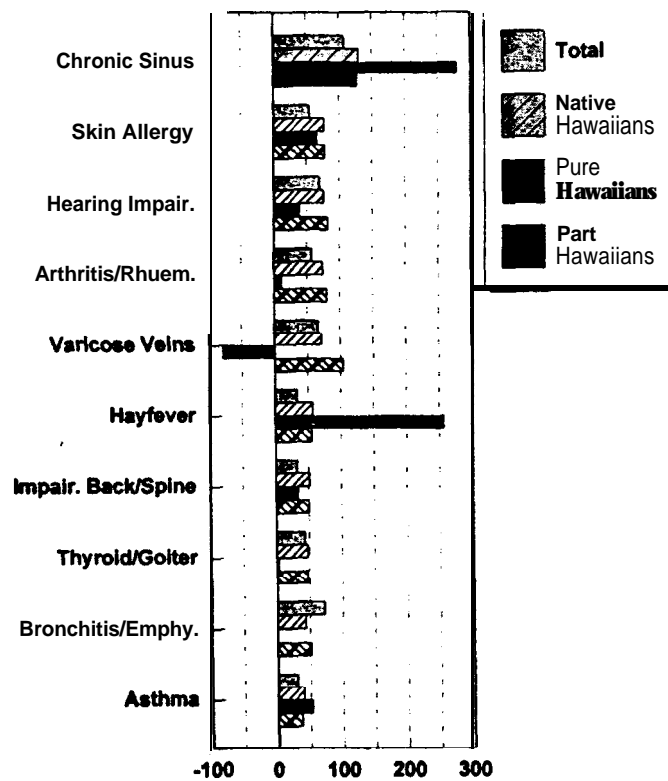
Comparison with 1980-86

Morbidity rates for the top chronic conditions have all risen between the 1980-86 and the 1989-91 period (See Table 5 and Figure 5 below). The overall average increase for chronic conditions was 17%. This compares to chronic sinusitis which increased by 131% for Native Hawaiians compared to 108% for the total population. Skin allergy increased by 78% for Native Hawaiians compared to 56% overall. Hearing impairments increased by 77% for Native Hawaiians compared to 71% overall. Arthritis/rheumatism was next with 75% compared to 58% overall. Next came varicose vein (73%), hayfever (59%), and impairment of back and spine (52%) compared to lower increases for the total population. While there are increases in the other chronic conditions, they were closer to the overall average.

Conditions which have increased the most for males are hearing impairment, arthritis/rheumatism, heart disease, and asthma in that order (See Table 5). Conditions that have

increased the most for females are hearing impairment, arthritis/rheumatism, impairment of back and spine, impairment of lower extremities, bronchitis/emphysema and hayfever in that order.

Figure 5
 Percentage Increase from 1980-88 to 1989-91,
 For the Top Ten(10) Chronic Conditions



Source: Health Surveillance Survey, Hawaii State Department of Health

Overall, morbidity increased more rapidly for both Native Hawaiian males and females than total males and females during the period 1980-86 to 1989-91. Conditions where Native Hawaiian males have higher percentages of change than found for the total males are hayfever and asthma. Changes in rates for Native Hawaiian females have increased more than total females for hayfever, asthma, hearing impairments, arthritis/rheumatism, impairment of back and spine, and impairment of lower extremities.

Table 4a (total) Age-adjusted Morbidity 1989-91

Table 5a (total) Changes in Morbidity Rates from 1980-6 to 1989-91

CANCER INCIDENCE 1988-92

An ethnic comparison based on the 1988-92 incidence data from the Hawaii Tumor Registry and other cancer registries participating in the Surveillance, Epidemiology and End Results (SEER) Program of the National Cancer Institute shows that Native Hawaiians rank fourth in the nation for overall cancer incidence (Table 6A) (15). Among the five main ethnic groups in Hawaii, Native Hawaiians had the second highest overall incidence rate of cancer for both sexes in 1986-90 (Table 6B). Table 6B also shows that although the ranking among ethnic groups has not changed in the state, the overall rate of cancer for Native Hawaiians may have decreased somewhat in recent years. Most of this change is due to a decline in stomach and cervical cancer rates which has decreased by about half between 1976-80 and 1986-90. Although declining stomach and cervical cancer rates have been long standing trends for all ethnic groups in the United States and in Hawaii, they appear to have taken a sharper slope in recent years for Native Hawaiians than for other ethnic groups. These trends in the U.S. as in other developed countries are thought to be the result of a decrease in intake of salted and other preserved foods (stomach cancer) and screening for, and treatment of, precancerous lesions (cervical cancer) (16).

In contrast to the favorable trends for gastric and cervical cancers, increases in incidence have occurred in Native Hawaiians for several major cancers, including female lung and breast cancers and, to a lesser extent, colon cancer in both sexes (Tables 6C and 6D). The increase in female lung cancer parallels the increase observed for Caucasian women and almost certainly reflects an increase in cigarette smoking 10-20 years earlier. In contrast male lung cancer rates for Native Hawaiians appear to have leveled off and possibly decreased. However, these rates remain extremely high, the highest in Hawaii and among the highest in the nation. A genetic predisposition to lung cancer was suggested by the observation that, for a given amount of smoking, lung cancer rates for Hawaiians are 2-fold greater than for Japanese and 50% higher than for Caucasians (17).

The rise in breast cancer rates in Hawaiian women has occurred **mainly** for early-stage tumors (in-situ and localized stages) (Table 6B) and, thus, may reflect progress in early detection due to an improved awareness and increased screening. This is consistent with the results of the Behavioral Risk Factor Survey conducted by the Hawaii Department of Health which showed an increased utilization of mammography by Native Hawaiian women between 1987 and 1990 (18). If this interpretation is true, a favorable impact on breast cancer mortality should be observed in the coming years. The increase in colon cancer rates is more moderate and rates for this cancer remain relatively low in Hawaiians.

It is noteworthy that in contrast to other ethnic groups in **Hawaii** and to whites on the U.S. mainland, rates have not changed in Native Hawaiians for another important cancer, namely, prostate cancer (Table 6C). Most of this increase in Hawaii and the rest of the U.S. is believed to be due to screening and is observed mainly but not entirely for the early-stage tumors (Table 6E). The lack of increase in localized prostate cancer in Native Hawaiians (Table 6E) suggests that prostate cancer screening (i.e. by serum PSA measurement) is not as common in this group as in the other ethnic groups in Hawaii.

Cancer remains a very significant cause of morbidity and mortality in Native Hawaiians. Among ethnic groups in Hawaii, Native Hawaiians continue to have the highest incidence and mortality rates for lung cancer and the highest mortality rate for all cancers and breast cancer. Although some favorable trends are noted, such as a leveling off of lung cancer rates in men, other trends are worrisome such as the increase in lung cancer rates in women.

Table 6A. Average Annual Age-adjusted (1970 U.S. Population) Incidence Rates for all Cancers by Ethnic/Racial Group, United States, 1988-92

<u>Ethnicity</u>	<u>Male</u>	<u>Female</u>
African American	559.7	325.9
White	469.2	345.5
Alaskan Native	372.8	347.7
Native Hawaiian	339.7	320.7
Vietnamese	326.2	272.6
Japanese	322.2	240.8
Chinese	282.3	213.3
Filipino	273.7	224.1
Korean	266.0	180.3
American Indian (New Mexico)	196.0	179.8

Source: National Cancer Institute, SEER Program

Table 6B. Age-adjusted (1970 U.S. Population) Average Annual Incidence Rates (per 100,000 for) all Cancers by Sex and Race, Hawaii, 1971-90

	Native Hawaiian	Caucasian	Japanese	eChinese	Filipino
MALE:					
1971-75	383.5	400.4	297.8	240.6	214.7
1976-80	407.6	444.7	299.1	281.2	237.2
1981-85	377.2	457.0	310.4	261.1	242.7
1986-90	367.3	503.8	314.1	261.8	267.7
FEMALE:					
1971-75	349.0	338.6	217.1	258.2	201.0
1976-80	330.2	356.6	214.1	253.7	195.1
1981-85	356.3	366.1	213.5	222.7	204.4
1986-90	326.1	406.1	255.4	234.4	225.3

Source: Hawaii Tumor Registry, May 1995

Table 6C. Age-adjusted (1970 U.S. Population) Average Annual Incidence Rates (per 100,000) for Males Hawaii, 1976-80 and 1986-90

		Native Hawaiian	Caucasian	Japanese	Chinese	Filipino
Stomach	1976-80	46.3	15.1	43.9	16.0	11.4
	1986-90	20.2	13.7	30.6	15.1	10.2
Colon	1976-80	24.6	40.3	40.8	34.9	25.9
	1986-90	28.3	47.8	52.0	31.4	23.6
Rectum	1976-80	17.3	18.3	25.2	20.5	19.0
	1986-90	18.1	18.8	25.8	18.9	19.6
Pancreas	1976-80	10.3	11.7	9.7	9.2	8.7
	1986-90	10.7	10.9	9.0	10.3	8.9
Lung	1976-80	114.0	83.6	48.1	50.4	33.7
	1986-90	95.1	85.8	45.2	37.4	45.3
Prostate	1976-80	58.9	81.5	44.5	38.3	48.9
	1986-90	58.7	127.7	63.4	56.2	61.6

Source:

1995

Table 6D
Age-adjusted (1970 U.S. Population) Average Annual Incidence
Rates (per 100,000) for Females, Hawaii, 1976-80 and 1986-90

	Native Hawaiian	Caucasian	Japanese	Chinese	Filipino
Stomach					
1976-80	23.7	8.0	19.4	13.6	8.8
1986-90	14.3	7.7	16.7	7.1	7.6
Col on					
1976-80	13.8	29.9	23.7	27.0	14.8
1986-90	17.6	35.4	31.6	27.1	16.9
Rectum					
1976-80	9.6	10.0	11.4	10.5	5.2
1986-90	6.5	11.5	10.3	10.5	9.6
Pancreas					
1976-80	9.8	10.4	6.6	9.8	3.3
1986-90	10.7	8.5	8.8	7.5	6.2
Lung					
1976-80	38.3	36.8	15.3	26.1	22.7
1986-90	51.6	50.8	13.3	22.8	20.9
Breast					
1976-80	99.7	102.0	51.4	68.0	37.5
1986-90	112.7	133.0	88.6	71.7	56.8
Cervix Uteri					
1976-80	15.8	10.1	7.1	10.8	7.5
1986-90	8.4	10.5	5.8	4.8	9.5
Corpus Uteri					
1976-80	24.0	32.8	18.9	25.0	15.2
1986-90	20.3	21.3	17.7	15.3	11.0
Ovary					
1976-80	9.8	13.4	8.2	9.6	8.7
1986-90	10.0	18.5	10.4	10.8	9.6

Source: Hawaii Tumor Registry, May 1995

Table 6E
Age-adjusted (1970 U.S. Population) Cancer Incidence Rates (per 100,000)
for Prostate and Female Breast Cancer, Hawaii, 1976-80 and 1986-90

	Native Hawaiian	Caucasian	Japanese	Chinese	Filipino
Male Prostate					
Localized					
1976-80	42.4	54.0	30.9	23.1	30.1
1986-90	34.6	79.8	39.9	33.6	35.0
Regional					
1976-80	3.3	9.6	4.8	4.3	7.4
1986-90	4.5	19.8	8.5	8.4	6.9
Distant					
1976-80	9.6	15.6	7.0	10.0	10.2
1986-90	15.8	20.7	10.9	12.1	15.4
Female Breast					
In situ					
1976-80	3.7	6.8	5.0	3.3	3.0
1986-90	15.4	21.9	16.4	14.1	5.2
Localized					
1976-80	51.1	57.6	33.7	42.6	21.0
1986-90	68.2	85.5	59.0	48.4	28.8
Regional					
1976-80	34.0	34.5	15.2	21.5	11.7
1986-90	33.6	38.5	25.2	19.3	21.9
Distant					
1976-80	13.1	7.1	2.1	3.2	4.5
1986-90	6.5	5.3	3.3	2.5	3.3

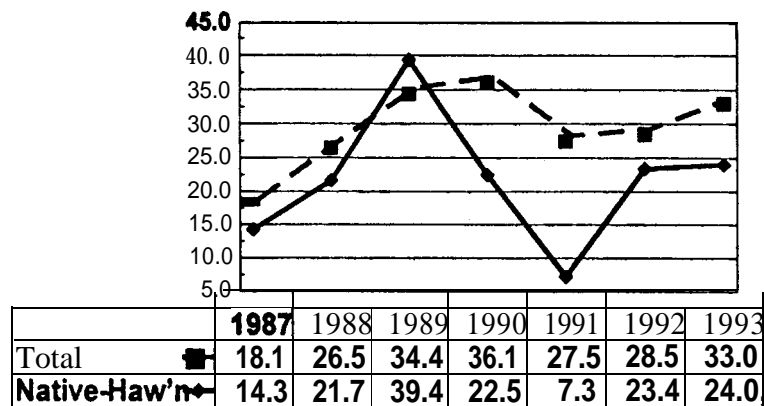
Source: Hawaii Tumor Registry, May 1995

BEHAVIORAL RISKS

Behavioral risks are those behaviors engaged in which place individuals at greater than average risk for chronic diseases, disability and premature death. The Surgeon General estimates that up to half of all deaths in the U.S. are due to unhealthy behaviors or lifestyle (19). This report states that seven of the ten leading causes of death in the U.S. could be reduced if persons at risk were able to control diet, smoking, alcohol use, prevent hypertension and engage in more physical exercise. These have been measured by the Hawaii Behavioral Risk Factors Surveillance Survey (BRFSS), operated by the Health Promotion and Education Branch of the Department of Health, since 1986.

High cholesterol. BRFSS respondents are asked if a health professional has informed them that they have high cholesterol during the past year. The overall trend in high cholesterol has increased between 1987 and 1993 for the total population as well as for Native Hawaiians. Native Hawaiians, however, show a lower percentage during each year, except for 1989, of reporting they have high cholesterol than the total population. Thus, even though Native Hawaiians report an increasing percentage having high cholesterol, their situation is not worse than that of the total population.

Figure 7A
Prevalence of High Cholesterol



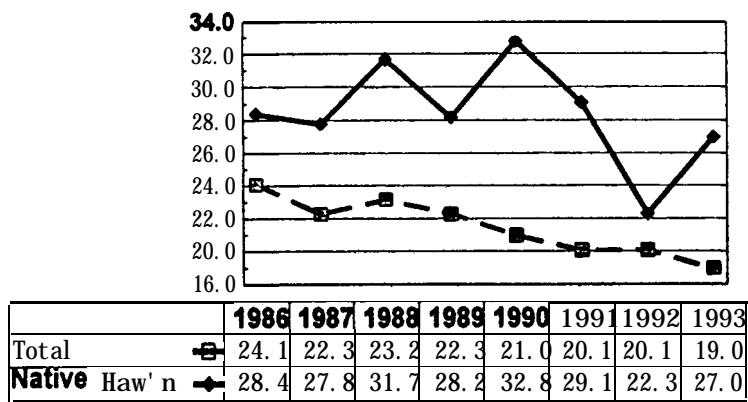
Source: BRFSS, Health Promotion & Education Branch, DOH

Cigarette smoking Smoking is the single most important preventable cause of death and disability in the U.S. (13). Cigarette smoking is linked to lung cancer, as well as cancers of the larynx oral cavity, pancreas and bladder (20). In addition cigarette smoking is responsible for many chronic pulmonary diseases such as emphysema and chronic bronchitis. In addition, it is responsible for heart attacks and various disorders of newborns whose mothers smoked during pregnancy. Fortunately, quitting smoking can reduce the risks of these diseases.

BRFSS respondents are asked if they currently smoke cigarettes. Native Hawaiian prevalence of cigarette smoking has not declined during the 1986-1993 period and continues to

remain much higher than for the total population. This indicates a need for greater awareness and education about the risks associated with cigarette smoking.

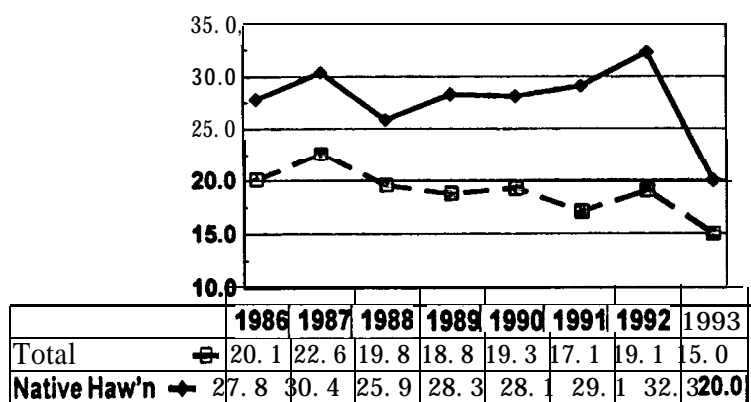
Figure 7B
Prevalence of Cigarette Smoking



Source: BRFSS, Health Promotion | Education Branch, DOH

Acute drinking. Alcohol abuse is a factor in more than 10% of all deaths in the U.S. and is associated with half of all traffic deaths (19). In addition, there is a growing awareness of the connection between alcohol abuse and various forms of violence both at home and in public places. Acute drinking is commonly known as “binge” drinking and is defined as having five or more drinks on one occasion, one or more times during the past month. During the period of 1986 through 1993 the prevalence of acute drinking for Native Hawaiians has been higher than for the total population and, for most of the years between 1987-1992 (Figure 7C).

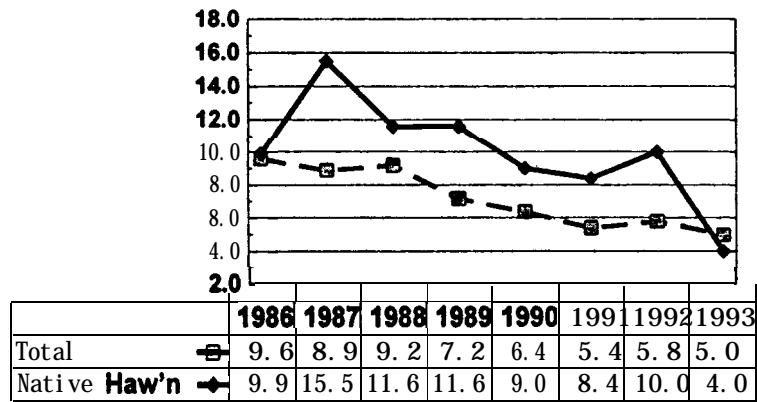
Figure 7C
Prevalence of Acute Drinking



Source: BRFSS, Health Promotion & Education Branch, DOH

Chronic drinking. Chronic drinking is **defined** as having 60 or more alcoholic drinks during the past month. This has been shown to be a risk factor for alcohol related mortality and morbidity (23). Figure 7D illustrates the trends in chronic drinking between 1986 and 1993 for Native Hawaiians and for the total population. For most of the years, between 1987-1992 the Native Hawaiian chronic drinking prevalence was much higher than for the total population.

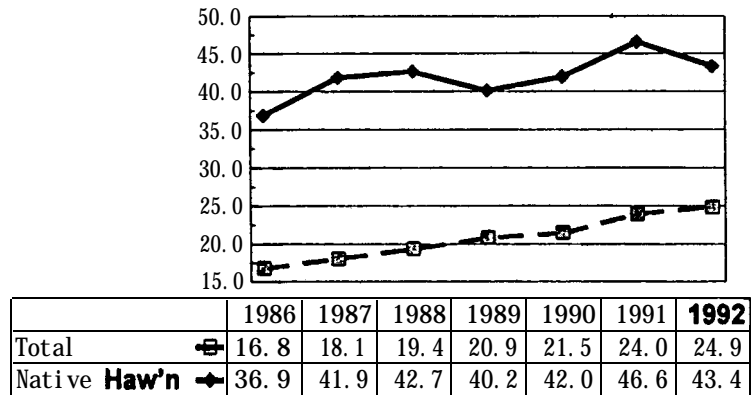
Figure 7D
Prevalence of Chronic Drinking



Source: BRFSS, Health Promotion & Education Branch, DOH

Overweight. The prevalence of overweight (defined as being more than 20% over the recommended weight) among Native Hawaiians exceeds that of the total population by a factor of two (See Figure 7E). The Native Hawaiian increase parallels the increase in prevalence of the total population, although the level of Native Hawaiian prevalence is much higher.

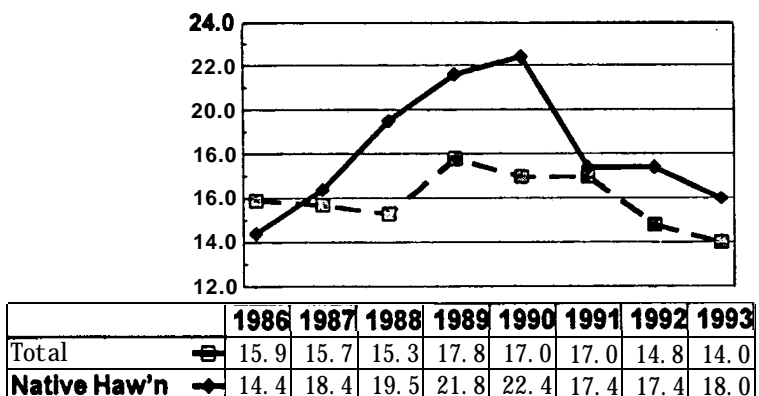
Figure 7E
Prevalence of Overweight



Source: BRFSS, Health Promotion & Education Branch, DOH

Hypertension BRFSS respondents are asked if a health professional has ever told them that they have high blood pressure or hypertension. The prevalence of hypertension in Figure 7F illustrates the known cases, but does not include those who have hypertension and do not know it. The trend line for Native Hawaiians shows a sharp increase in prevalence from 1986 to 1990 and then shows an equally sharp decline to 1993. The Native Hawaiian known prevalence increased and the total population prevalence declined during the period.

Figure 7F
Prevalence of Hypertension

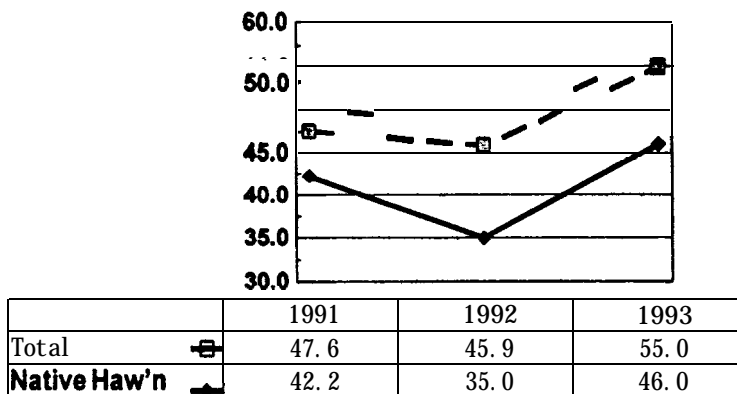


Source: BRFSS Health Promotion & Education Branch, DOH

Women's health screening

Beginning in 1991, BRFSS female respondents were asked if they ever had a mammogram. In 1991 some 48% of women in the general population said they had. By 1993, 55% of women reported having had a mammogram at some time. Percentages for Native Hawaiian women also increased during the period; in 1991, 42% said they had a mammogram and, by 1993, 46% said they had. The Native Hawaiian participation in mammogram screening is somewhat lower than for the total population (See Figure 7G).

Figure 7G
Women Who Had a Mammogram



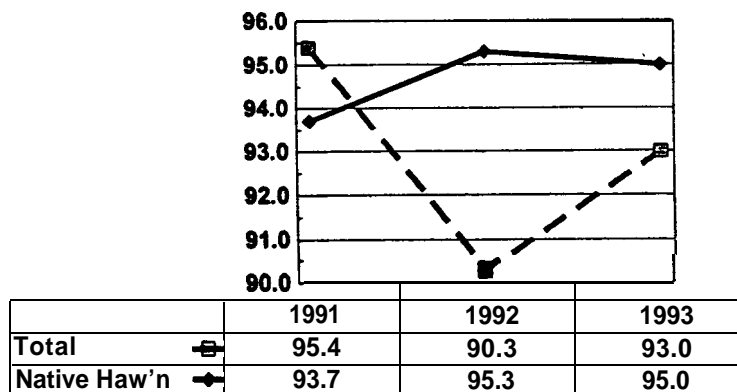
Source: BRFSS, Health Promotion & Education Branch, DOH

Compared to mammograms, far more women report having had a clinical breast examination. The overall percentage reporting having had a breast examination is about the same for Native Hawaiians as for the total population. In 1991 over 87% of Native Hawaiians and total population women said they had a breast clinical examination. However, by 1993, the percentage dropped slightly to 86% for Native Hawaiians and for total population women. This

method of screening should be done annually in order to be effective. It was found that, among women who ever had this type of examination, 80-90% had a breast examination within the past month, indicating that women who had the exam once generally continue breast cancer screening.

Beginning in 1991, BRFSS women respondents were asked whether they ever had a pap smear test. At that time 95% of total women said they had, compared to 94% of Native Hawaiian women (See Figure 71). This percentage fluctuated subsequently but, by 1993, 93% of total women and 95% of Native Hawaiian women reported having a pap smear test. This shows an increase in the percentage of Native Hawaiian women participating in this form of cancer screening. This compares to a decline in total women during the three year period.

Figure 71
Women Who Had a Pap Smear Test



Source: BRFSS, Health Promotion & Education Branch DOH

Overall, Native Hawaiian women are participating at nearly the same level as women in the total population regarding different cancer screening methods.

OVERALL SUMMARY AND RECOMMENDATIONS

Mortality

The overall age-adjusted rates for Pure Hawaiians is 2,200 per 100,000 compared to Part-Hawaiians (772 per 100,000) and Native Hawaiians (927 per 100,000). This compares with the rates for the total population of 650 per 100,000. Native Hawaiian sub groups are generally higher across all major causes of death, even though the top causes of death for the Native Hawaiian categories are about the same as for the overall total Population. Generally, pure Hawaiians have much higher age-adjusted mortality rates than Part-Hawaiians. Although pure Hawaiians are much fewer in numbers than Part-Hawaiians, it is important to assure their continuing survival through improved health with various Native Hawaiian health care initiatives and programs.

For Native Hawaiians, the causes of death are highest for circulatory disease (415 per 100,000), with heart disease (333 per 100,000) and cerebrovascular disease (58 per 100,000) being the highest in that category. Next are malignant neoplasms (231 per 100,000), with cancer of the respiratory system (80 per 100,000) and cancer of the digestive system (64 per 100,000) being highest in that category. Next are accidents (39 per 100,000), diabetes (35 per 100,000), and influenza/pneumonia (25 per 100,000). These top causes of death for Native Hawaiians have already been high priority targets for monitoring, screening and treatment programs in various Hawaiian health initiatives. This indicates that continuing efforts are justified.

Mortality rates have increased for the overall population by 20% during the period from 1980-86 to 1989-91. The average increase during the period for Native Hawaiian mortality rates was 19%, compared to Hawaiians 48% and Part-Hawaiians 16%. The causes of death that have increased the most for Native Hawaiians are accidents (firearm (300%), falls (119%), poisoning (100%)), other infectious and parasitic diseases (100%), other heart disease (80%) and malignant neoplasms (genital (58%) and respiratory (52%)). Along with the top causes of death discussed previously, these causes of death should also be high priority for monitoring and intervention among Native Hawaiians.

Causes of death for which rates declined for Native Hawaiians during the period are accidental deaths due to fire (-100%), atherosclerosis (-41%), congenital anomalies (-31%), breast cancer (-29%), tuberculosis (-26%), hypertensive heart disease (-21%), nephritis (-20%), ischemic heart disease (-14%), perinatal conditions (-14%), and hypertension (-12%). Most of these (accidental deaths due to fire, atherosclerosis, breast cancer, hypertensive heart, ischemic heart and hypertension) declined more rapidly than for the total population. This indicates relative progress in controlling these causes of death among Native Hawaiians.

The years of productive life lost (YPLL) for Native Hawaiians are greatest for heart disease, accidents, cancer and homicide. Suicide and AIDS cause greater YPLL for males than females, and stroke causes about equal YPLL for males and females. Native Hawaiians have a shorter average life expectancy than the overall population. By controlling these causes of death that contribute most to years of productive life lost, Native Hawaiians will enjoy greater longevity.

Morbidity

Although the most prevalent chronic conditions are much the same for the total population as for the Native Hawaiians, some of the age-adjusted morbidity rates for Native Hawaiians are higher and some are the same or lower than the total population. The top ranked chronic conditions for Native Hawaiians are hypertension (98 per 1,000), asthma (74 per 1,000), impairment of back or spine (74 per 1,000), hayfever (71 per 1,000), hearing impairment (55 per 1,000), skin allergy (49 per 1,000), arthritis and rheumatism (47 per 1,000), chronic sinusitis (44 per 1,000), diabetes (40 per 1,000) and heart conditions (38 per 1,000). Of these, asthma, diabetes, heart conditions and hypertension are a greater problem to Native Hawaiians than they are to the total population. The other top ten chronic conditions are the same or less of a

problem to Native Hawaiians than to the total population. Programs to monitor, screen and intervene in controlling diabetes, heart conditions and hypertension are underway in certain Hawaiian communities and it is important to maintain this effort in order to reduce the problems associated with these conditions.

Morbidity rates for the top chronic conditions have all risen between the 1980-86 and the 1989-91 period. The average increase for chronic conditions was 16% for the total population and 12% for Native Hawaiians, indicating less decline in health for Hawaiians. The chronic conditions that increased the most for Native Hawaiians are sinusitis (131%), skin allergy (78%), hearing impairments (77%), arthritis/ rheumatism (75%), varicose veins (73%), hayfever (59%), and impairment of back and spine (52%) For these conditions the total population experienced slower increases.

Conditions which increased the most for males are hayfever **hearing** impairment, arthritis/rheumatism, heart disease, and asthma Conditions that increased the most for females are hearing impairment, arthritis/rheumatism, impairment of back and spine, impairment of lower extremities, bronchitis/emphysema and hayfever in that order.

Pure Hawaiians, compared with Native Hawaiians, experience the greatest negative effects of the illness conditions. This contrasts with Part-Hawaiians, whose experience is closer to that of the overall population The conditions that have the greatest impact in terms of disability days, restricted activity and activity limitation are cerebrovascular disease, heart disease, malignant neoplasms, diabetes, mental and nervous conditions and impairments of the back and spine This is consistent with the fact that these conditions are also among the top chronic conditions in terms of prevalence, indicating that efforts toward monitoring, prevention and treatment of these conditions should be of the highest priority. There is no consistent pattern of difference between males and females regarding disability and activity limitation.

Behavioral Health Risks

The overall trend in high cholesterol has increased between 1987 and 1993 for the total population as well as for Native Hawaiians. Native Hawaiians, however, show a lower percentage during each year, except for 1989, of reporting they have high cholesterol than the total population. Thus, even though Native **Hawaiians report an** increasing percentage having high cholesterol, their situation is not worse than that of the total population.

Native Hawaiian prevalence of cigarette smoking has not decline **during the** 1986-1993 period and continues to remain much higher than for the total population. This indicates a need for greater awareness and education about the risks associated with cigarette smoking.

During the period of 1986 through 1993 the prevalence of acute drinking for Native Hawaiians has been higher than for the total population, and for most of the years between 1987-**1992. the** Native Hawaiian chronic drinking prevalence was much higher than for the total

population. Greater awareness and education about the health risks associated with drinking is appropriate.

Overweight in the total population increased during the 1987-1993 period. Native Hawaiian increases parallel the total population, although the level of Native Hawaiian prevalence is much higher. Some current efforts to promote lifestyle changes in diet are underway and have been successful. These efforts can be publicized along with expanded efforts to increase awareness of the health risks associated with overweight and encouragement and efforts to promote culturally appropriate programs.

The 1986 prevalence of hypertension was 14% for Native Hawaiians, compared to 16% for the total population. By 1993 the Native Hawaiian prevalence rose to 16% compared to 14% for the total population. Thus Native Hawaiian known prevalence increased and the total population prevalence declined during the period. Again, this may be correlated with the prevalence of overweight and some of the same efforts may be efficacious, along with greater attention to screening and prevention.

In 1991, 48% of women in the general population said they had a mammogram; this increased to 55% by 1993. Percentages for Native Hawaiian women also increased during the period, in 1991, 42% said they had a mammogram and by 1993, 46% said they had. This indicates progress in breast cancer screening for Native Hawaiians, although there is still need for more effort.

In 1991 over 87% of Native Hawaiians and total population women said they had ever had a breast clinical examination; however, by 1993, the percentage dropped slightly to 86% for Native Hawaiians and for total population women. Native Hawaiian women are doing well in this regard and appear to be using cancer screening effectively. It is necessary, however, to emphasize the need for continued screening in order for it to be effective.

In 1991, 95% of total women said they had ever had a pap smear test, compared to 94% of Native Hawaiian women. By 1993 of total women and 95% of Hawaiian women reported having a pap smear test, showing an increase in the percentage of Hawaiian women participating in this form of cancer screening. Native Hawaiian women are doing exceptionally well in obtaining pap smear tests. It is good to emphasize the need to continue to have pap smear test sin order to detect cervical cancer early.

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