Marsh

401191

TRUST TERRITORY OF THE PACIFIC ISLANDS

FIVE YEAR COMPREHENSIVE HEALTH PLAN

February, 1979

[redacted] 5009103

CHAPTER FOUR

VI. DEMOGRAPHY

A. Population Size:

Table IV-2 shows the number of TTPI citizens residing in each district of the Trust Territory, and indicates what percentage of the total Micronesian population they represent. Truk has the TTPI's largest population, followed in order of size by the Marshalls, Ponape, Palau, Yap and Kosrae.

TABLE IV-2 DISTRICT POPULATION (TTPI CITIZENS), 1973*

District	Population	Percent of Total TTPI Population
Kosrae	3,989	3.9
Marshalls	25,045	25.2
Palau	12,673	12.6
Ponape	19,263	19.1
Truk	31,609	31.3
Yap	7,870	7.8
TTPI TOTALS	100,918	99.9

Source: OPS Bulletin of Statistics 12/77

*Excluding those individuals of unspecified place of residence and citizens of foreign nations including the U.S.

[redacted]

B. Age Distribution:

Table IV-3shows the percentage of each district's population according to age groups. The youthful character of Micronesia's population is clearly evident; in 1973 approximately 47% of the population was under fourteen years of age. Conversely, less than ten percent of all Micronesians were older than fifty-five years.

TABLE IV-3 POPULATION OF THE TRUST TERRITORY AND THE NORTHERN MARIANAS BY AGE AND SEX, 1973 - all persons, percentages

(De Facto Population by District of usual residence)

District / Age Group	Total Trust Territory			Kosrae			Marshalls			Palau			Ponape			Truk			Yap			Northern Marianas		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
0-4	18.1	18.5	17.8	18.8	18.4	19.1	19.3	19.6	18.8	15.0	15.1	14.9	18.7	18.7	18.6	18.5	18.9	18.1	15.5	15.9	15.0	16.9	16.5	17.1
5-9	15.6	15.9	15.3	17.6	17.2	17.6	15.9	16.0	15.8	15.9	15.8	16.5	15.4	15.7	15.1	15.1	15.5	14.8	14.0	14.2	13.9	15.3	15.1	15.6
10-14	13.4	13.6	13.2	14.4	16.7	12.1	12.5	12.2	12.9	14.4	14.4	14.5	13.9	14.2	13.7	12.9	13.0	12.9	12.8	13.4	12.2	13.4	13.3	13.5
15-19	11.5	11.6	11.4	11.5	11.0	12.0	11.3	11.0	11.7	12.3	12.6	11.9	11.3	11.5	11.1	11.2	11.5	10.9	11.0	10.3	11.7	11.4	10.4	12.6
20-24	8.3	8.3	8.3	7.4	6.4	8.6	8.5	8.7	8.3	8.5	9.4	7.6	8.1	8.1	8.2	8.4	8.0	8.8	8.0	7.9	8.0	8.8	7.9	9.8
25-29	5.7	5.6	5.8	6.1	5.9	6.4	6.4	6.3	6.6	5.7	6.2	5.2	4.9	4.7	5.0	6.1	6.0	6.3	5.6	6.0	5.2	6.9	7.2	6.5
30-34	4.0	3.9	4.2	4.4	4.1	4.6	4.2	4.6	3.9	4.4	4.4	4.4	4.1	3.8	4.3	4.2	4.1	4.2	4.5	4.1	5.0	5.3	6.1	4.4
35-39	4.2	4.0	4.4	4.3	4.2	4.3	3.7	3.7	3.7	4.2	4.1	4.2	4.2	4.0	4.3	4.6	4.3	5.0	4.9	4.7	5.0	5.0	5.5	4.4
40-44	3.8	3.8	3.7	3.9	3.9	4.0	3.4	3.6	3.1	3.5	3.4	3.6	4.0	3.9	4.1	3.9	4.1	3.8	4.6	4.6	4.6	4.2	2.8	3.5
45-49	3.3	3.1	3.5	2.6	2.1	3.1	3.1	3.0	3.2	3.5	3.0	3.9	3.6	3.6	3.6	3.3	3.1	3.5	3.7	3.6	3.9	3.1	3.7	2.5
50-54	3.3	3.2	3.5	2.8	3.0	2.6	3.0	2.9	3.0	3.3	3.5	3.1	3.7	3.4	4.0	3.3	3.2	3.4	4.2	3.7	4.6	2.9	3.1	2.8
55-59	2.6	2.5	2.6	1.5	1.7	1.3	2.6	2.7	2.6	2.9	2.6	3.1	2.7	2.9	2.5	2.3	2.1	2.4	3.2	3.4	2.9	2.3	2.1	2.5
60-64	2.2	2.2	2.2	1.6	1.6	1.5	2.1	2.1	2.1	1.7	1.6	1.8	2.0	2.1	1.9	2.6	2.6	2.5	2.6	2.6	2.5	1.9	2.0	1.7
65-69	1.5	1.4	1.6	1.3	1.4	1.2	1.4	1.3	1.6	1.6	1.4	1.8	1.3	1.4	1.3	1.5	1.4	1.6	1.8	1.7	1.9	1.2	1.1	1.3
70-74	1.1	1.1	1.1	1.1	1.4	0.7	1.0	0.9	1.2	1.1	1.0	1.2	1.0	1.0	1.0	1.1	1.2	1.0	1.6	1.6	1.5	0.8	0.6	0.9
75 and over	1.4	1.3	1.4	0.9	0.9	0.9	1.5	1.4	1.6	2.0	1.8	2.2	1.1	1.0	1.3	1.0	1.0	1.0	2.1	2.1	2.0	0.7	0.6	0.8

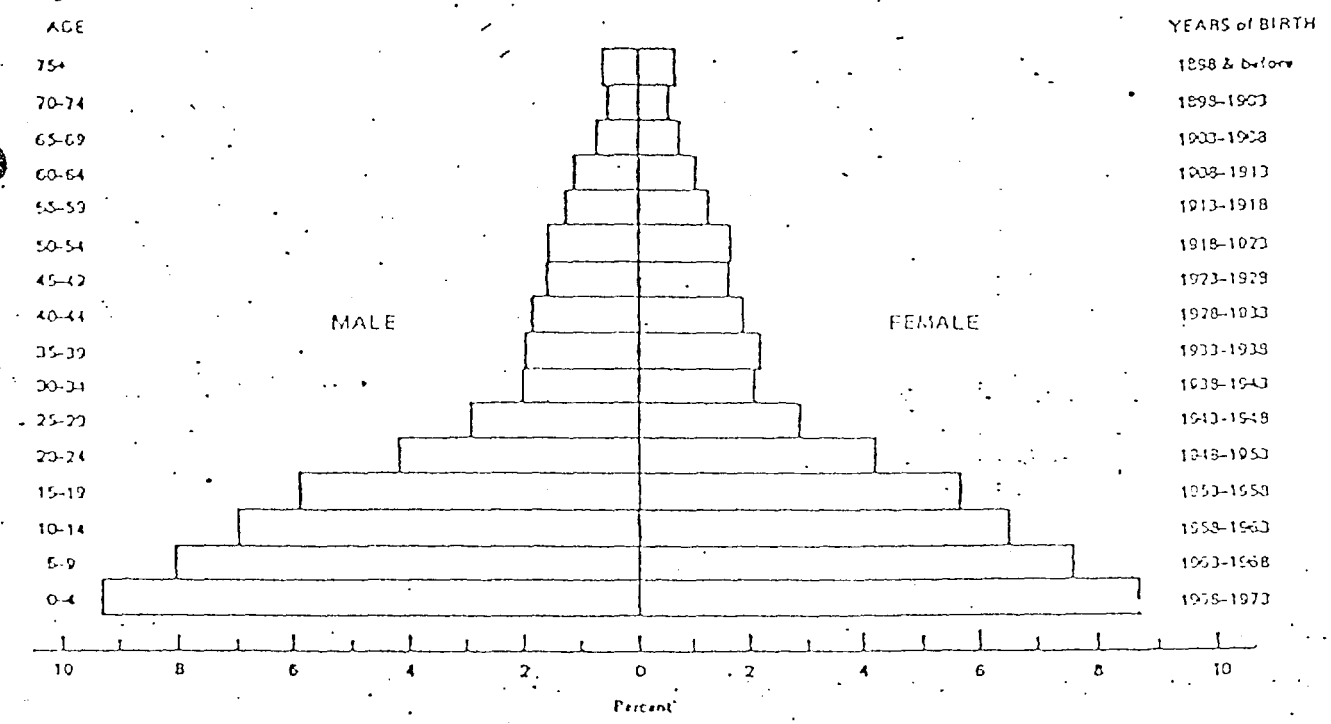
Source: OPS Bulletin of Statistics 12/77

The youthful nature of the T.T.P.I. population is graphically displayed by the population pyramid found on page 55.

[redacted]

1/ The great majority of Micronesians (more than 72 percent) are less than thirty years old, and the Territory's median age (16.2 years) is one of the world's lowest. Particularly significant for population planning is the fact that 72 percent of all females are less than thirty years of age. This represents an extremely high "fedundity" -- i.e. biological potential for reproduction -- in the population. (See Table IV-3)

Figure 1 POPULATION PYRAMID OF MICRONESIANS, 1973



Source: Figure 1 is taken from Alan Kay, "Population Growth in Micronesia," Micronesian Reporter, XXII (2nd Quarter, 1974), No. 2, P. 17.

[redacted]

C. Geographic Distribution:

Table IV-4 shows Trust Territory citizens by place of residence at the time of the 1973 census, both in absolute numbers and as a percent of the total district population.

This table slightly understates the proportion of residents in District Centers since it excludes aliens, who reside almost exclusively in District Centers.

The geographical areas selected are not political sub-divisions, but rather geographical units defined by social characteristics and travel times (accessibility to hospital services). 2/

Table clearly shows that more people live in the district centers than in any other single geographical sub-area. 3/ It also shows that the combined populations of the district and sub-district centers account for more than one-half of the TTPI's entire population. Thus, it is possible to say that most Micronesians reside in areas with relatively easy access to hospitals 4/ and other health services.

[redacted]

TABLE IV-4

TRUST TERRITORY CITIZENS BY PLACE OF RESIDENCE
September 1973

District	D. Center	Sub D.C.	Intermediate*	Outer Islands**
Total 100,918 100%	51,778 47%	9,873 9%	28,550 26%	20,431 18%
Kosrae 3,898 100%	Lelu, Malem, Tafunsak		Walung	
Marshalls	Majuro (DUD, Laura)	Ebeye	Arno	Likiep; Utirik; Ailuk; Mejit; Wotje; Maleolap; Aur; Namorik; Mili, Ebon; Kili; Ailinglaplap; Jaluit, Lib; Jabwot; Rongelap; Namu; Ujelang; Bikini; Wotho; Lae; Ujae; N.S.
25,045 100%	10,290 41%	5,469 21.8%	1,120 4.5%	8,166 32.6%
Palau	Koror		Babelthuap; Angaur; Peleliu; Kayangel	Pulo Anna; Sonsorol; Tobi; N.S.
12,673 100%	7,669 60.5%		4,867 38.4%	137 1%
Ponape	Kolonia; Nett, Sokehs.		Uh; Kiti; Metalanim	Pingelap; Mokil; Nukuoro; Ngatik; Kapingamarangi
19,263 100%	9368 53.8%		6,891 35.8%	2,004 10.4%
Truk	Moen		Dublon; Tol Uman; Fefan; Romanum; Udot; Tsis; Param; Eot; Fala-Beguest	Nama; Losap; Pis-Losap; Namoluk; Oneop; Satawan; Lukunor; Fananu; Etal; Kutu; Moch; Tamatam; Ta; Pulusuk; Puluwat; Pulap; Nomwin; Hagur; Ulul; Onari; Ono; Ruo; Pisaras; Pisaras, Murillo; N.S.
31,609 100%	9,568 30.2%		48 46.3%	93 23.5%
Yap	Rull; Weloy; Gagil; Map; Tomil; Fanif; Gilman; Dalipebinau; Kanifay		Rumung	Ulithi; Fais; Sorol; Lamotrek; Ngulu; Woleai; Faraulep; Elato; Eauripik; Ifalik; Satawal; N.S.
7,870 100%	5,011 63.7%		129 1.6%	2,730 34.7

Source: TTPI SHPDA
from 1973, TTPI Census

* An intermediate area is more than 2 hours but less than 1 day's travel time from the district center.

5009008

Table IV-5 shows distribution among the sub-areas of those persons defined as high-risk in terms of health care problems. The first three groups (0-1 year, infants; 1-4 year, children; and females in the prime child bearing ages, 15-44 years) are the critical ages for maternal and child health care; the last (persons aged 55 years and older) are of importance because of the special health needs of the elderly.

TABLE IV-5

GEOGRAPHIC DISTRIBUTION OF HIGH-RISK AGE GROUPS (TTPI CITIZENS), 1973

GEOGRAPHIC AREA	INFANT (0-1 year) NUMBER	% *	CHILD (1-4 years) NUMBER	% *	FEMALE (15-44 years) NUMBER	% *	ELDERLY (55 & over years) NUMBER	% *
District Center	1,982	4.4	6,799	15.0	10,562	23.5	3,744	8.3
Sub-District Center	440	8	1,488	27	1,865	34	691	12.6
Intermediate	1,235	4.3	4,236	14.8	4,709	16.5	2,754	9.6
Outer Island	843	4.1	2,940	14.4	3,469	17	2,245	11
TTPI Total	4,500		15,463		20,605		9,434	
Percentage of TTPI Population Falling Into High-Risk Age Categories		4.5		15.3		20		9.4

* Percentage of Area Population in High-Risk Groups

Source: TTPI SHPDA - Note: The combined populations of these high risk age groups (50,002) represent 49.6% of the total TTPI population.

5009109

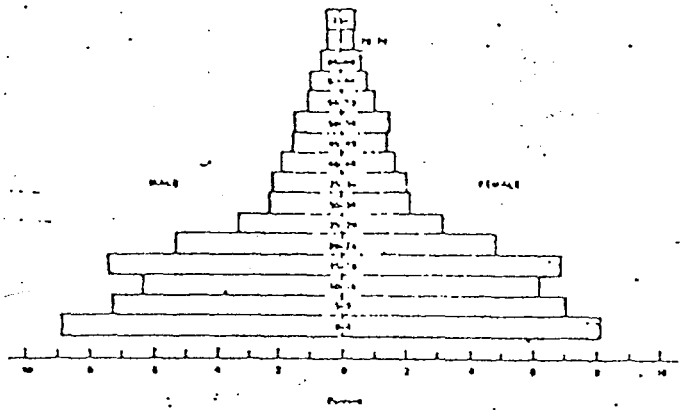
Table IV-5 shows that 49.6 percent of all TTPI citizens fall into these high-risk age groups. In other words, nearly one-half of Micronesia's population can be considered of special interest to health planning because of the propensity of these persons to require certain health services. Table IV-5 also shows that there are proportionately more elderly persons residing in the outer islands and intermediate areas than in the district and sub-district center. At the same time, proportionately more women of the prime child-bearing ages live in the district and sub-district centers than in the intermediate areas and outer islands. Given this latter fact, it may seem surprising that all four geographic subdivisions have relatively similar proportions of infants and children among their populations. This apparent discrepancy is explained by the fact that many district center women of child-bearing age send their children to live with relatives and friends in the other geographic sub-areas of Micronesia.

Figures IV-2b and IV-2c 5/ analyze the district center and outer island populations in terms of age, as well as sex. These two population pyramids show that there is a much larger proportion of young adults of both sexes aged 15-24 years living in the district centers than in the outer islands. This selective migration to the district centers from the outlying areas of the Trust Territory, is probably due to the increased educational and vocational opportunities at the district centers, as well as the attraction exerted by the "modern" amenities available in the district center.

Various characteristics of the district center and outer island populations are summarized in Figure IV-2d.6/ It shows that 25 percent of the district center population is between 15 and 24 years of age, while only 15 percent of the outer island population falls into this age group. Figure IV-2d also shows the small proportion of elderly persons in the TTPI, with more residing in the outer islands than in the district center.

Figure IV-2b

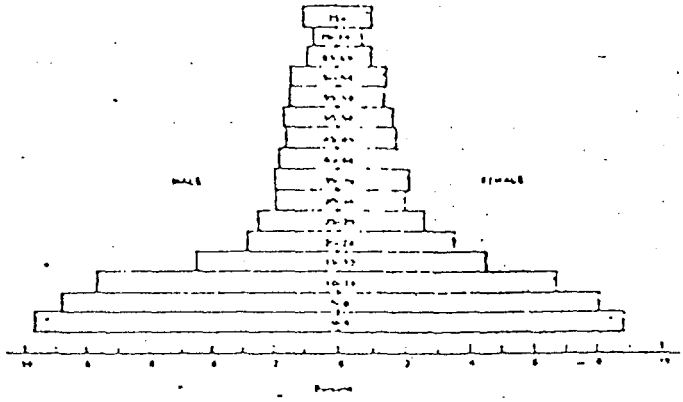
POPULATION PYRAMID OF DISTRICT CENTER RESIDENTS, 1973



Source: Kay's - See Footnote 5

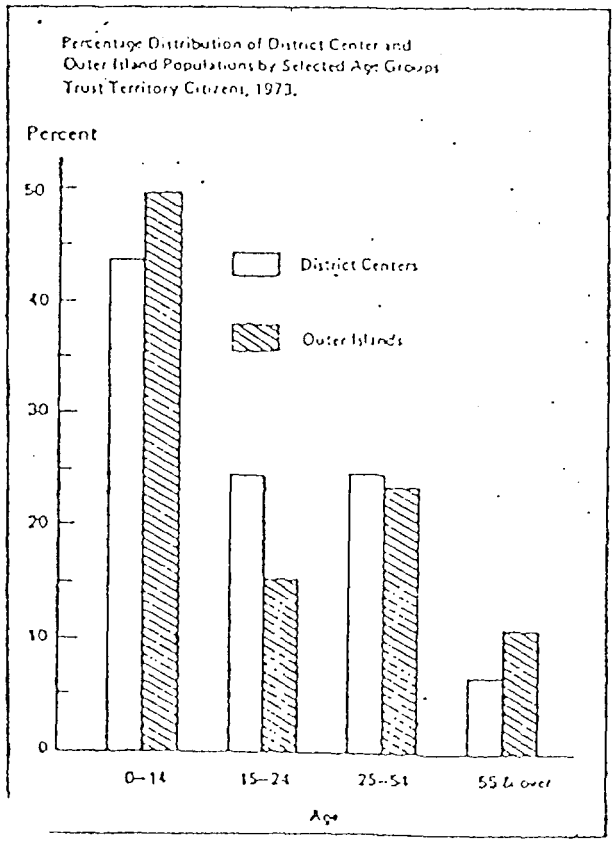
Figure IV-2c

POPULATION PYRAMID OF OUTER ISLAND RESIDENTS, 1973



Source: Kay's - See Footnote 5

Figure IV-2d



[redacted]

Source: Kay's - See Footnote 5

5009112

D. Population Trends and Projections

The population characteristics discussed above were extracted from data compiled in the TT Census of 1973, the Trust Territory's last official population enumeration. When they are compared with data contained in the 1967 TTPI Census, a number of significant changes in the size, composition, and distribution of Micronesia's population become evident. In the following section, we establish these population "trends" (changes between 1967 and 1973), and use them to project plausible patterns of future growth. Our projections assume, of course, that the components of future population growth will continue to closely approximate the rates existing between 1967 and 1973. 7/

The left-hand side of Table IV-6 contains the 1967 and 1973 TTPI citizen populations of each district, and shows the average annual growth rate for each district, as calculated using a formula based on the principle of compound interest.

The table shows that between 1967 and 1973 Micronesia's population grew at a very high rate (3.6 percent annually); if this rate of growth continues, the population will double from 1973 levels by 1993--a period of only twenty years. This extremely high rate of growth is due primarily to high rates of "natural increase"--in other words, most areas of the TTPI have high birth rates and low death rates. This fact is reflected in Table IV-6, which shows that all the districts of the Trust Territory,

[redacted]

except Yap and Palau, have annual rates of growth similar to, or greater than, the 3.6 percent annual growth rate of the entire TTPI.

TABLE IV-6 DISTRICT POPULATION GROWTH

(TTPI CITIZENS), 1967--1973

DISTRICT	RESIDENT POPULATION 1967	RESIDENT POPULATION 1973	Annual Growth Rate %
Kosrae	3,226	3,952	3.4
Marshalls	18,599	25,045	4.4
Palau	10,991	12,673	1.7
Ponape	18,064	19,263	4.0
Truk	24,821	31,609	3.9
Yap	6,618	7,870	2.4
TTPI TOTALS	82,319	100,918	3.6

Source: TTPI SHPDA

[redacted]

Table IV-7 shows the mid-year TTPI citizen population estimate by age groups and projects the size of these age groups up to 1982. The proportion of Micronesians under 30 years of age is projected to increase slightly by 1982 (to 76 percent, as compared to 73 percent in 1973).

Table IV-7

Projected mid-year population of the Trust Territory 1978 - 1982 by age, sex and district.

(TTPI citizens only)

District	Sex	Age group	1978	1979	1980	1981	1982
Trust Territory Total	Both sexes	Total	113,480	116,960	120,640	123,010	129,460
		0 - 14	50,150	52,350	53,320	55,430	57,300
		15 - 64	57,550	59,750	62,060	64,390	66,810
		65 over	4,850	4,860	5,050	5,200	5,350
	Male	Total	57,900	59,630	61,590	63,700	65,950
		0 - 14	26,450	27,010	27,710	28,530	29,470
		15 - 64	29,110	30,140	31,410	32,610	33,860
		65 over	2,310	2,330	2,470	2,550	2,620
	Female	Total	55,550	57,330	59,150	61,320	63,510
		0 - 14	23,760	25,340	25,660	26,900	27,830
		15 - 64	28,440	29,610	30,630	31,780	32,950
		65 over	2,540	2,630	2,560	2,650	2,730
Palau	Both sexes	Total	4,615	4,730	4,540	5,110	5,300
		0 - 14	2,300	2,240	2,190	2,340	2,410
		15 - 64	2,260	2,353	2,439	2,613	2,730
		65 over	150	160	160	160	160
	Male	Total	2,330	2,370	2,500	2,580	2,690
		0 - 14	1,110	1,133	1,153	1,150	1,210
		15 - 64	1,150	1,200	1,253	1,310	1,370
		65 over	80	90	90	90	90
	Female	Total	2,280	2,360	2,440	2,530	2,620
		0 - 14	1,090	1,110	1,140	1,190	1,250
		15 - 64	1,110	1,183	1,240	1,300	1,360
		65 over	72	70	79	70	73
Marshalls	Both sexes	Total	22,880	23,720	25,670	27,210	31,850
		0 - 14	13,030	13,270	13,660	13,930	14,450
		15 - 64	13,750	14,395	15,860	15,960	16,100
		65 over	1,120	1,155	1,210	1,240	1,300
	Male	Total	15,220	15,645	15,120	15,650	16,320
		0 - 14	6,730	6,830	7,010	7,230	7,460
		15 - 64	6,950	7,210	7,500	7,810	8,150
		65 over	530	550	550	600	620
	Female	Total	13,660	14,030	14,550	15,020	15,630
		0 - 14	6,260	6,395	6,550	6,760	6,930
		15 - 64	6,810	7,070	7,360	7,650	7,960
		65 over	590	610	630	660	680
Palau	Both sexes	Total	13,510	14,310	14,890	15,320	15,870
		0 - 14	5,930	6,110	6,310	6,440	6,650
		15 - 64	7,330	7,630	7,950	8,260	8,550
		65 over	590	550	590	610	660
	Male	Total	7,130	7,350	7,550	7,860	8,130
		0 - 14	3,020	3,120	3,210	3,330	3,430
		15 - 64	3,780	3,910	4,050	4,260	4,500
		65 over	270	260	290	290	310
	Female	Total	6,380	6,570	7,340	7,460	7,740
		0 - 14	2,910	2,990	3,050	3,110	3,220
		15 - 64	3,550	3,695	3,850	4,000	4,150
		65 over	320	304	310	330	350
Yap	Both sexes	Total	21,230	22,510	23,140	23,910	24,770
		0 - 14	9,870	9,990	10,159	10,510	10,930
		15 - 64	11,160	11,382	12,000	12,430	12,870
		65 over	800	850	890	930	970
	Male	Total	11,130	11,550	11,850	12,290	12,630
		0 - 14	5,060	5,133	5,240	5,430	5,650
		15 - 64	5,475	5,880	6,099	6,310	6,540
		65 over	600	430	453	470	490
	Female	Total	10,550	10,550	11,340	11,320	12,140
		0 - 14	4,760	4,860	4,950	5,150	5,330
		15 - 64	5,530	5,720	5,910	6,120	6,350
		65 over	490	470	490	448	470
Truk	Both sexes	Total	36,355	37,570	38,659	40,010	41,450
		0 - 14	16,590	16,310	17,410	17,550	18,590
		15 - 64	18,270	18,550	19,670	20,410	21,150
		65 over	1,570	1,550	1,570	1,610	1,640
	Male	Total	18,520	18,960	19,510	20,280	21,020
		0 - 14	8,510	8,266	8,760	9,253	9,577
		15 - 64	9,110	9,430	9,850	10,310	10,650
		65 over	890	738	765	760	800
	Female	Total	17,835	18,610	19,023	19,730	20,430
		0 - 14	7,950	8,153	8,610	8,730	9,078
		15 - 64	9,172	9,535	9,833	10,170	10,533
		65 over	770	824	833	850	830
Yap	Both sexes	Total	8,350	9,010	9,310	9,430	9,540
		0 - 14	3,650	3,510	3,910	4,030	4,210
		15 - 64	4,533	4,730	4,830	5,050	5,150
		65 over	470	480	550	570	570
	Male	Total	4,630	4,560	4,910	4,870	5,020
		0 - 14	1,970	1,970	2,030	2,110	2,150
		15 - 64	2,350	2,390	2,630	2,550	2,630
		65 over	310	340	350	350	360
	Female	Total	4,320	4,540	4,610	4,760	4,920
		0 - 14	1,680	1,540	1,900	1,920	2,060
		15 - 64	2,210	2,340	2,460	2,560	2,610
		65 over	210	240	250	250	260

5009115

It has already been noted that nearly one-half of all Micronesians reside in the district centers. Table IV-8 shows the number of TTPI citizens living in each of the district centers in 1967 and 1973, and indicates the corresponding annual growth rates. It also shows the district center populations as percentages of each district's entire population for 1967, 1973, and projections for 1978, 1982. Clearly, an increasing proportion of each district's future population can be expected to reside in the district centers rather than in the intermediate or outer island areas. The district center annual growth rate is seven percent, the sub-district centers' annual growth rate is 4.2 percent, and the intermediate areas annual growth rate is only 1.6 percent. The total outer island population is expected to decrease slightly each year.

TABLE IV-8 District Center Population Growth, 1967-1973 and District Center Population as a Percent of the Entire District, 1967-1982

Selected District Centers	Resident Population (All Persons) 1967	1973	Annual Growth Rate	District Center as % of District 1967 %	1973 %	1978 %	1982 %
Majuro Atoll	5,077	9,661	11.3	27.2	4[illegible]	51.1	59.4
Moen	5,772	9,293	8.3	23.2	29.7	35.8	40.9
Kolonia-Sokehs-Net	6,311	10,070	8.1	34.9	44	51.7	57.8
Yap	3,741	4,776	6.1	56.5	62.7	67.5	71.0
Kosrae	3,226	3,989		100.0	100.0	100.0	100.0
Koror	5,363	7,219	5.1	48.7	59.3	67.6	73.5
District Center Totals	29,490	45,008					

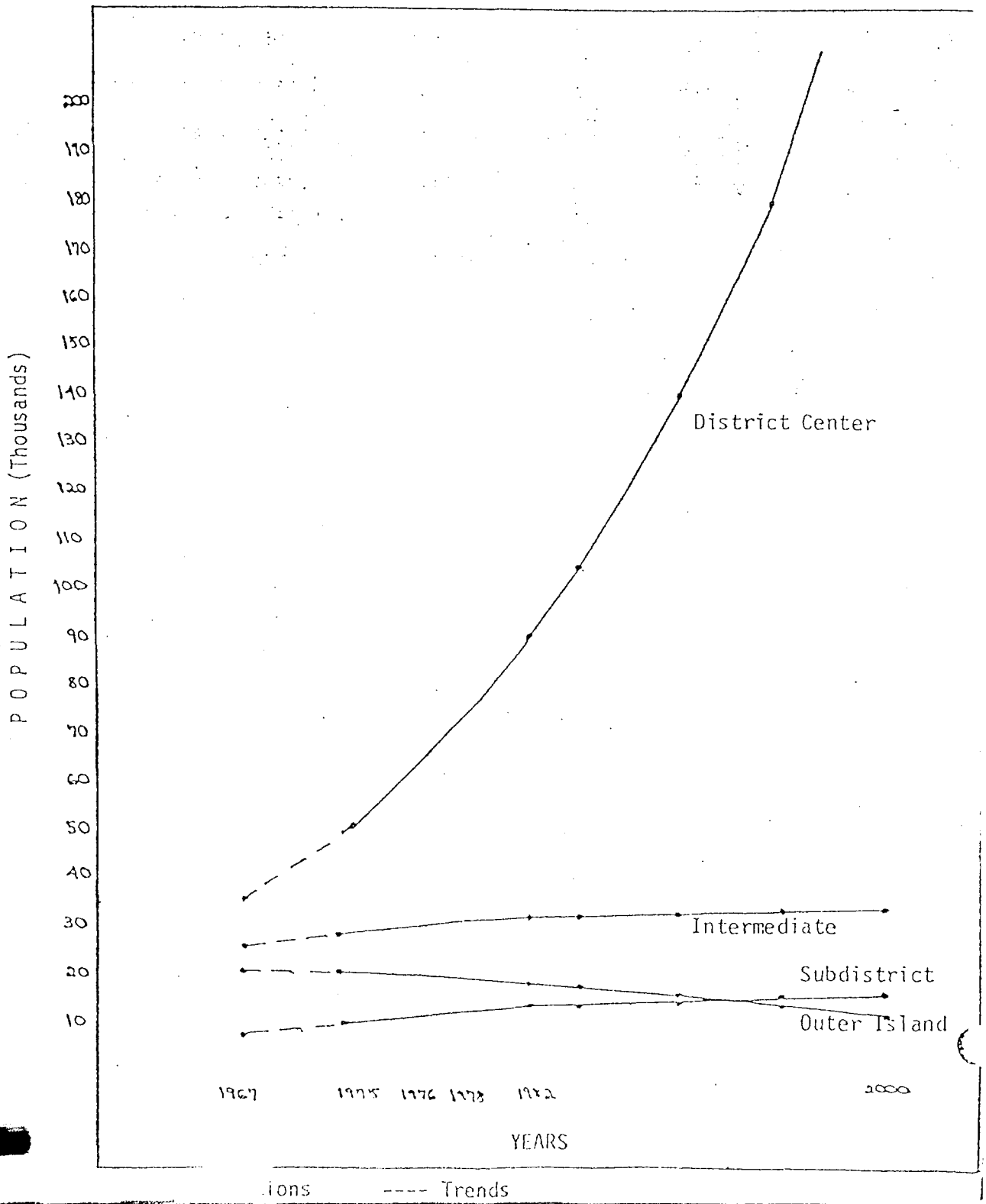
[redacted]
5009116

The projections shown in Table IV-8 are significant for health planning purposes. District center populations are growing nearly twice as fast as the TTPI as a whole; in some instances the rate of growth is even greater. The population of Majuro, for example, nearly doubled in the six years between the last two TTPI censuses. In only fifteen years (1967-1982) the proportion of all Micronesians residing in the district centers is expected to increase by more than 20 percent. This dramatic rate of growth is attributable to the previously mentioned high birth rates, as well as increasing net migratory influx to district centers from other geographical subdivisions of the Trust Territory. Figure IV-3a shows a distinct pattern of in-migration to the district centers from other parts of Micronesia. The graphs show the extremely high rate of district center growth, and the much lower growth rates for sub-district centers and intermediate areas. At the same time, the outer islands have been experiencing a steady population decline. This large difference in growth may be attributed to migration pattern from outlying areas into the district centers.

5009117

Figure IV-3a

GEOGRAPHICAL SUBDIVISION GROWTH
(T.T.P.I. Citizens) 1967-2000
1967-2000



[redacted]

5009118

Figures IV-3b, IV-3c, IV-3d and IV-3e show trends and projections of growth for four high risk age groups, according to geographical distribution.

1. Distribution of Infants:

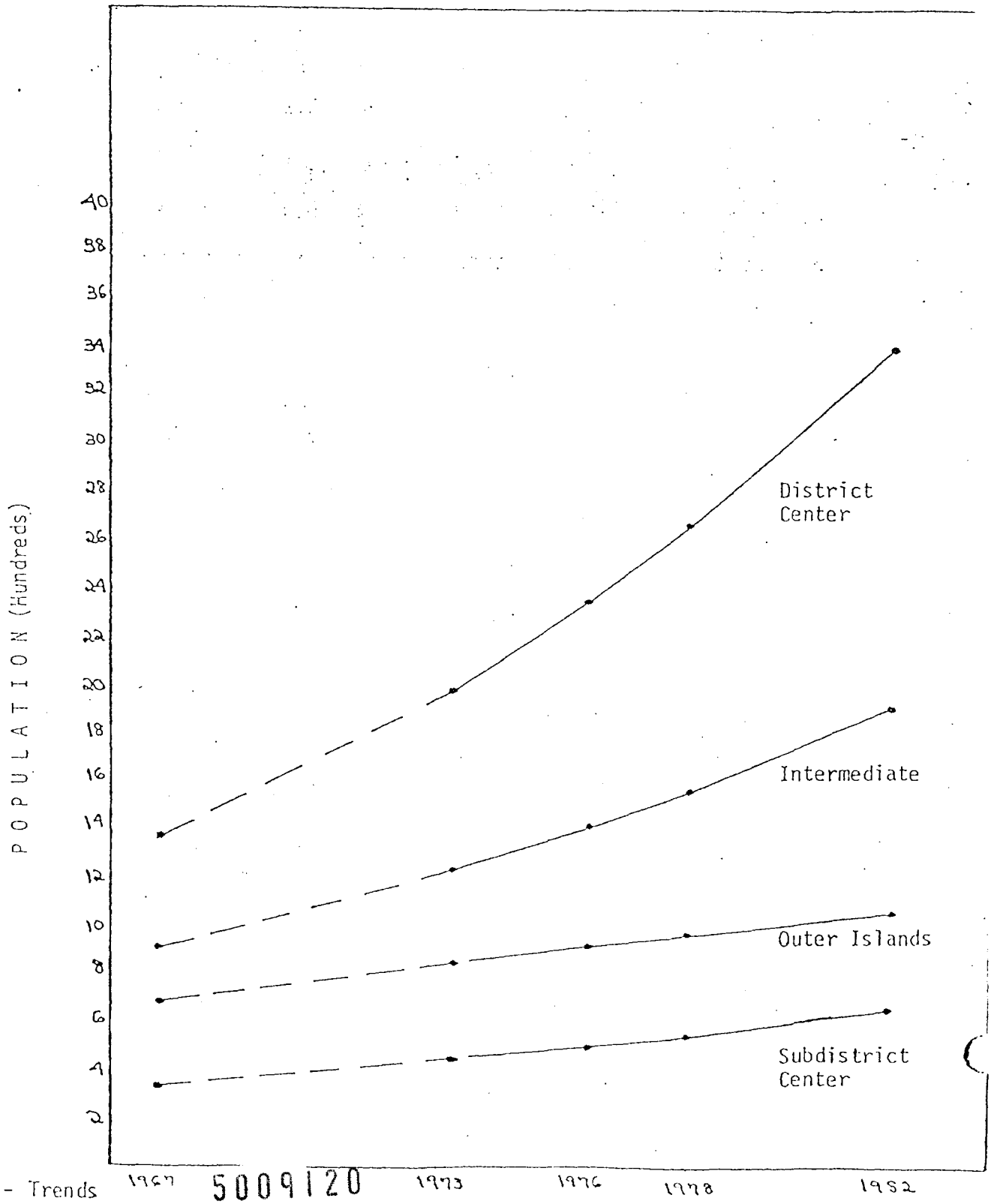
Figure IV-3b indicates that the infant population (0-1 year) is expected to grow at the highest rate in the district centers, followed by the intermediate areas. The sub-district centers and the outer islands are expected to grow at lower levels, but nearly identical rates. At the same time the total number of infants is expected to remain greatest in the district centers, followed by the intermediate areas, the outer islands, and the sub-district centers. By 1982, nearly one-half (48 percent) of all infants are projected to be living in the district centers -- an increase of four percent from 1973. However, despite this steady increase in the numbers of district center infants, this population group will continue to constitute 3.8 percent of the total district center population through 1982. By comparison, infants are expected to constitute increasingly larger proportions of the total sub-district center, intermediate area, and outer island populations. Again this can be attributed to the practice of young women who reside in the district centers, sending their children to live with relatives in outlying regions.

2. Distribution of Children:

5009119

Figure IV-3b

GEOGRAPHICAL DISTRIBUTION OF INFANTS (0-1 Year)
1967-1982 (T.T.P.I. Citizens)



[redacted]

--- Trends

5009120

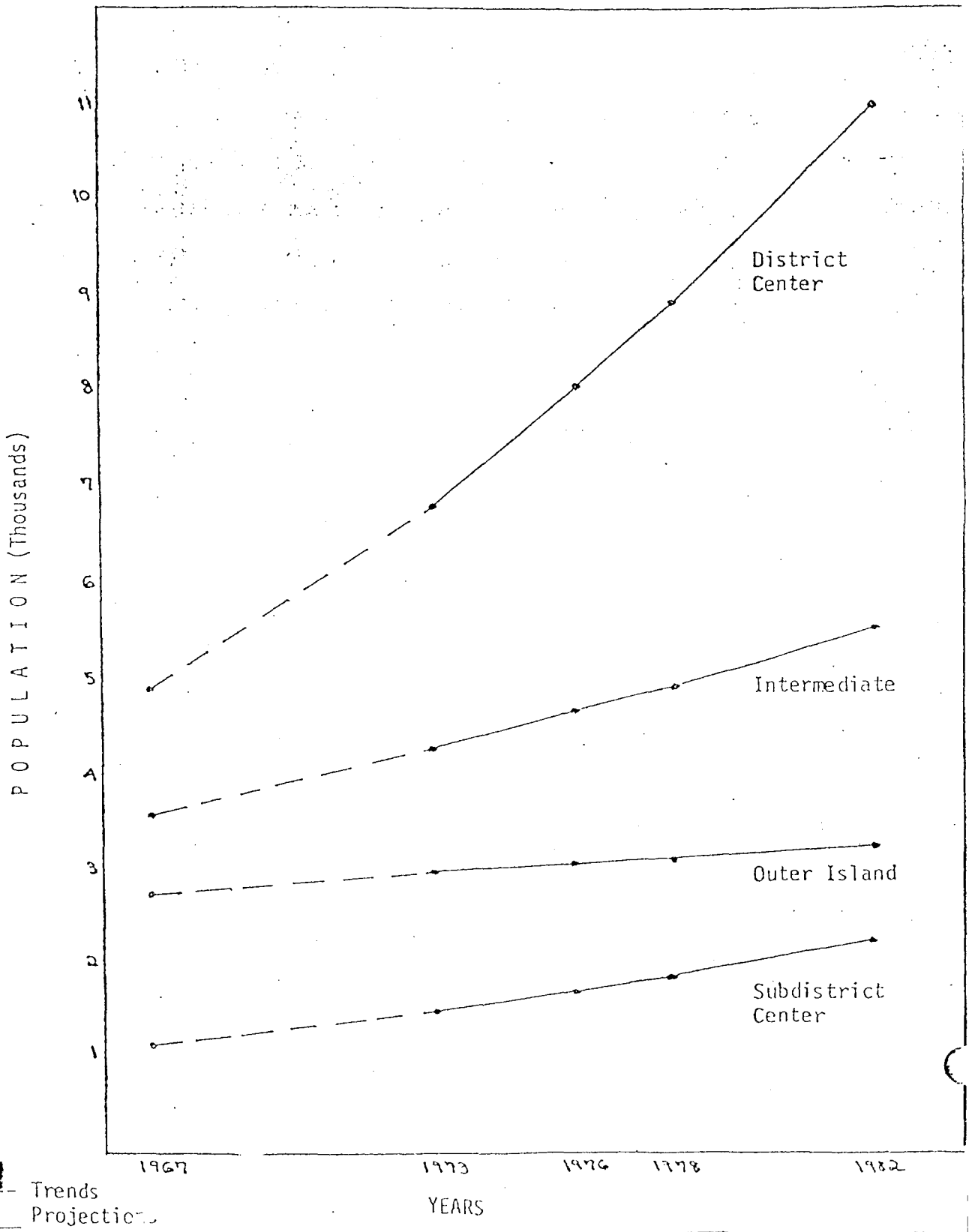
Projections

2. Distribution of Children:

Figure IV-3c shows a projected growth pattern for children (1-4 years) similar to that pattern for infants. Again, the district centers are projected to grow at the highest rate, followed by the intermediate areas. The child population in the sub-district centers is expected to grow faster than in the outer islands. In terms of total numbers, the district centers are also expected to have the greatest number of children, followed by the intermediate areas, the outer islands, and the sub-district centers. Fifty percent of all children are expected to be living in the district centers by 1982. However, they will constitute a decreasing proportion of the district centers' total population (12.1 percent in 1982, as compared to 13.1 percent in 1973), while the population of children in the other geographical subdivisions of Micronesia will constitute an increasing proportion of those areas total population.

3. Distribution of Women:

Figure IV-3c
GEOGRAPHICAL DISTRIBUTION OF CHILDREN (1-4 years)
1967-1982 (T.T.P.I. Citizens)



5009722

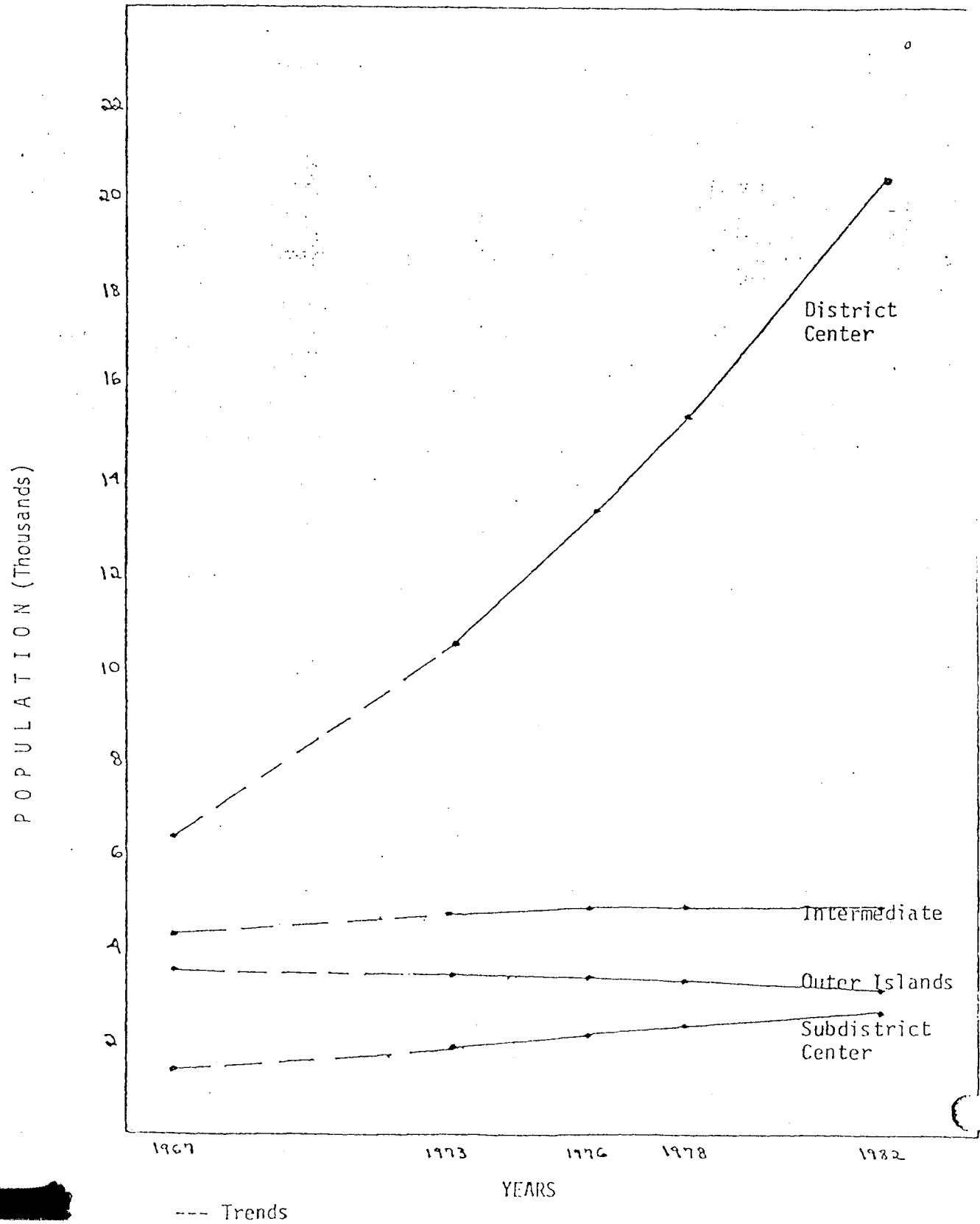
3. Distribution of Women:

Figure IV-3d shows growth trends and projections for women of prime children bearing age (15-44 years). Once again, the district centers are expected to experience the highest rate of growth. Both the sub-district centers and the intermediate areas are projected to grow at much lower rates. The outer islands can expect a negative growth rate. In terms of total numbers, the district centers will have the greatest number of women in their child-bearing year, with 66 percent of all women aged 15-44 expected to be living in the district center by 1982. The intermediate areas, outer islands, and sub-district centers will follow in total numbers. However, despite the negative growth expected in the outer islands, women of prime child-bearing age will actually constitute a slightly increasing proportion of that area's total population. Conversely, even though the intermediate areas should experience a positive rate of growth through 1982 for women aged 15-44, this population group is expected to constitute a slowly decreasing proportion of the sub-districts' total population.

4. Distribution of the Elderly:

Figure IV-3d

GEOGRAPHICAL DISTRIBUTION OF WOMEN IN PRIME CHILD-BEARING YEARS
(15-44 Years) 1967-1982 (T.T.P.I. Citizens)



5009124

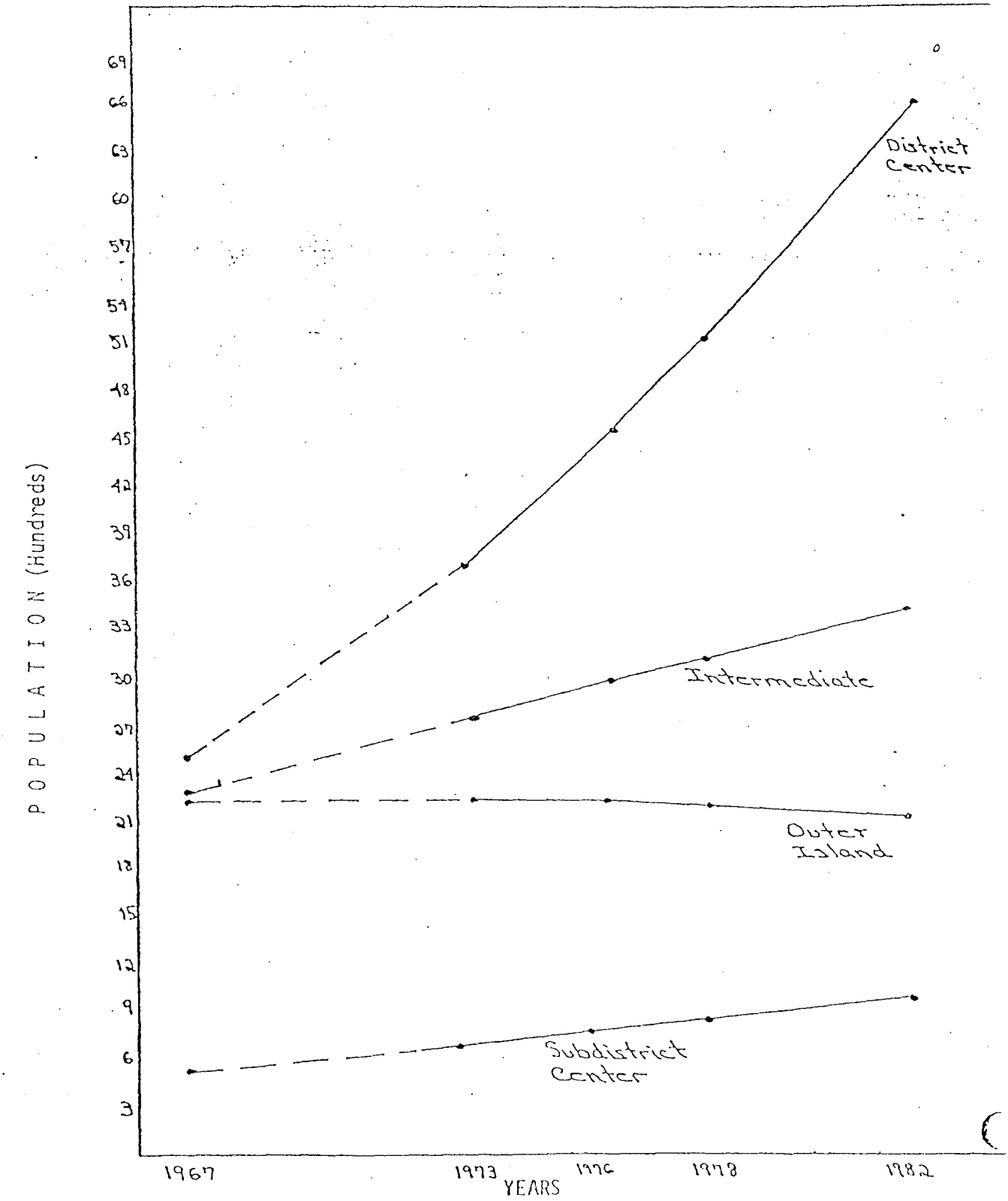
4. Distribution of the Elderly:

Figure IV-3e shows growth trends and projections for the elderly (55 years and older) in each of the four geographical sub-divisions of Micronesia. The district centers should continue to lead the TTPI in terms of both rates of growth and total numbers, with the intermediate areas second. The elderly population is expected to grow faster in the sub-district centers than in the outer islands, but in terms of total numbers the outer islands will continue to lead the sub-district centers. By 1982, one-half of all elderly persons are expected to be living in the district centers. However, they will constitute only 7.2 percent of the entire district center population, while in the outer islands they are expected to constitute 11.9 percent of the total population.

[redacted]

Figure IV-3e

GEOGRAPHICAL DISTRIBUTION OF THE ELDERLY
(55 years and older) 1967-1982 (T.T.P.I. Citizens)



[redacted]

5009126

Notes

1. In this instance, and in all subsequent use of Kay's graphic materials, it must be noted that Kay's figures do not always correspond exactly to to figures in this report (differing in most cases by statistically insignificant proportions). Kay's graphs are intended to suggest broad demographic features, and they accurately illustrate the population characteristics indicated by this data, which are presented with more precision in tabular form.

2. For the purposes of this report, the following definitions have been used to describe each geographical sub-division:

   "District Centers" and "Sub-district Centers" have been defined, whenever possible, to conform with the criteria used in the 1973 TTPI Census; i.e. "These centers have been designated according to a combination of lifestyle related criteria including the presence or absence of district and sub-district government administrative offices, hospitals and high schools, concentration of stores, salaried wage earners, public utilities (water and electricity), post offices, road and cars, airfields, harbors, etc." In terms of health care delivery, district and sub-district center populations are all within one or two hours traveling time by car or boat to hospital services.

   "Intermediate Areas" include all those municipalities, islands, and atolls which are more than two hours traveling time from hospital services, but within less than one day's travel by small boat.

   "Outer Islands" are all those islands and atolls located more than one day's travel from district and sub-district center. They are primarily accessible only by ship.

3. 1973 Trust Territory of the Pacific Islands (TTPI) Census, P.4

   In defining geographical sub-areas, we have not always followed exactly the criteria of the 1973 census. For example, the census defines Ponape's district center to include Kolonia Municipality and certain census enumeration districts in Nett and Sokehs Municipalities. However, we were unable to express our data in terms more specific than whole municipalities. At the same time, good road conditions have made the amenities of district center living readily available to the residents of Nett and Sokehs Municipalities. Consequently, we chose to include all of Nett and Sokehs in our district center totals. In other cases, we disagreed with the definitions used in the census. For example, we decided that because of the excellent condition of the roadway connecting Laura to Majuro (DUD), they both warranted inclusion as the Marshalls District Center. In the case of the Yap Islands complex, only Rumung is inaccessible by road to the hospital services of Colonia. Although Rumung is within two hours travel to Colonia

[redacted]

5009127

by boat, tide and weather conditions frequently increase travelling time by one or two hours, and therefore, we have designated Rumung an intermediate area. Similar considerations prompted us to designate Walung in Kosrae as an intermediate area.

4. Sub-district center hospitals are much more limited in services, equipment, and personnel than district center hospitals. The two geographic sub-areas are not exactly comparable.

5. These figures are reproduced from Kay, "Population Growth" P.20. See his discussion of them. P. 20-21.

6. Ibid

7. Changing future political status (See Section), may change population variables in ways which cannot now be predicted, especially the migration patterns.

[redacted] 5009128

CHAPTER FIVE

HEALTH STATUS IN THE TTPI

5009129

CHAPTER 5
HEALTH STATUS:

I. INTRODUCTION

A health delivery system acts in concert with many elements of an individual's and a community's environment to effect the goal of enhancing health and eradicating sickness. Limited resources are available to expend upon a health system in any nation, but areas such as the TTPI which are in the midst of political and financial transition, are particularly cognizant of the need to limit expenditures while maintaining maximal health within the population. In order to effectively balance cost with benefit, it is necessary for any plan to begin by assessing the state of health within a community and by assessing the major threats to health within that same community. It is this assessment which the Health Status Section of the Trust Territory Health Plan will attempt to perform.

"Health" is defined by the World Health Organization as ". . . a state of complete physical, mental and social well being and not merely the absence of disease or infirmity."

This is a comprehensive definition which represents the ultimate goal of the health system as it interacts with the individual's and community's environment to promote well being. The definition

avoids defining health solely in terms of physical health and the absence of disease. This definition emphasizes the mix of personal and governmental choices required to create and maintain a system which is health and not illness oriented, i.e. a system which emphasizes prevention of disease. It further serves to remind that health (or the lack of health) is a product beyond the hospital or dispensary and thereby beyond the health system currently operating in the United States (the system upon which that of the Trust Territory is modeled).

Unfortunately, data by which to assess health in the comprehensive and position fashion espoused by the WHO is not currently available in the TTPI. The development of this plan must re ly upon negative indicators (i.e. rates of disease present within the population) of physicial health (i.e. physical health alone, as opposed to the more comprehensive mental and social health described above). The only social indicators currently available ennumerate the incidence of suicide and violent crime and describe economic conditions. The only positive indicators show immunization levels and crude birth rates. As health planning in the TTPI matures, it will expand its data base to include more comprehensive and positive oriented data.

[redacted]

Seven sets of data are used to analyze health status:

- Crude birth rates (number of births per year for the total population)
- Mortality rates (number of deaths per year for the total population)
- Morbidity rates (number of persons exhibiting disease conditions per year)
- Communicable/Reportable Disease Incidences
- Utilization Figures for the Hospital OPD's and for the Dispensaries
- Hospital Discharge Data
- Immunization Statistics

It must be kept in mind, however, the data which will be presented is not fully reliable. A modern data management system* requires a far larger population base and a far more advanced technology than is present in the Trust Territory. In addition, logistics and limited personnel training make the collection of accurate statistics difficult. Further, it should not be assumed, reporting errors are randomly distributed. Data from the district centers would appear to be the most complete and the most reliable, with data from the outer islands being the least. Quality of outer island reporting depends, among other things, upon the skill levels & motivation of the health service personnel stationed on the various islands; and consequently varies from island to island. The data presented provide the best estimate available of the incidence of the various illnesses but the reader must keep in mind, the figures are only estimates.

* The TTPI Bureau of Health Services is in the process of converting to a more comprehensive computerized data system. Programming for the system and the initial printout will become available in early 1979.

5009132

The Trust Territory health care delivery system is vastly different from the United States model. Within the Trust Territory, there are no private practitioners. All health care is provided by the government.

Health needs in the Trust Territory are different in that with the small population and smaller incomes (when compared to the United States), the health status is generally lower than in the United States. It is more appropriate to look at the health status in the Trust Territory in comparison with other nations and municipalities in the Pacific area. To this end, data on mortality and morbidity of neighboring countries are included for comparison along with data from the United States.

The prioritization of Goals and Recommendations for Health Status were developed based on the best assessment of severity of the problem and the best estimate of resources available in the Trust Territory.

In many areas, no standards have been articulated since data is sparce, lacking, or in need of development. Many of the problems associated with insufficient data sources will be eliminated upon implementation of the new computer-based data system slated for Spring, 1979.

[redacted]

II. INFANT BIRTH AND MORTALITY

Table V-1 presents crude birth, death and infant mortality rates of the Trust Territory of the Pacific Islands for the years 1965-1976. The average crude birth rate for the period 1972-77 was 33.6 births per 1,000 population. This birth rate is high when compared to the United States birth rate of 14.8. However, when compared to Pacific area countries of American Samoa, 38.1; and Guam 29.3; the Trust Territory of the Pacific Islands' birth rate is acceptable.

The birth rate in Table V-1, also indicates some decline in the birth rate. As the TTPI population becomes more dependent upon a cash economy, the downward trend in births will probably continue.

Table V-2 presents births by location for 1976. It is significant to note that 33% of all births occur outside the district hospitals. Of that total, 27.1% of the births occur at home.

Table V-3 presents births by age and location of mother.

Table V-1 Population, Births, Infant Deaths, Deaths, and Natural Increase
Trust Territory of the Pacific Islands, 1955 - 1976

Year	Population	Total Births	Birth Rate	Infant Death	Infant Death Rate	Total Death	Death Rate	Natural Increase	Rate of Natural Increase
1955	64,290	1,989	30.9	68	34.2	364	5.7	1,625	25.3
1956	65,039	1,992	30.6	65	32.6	362	5.6	1,630	25.1
1957	67,199	2,210	32.9	85	38.5	393	5.8	1,817	27.0
1958	70,594	2,298	32.6	85	37.0	350	5.0	1,948	27.6
1959	73,052	2,466	33.8	99	40.1	393	5.4	2,073	28.4
1960	75,836	2,649	34.9	85	32.1	451	5.9	2,198	29.0
1961	77,913	2,895	37.2	93	32.1	412	5.3	2,483	31.9
1962	80,980	2,694	33.3	89	33.0	386	4.8	2,308	28.5
1963	84,777	2,756	32.5	105	38.1	425	5.0	2,331	27.5
1964	88,215	3,024	34.3	99	32.7	529	6.0	2,495	28.3
1965	90,596	3,032	33.5	132	43.5	530	5.9	2,502	27.6
1966	92,373	3,359	36.4	111	33.0	493	5.3	2,866	31.0
1967	93,580	3,301	35.3	108	32.7	496	5.3	2,805	30.0
1968	94,469	3,440	36.4	112	32.6	545	5.8	2,895	30.6
1969	98,009	3,321	33.9	116	34.9	533	5.4	2,788	28.4
1970	102,250	3,733	36.5	78	20.9	599	5.9	3,134	30.7
1971	107,054	3,684	34.4	131	35.6	579	5.4	3,107	29.0
1972	114,645	3,959	34.5	120	30.3	600	5.2	3,359	29.3
1973	114,773	4,001	34.9	129	32.2	537	4.7	3,464	30.2
1974	118,903	4,004	33.7	124	31.0	608	5.1	3,396	28.6
1975	123,184	4,222	34.3	135	33.2	613	5.0	3,609	29.3
1976	127,624	3,973	31.1	71	17.9	540	4.2	3,433	26.9

Note: All rates are per 1,000 population, except the Infant Death Rate which is computed per 1,000 live births.

Source: Population from annual reports, Trust Territory of the Pacific Islands. The 1958, 1967 and 1973 populations were enuerated in a Territory-wide census. The 1974 and 1975 populations are projected based on 1973 census population. Population in this table is permanent resident population from appendix I, B. page 162. Births and deaths are from certificates registered for events in each year. Figures for 1970 - 1974 have increased from previous reports by the inclusion of events which were registered late (delayed registeration).

5009135

TABLE V-2, Comparison of TTPI Infant Mortality Rate with selected South Pacific Islands.

C205 PH 502 Medical Geography

DEMOGRAPHIC STATISTICS FOR SOME PACIFIC ISLAND STATES

State	Mid-Year Population circa 1975	Infant Death Rate Per 1000 Population	Death Rate Per 1000 Population	Percentage of Total Deaths Under 5 Yrs.	Population Per Hospital Bed	Population Per Physician
American Samoa	30,000	4	33	28	170	1,154
Cook Islands	22,000	–	34	38	116	6,667
Fiji	600,000	5	21	20	350	2,070
French Polynesia	120,000	–	–	35	132	2,097
Guam	85,000	4	15	14	372	2,432
Hawaii	870,000	5	14	5	224	640
Nauru	6,500	–	32	33	34	700
New Caledonia	101,000	10	–	23	85	1,325
Niue	5,000	6	29	21	167	1,000
Papua-New Guinea	2,500,000	17	159	–	–	10,644
Tonga	80,000	3	–	21	354	3,000
Wallis & Futuna	9,000	11	41	32	83	3,330
Western Samoa	150,000	4	41	29	226	3,330
TTPI	115,000	4.2	28.8			

Source: United Nations, 1970-1976 Data.

[redacted] 5009136

TABLE V-3

LIVE BIRTHS BY AGE OF MOTHER

NUMBER OF REGISTERED LIVE BIRTHS BY AGE OF MOTHER,

TRUST TERRITORY DISTRICTS (TTPI) AND THE NORTHERN MARIANAS, 1976

AGE GROUP	DISTRICTS						TOTAL	% OF TOTAL
	KOSRAE	MARSHALLS	PALAU	PONAPE	TRUK	YAP		
Under 15	0	1	1	0	1	0	3	0.09
15-19	7	208	49	136	85	45	530	15.58
20-24	30	403	168	300	224	88	1,213	35.56
25-29	23	281	92	198	205	71	870	25.57
30-34	9	120	40	108	130	30	437	12.85
35-39	10	58	20	71	67	19	245	7.2
40-44	7	20	4	29	24	10	94	2.76
45-49	0	1	1	2	5	1	10	0.29
50 & Over	0	0	0	0	0	0	0	0
Age Unknown	0	0	0	0	0	0	0	0
TOTAL	86	1,092	375	844	741	264	3,402	100.00

[redacted] 5009137

INFANT MORTALITY

The six year average infant mortality rate for the years 1972-77 was 30.1 deaths per 1,000 live births. In other words, for every 1,000 births, about 30 will die within the first year of life. This infant death rate is moderate by comparison to other countries with similar characteristics and resources. Table V-4 presents a comparison of Pacific Islands countries' infant mortality rates.

Infant death rates in the Pacific Islands range from a high of 159 for Papua-New Guinea to a low of 14 for Hawaii.

The 28.9 infant mortality rate is much higher than the 1975 U.S. rate of 16.1. However, the evidence of rapid decrease provides encouragement for achieving target levels.

[redacted] 5009138

TRUST TERRITORY OF THE PACIFIC ISLANDS

TABLE V-4 SELECTED NOTIFIABLE DISEASES BY NUMBER OF CASES
1970 - 1976 and 7 Year Total

nk	Kinds of Diseases	Number of cases for 7 years	1976	1975	1974	1973	1972	1971	1970
	Dysentary, Amoebic	18,076	3,172	2,792	2,768	3,513	2,147	2,323	1,361
	Gonorrhea	4,150	413	532	629	756	733	661	426
	Fish Poisoning	1,898	340	221	281	263	288	310	195
	Infectious Hepatitis	1,143	39	69	239	568	183	21	24
	Measles	745	1	-	5	25	8	698	8
	Tuberculosis, Pulmonary	600	37	73	109	112	94	175	94
	German Measles	497	13	5	39	17	408	15	-
	Leprosy	104	27	14	14	23	11	12	3
	Tuberculosis, other forms	107	15	9	13	12	13	19	26
	Meningitis, other forms	88	35	11	11	10	6	6	6
	Meningitis, Meningococal	12	1	1	2	4	2	2	-
	Tuberculosis, all forms	801	52	82	122	124	107	194	120
	Influenza	117,768	17,439	16,539	13,661	8,076	25,659	24,189	12,205

OURCE: RB, Morbidity Tables
Monthly Dispatches

5009139

OBJECTIVE 1.1 BY 1983, THE TRUST TERRITORY INFANT MORTALITY SHOULD NOT EXCEED AN AVERAGE OF 16 INFANT DEATHS PER 1,000 LIVE BIRTHS FOR ANY CONSECUTIVE THREE YEAR PERIOD AND NOT EXCEED 20 DEATHS PER 1,000 LIVE BIRTHS FOR ANY INDIVIDUAL YEAR.

Table V-5 presents the leading cause of infant deaths for the year 1964-1975.

Prematurity is clearly the primary cause of infant deaths. For the period 1972-1976, prematurity accounted for 27% of all infant deaths.

The TTPI infant mortality rate due to prematurity is 8.6 per 1,000 live births. (1974-1976). The United States rate for prematurity as a cause of death is 1.4 per 1,000.

OBJECTIVE 1.2 BY 1982, THE INFANT MORTALITY RATE FOR PREMATURITY WILL BE NO GREATER THAN 5 DEATHS PER 1,000 LIVE BIRTHS.

TABLE V.

Leading Causes of Infants Deaths by Year
Trust Territory of the Pacific Islands, 1964 - 1973
(Listed in rank order of 1973)

CAUSE	YEAR											
	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
Prematurity	54	43	33(1)	30(1)	29(1)	31(1)	28(1)	32(1)	19(3)	20(2)	27(1)	13(4)
[illegible]th injury anoxic and [illegible] hypoxic condition	-	-	23(2)	17(3)	21(2)	14(3)	14(4)	12(2)	7	10(4)	15(3)	16(2)
[illegible]arrheal & intestinal diseases	21	15	19(3)	11(4)	19(3)	8(4)	18(3)	11(3)	21(1)	8(5)	23(2)	14(3)
Influenza 7 pneumonia	10	9	14(4)	20(2)	21(2)	16(2)	19(2)	9(4)	20(2)	22(1)	23(2)	19(1)
Congenital malformation	6	3	11(5)	9(5)	6(4)	3(6)	7(5)	-	-	12(3)	-	-
Meningitis, all forms	1	4	5(6)	2(7)	-	-	-	-	-	-	-	-
Malnutrition	2	-	2(7)	3(6)	-	-	-	-	-	-	-	-
Accident, all types	-	-	1(8)	2(7)	4(5)	5(5)	2(6)	-	-	-	-	-
All other causes specified	16	21	13	14	16	8	5	8	5	8	4	7
Causes ill-defined 7 unknown	(11)	(10)	7	18	29	33	30	45	20	30	40	30
Total all causes	121	105	128	126	145	118	123	117	92	110	132	99

Note: Number in parentheses are ranking order of causes of death for each year.
Figures for 1967 - 1972 have increased from previous reports by the inclusion of events which were registered late (delayed registration).

Source: Trust Territory of the Pacific Islands to the United Nations, 1965 - 1975.

5009141

Crude Death Rate

The average crude death rate for the three year period of 1975-1977 was 4.86 deaths per 1,000 population. Table V-6 indicates that the death rate seems to be gradually decreasing from an annual high of 7.4 per 1,000 in 1964 to the lowest rate ever of 4.3 in 1976. The 1977 rate rose to 5.2. Indications are that the increase in the crude death rate can be attributed to a shigellosis epidemic which also accounts for a dramatic increase in mortality of diarrheal diseases.

In comparison, the United States crude death rate was 8.9 in 1975, 5.0 for Hawaii, and 4.8 for American Samoa in 1976. Since the crude death rate seems to be on the decline, no goal has been set for the further reduction of mortality.

Table V-6 and Figure V-1 list the ten leading causes of death in rank order in the Trust Territory for the years 1975-1977. Included in Table V-6 is the death rate by cause.

Figures V-2a--j graphically illustrates the incidence of the ten leading causes of mortality in the Trust Territory for the period from 1971-1976.

MALIGNANT NEOPLASMS

Cancer is the leading cause of death in the Trust Territory for the period 1975-1977. Approximately 8.8% of all deaths were attributable to cancer

[redacted]

500143

TABLE V-6
TEN LEADING CAUSES OF
DEATH REPORTED IN THE TRUST TERRITORY OF THE PACIFIC ISLANDS IN.
CALENDAR YEAR 1975, 1976 and 1977 LISTED IN RANK ORDER OF 1976)

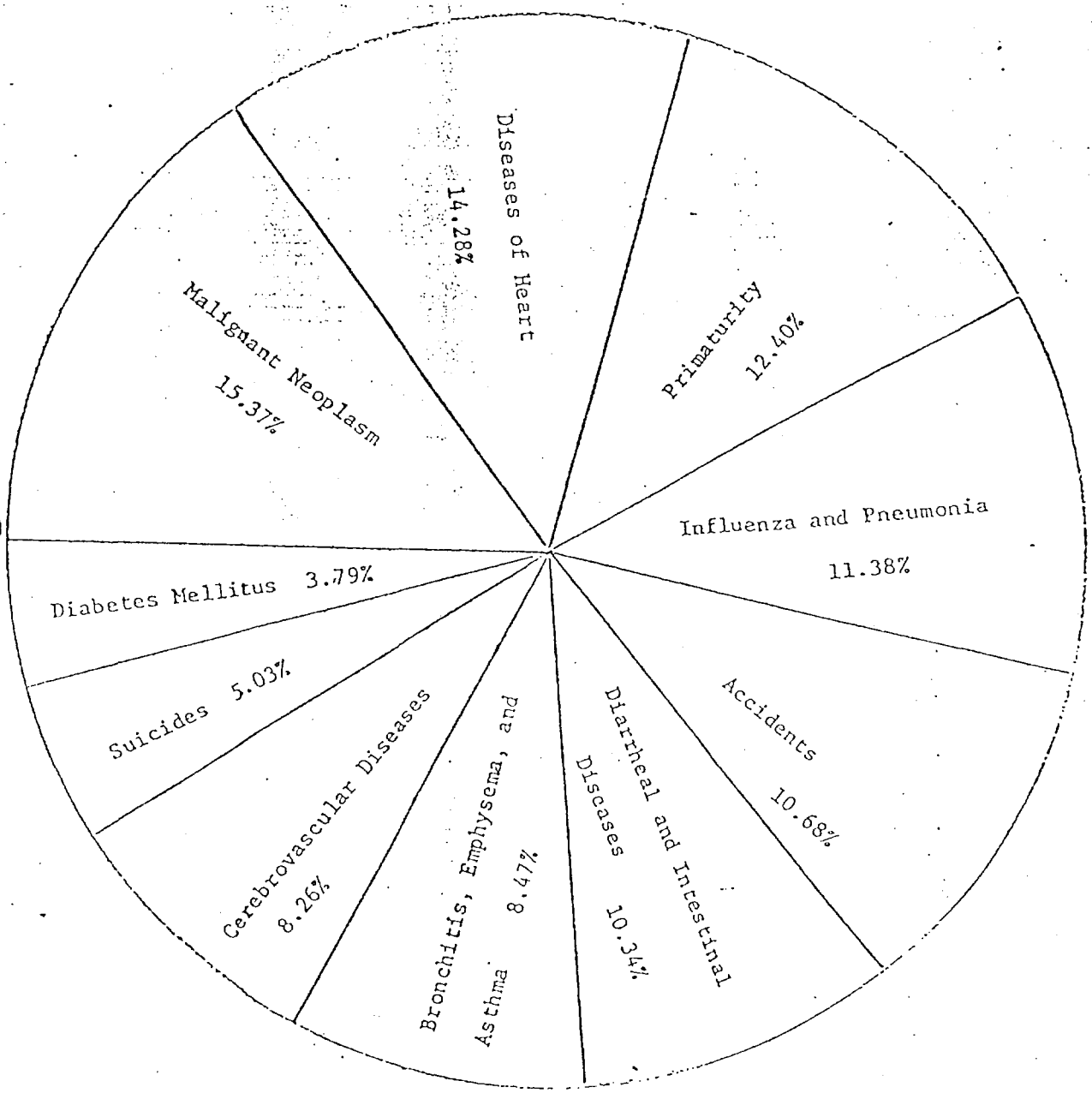
CAUSE OF DEATH	1977	1976	1975**	Average No. of Dates 1975-1977	TTPI Rate/[1] 100,000	*U.S. Rate/[2] 100,000	American Samoa Rate/[3] 100,000	Guam Rate/[4] 100,000
gnant Neoplasms (140-209)	48	37	2	42.3	38.4	170.5	43	50
Diarrheal & Intestinal Diseases (004,006,008,009)	70	19	33	40.6	36.8	UNK	UNK	UNK
Heart Disease (390-398,402,410-429)	41	29	38	36	32.7	339.0	400	150
Prematurity* (777)	29	14	52	31.7	8.6	1.4	6.5	14.9
Influenza & Pneumonia (470,480-486)	38	31	29	32.7	29.7	27.0	UNK	28
Accidents, All Types (E800-E949)	30	36	18	28	25.4	47.6	49.7	81
Bronchitis, Emphasyema Asthma (490, 493)	26	29	32	29	26.3	11.9	21.4	UNK
Cerebrovascular Disease (430,938)	10	21	20	17	15.4	91.8	51	35
Suicides (E950,E959)	16	10	19	15	13.6	12.6	9	UNK
Diabetes Mellitus (250)	7	8	8	7.7	7.0	16.8	34.4	16.5

1. Average Rate for 1975-77, TTPI
2. Average Rate for 1975, U.S. (Provisional)
3. Average Rate for 1974-76-American Samoa (Source: AS-HSP)
4. Average Rate for 1971-1976, Guam (Source: Guam-HSP)

Per 1,000 live births

TEN (10) LEADING CAUSES OF DEATH
TRUST TERRITORY OF THE PACIFIC ISLANDS
1974 - 1976

Figure V-1



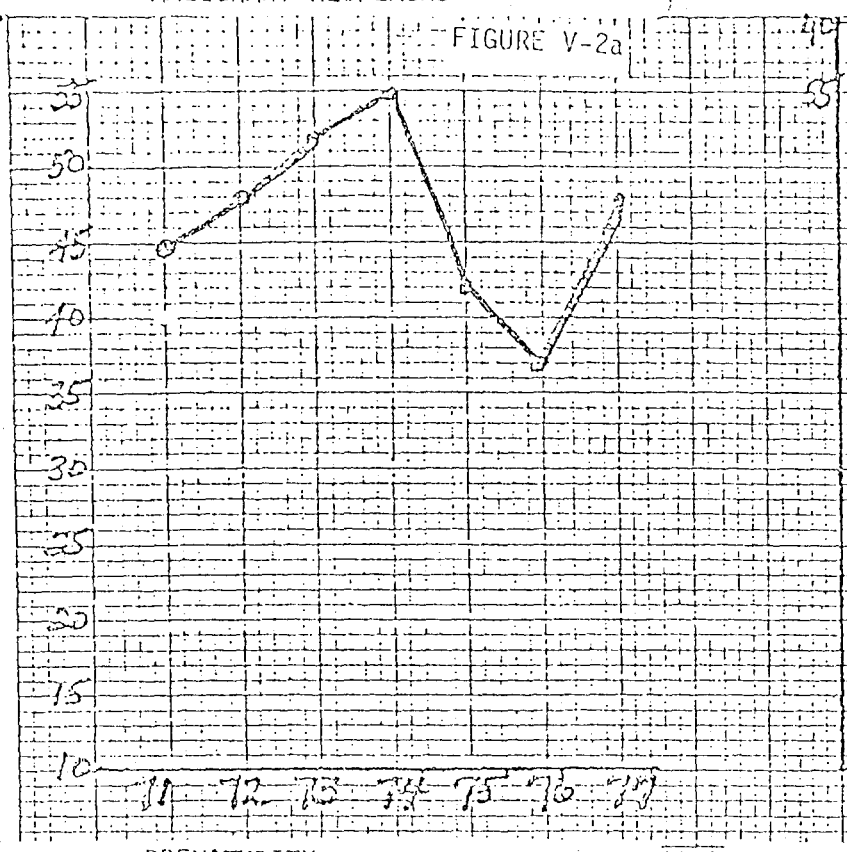
Percentage figures indicate % of 10 leading causes of all deaths.

[redacted]

5009144

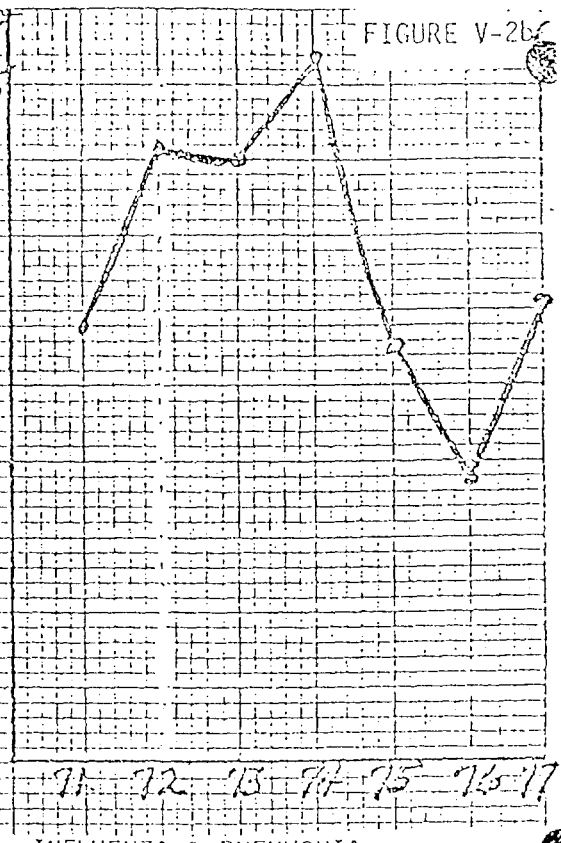
MALIGNANT NEOPLASMS

FIGURE V-2a



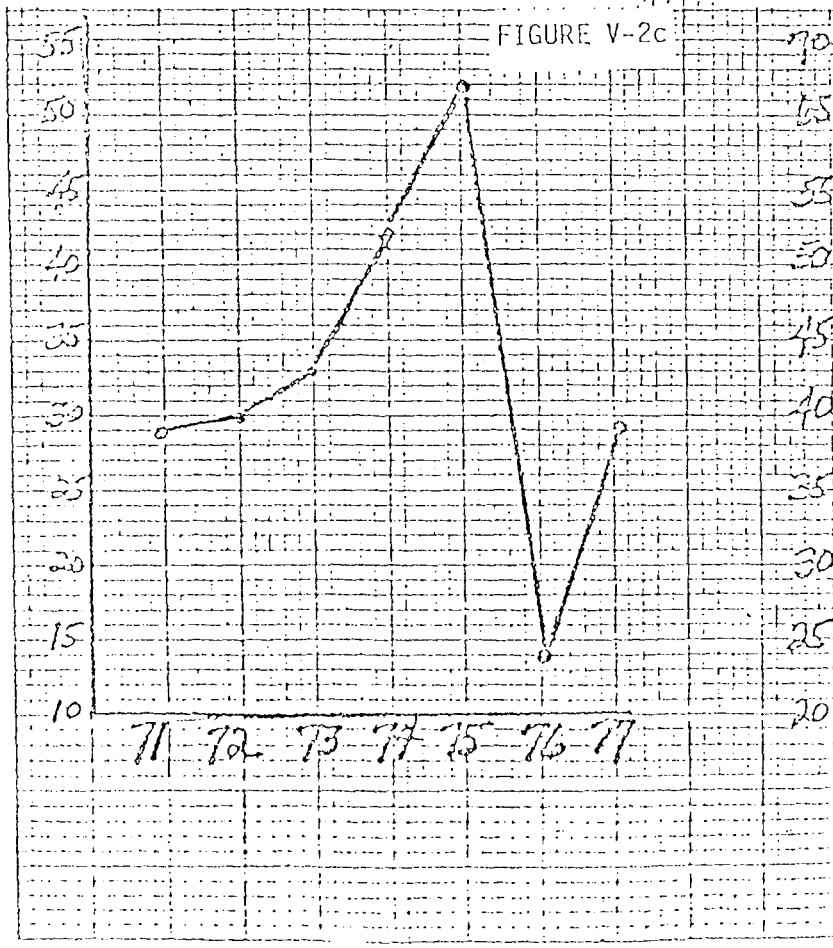
DISEASE OF THE HEART

FIGURE V-2b



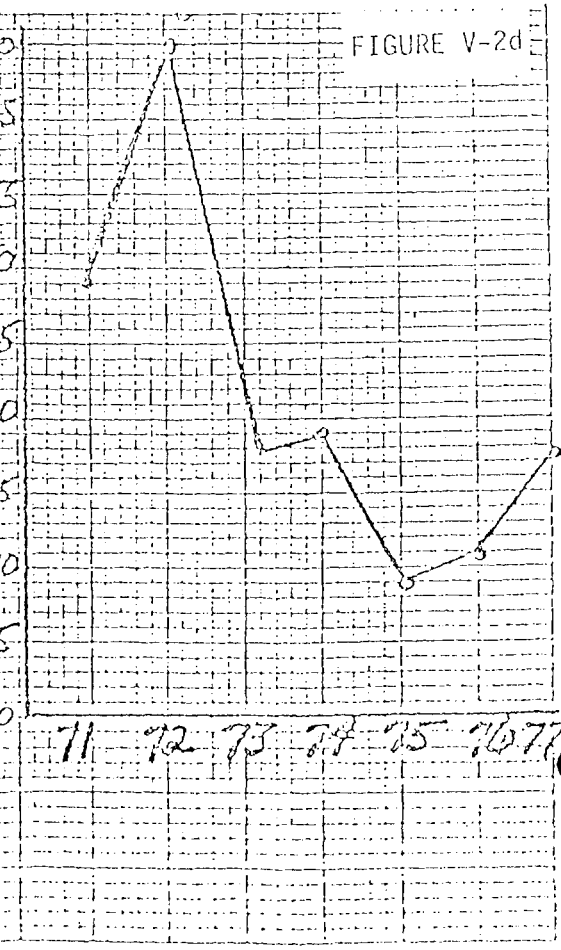
PREMATURITY

FIGURE V-2c



INFLUENZA & PNEUMONIA

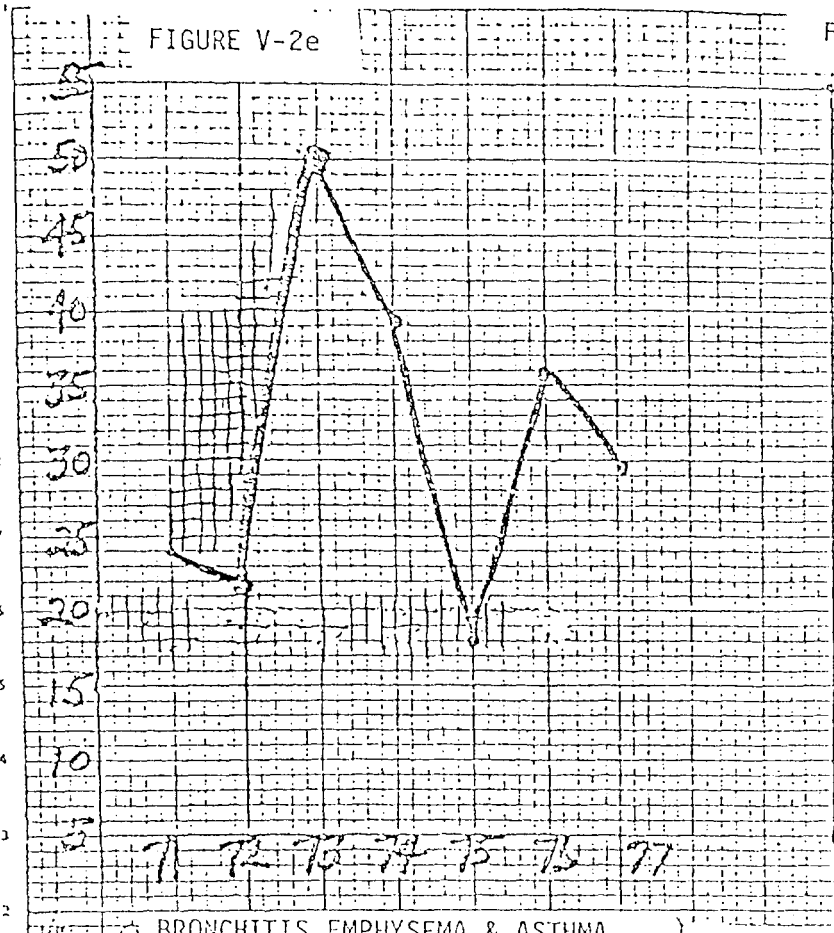
FIGURE V-2d



[redacted]

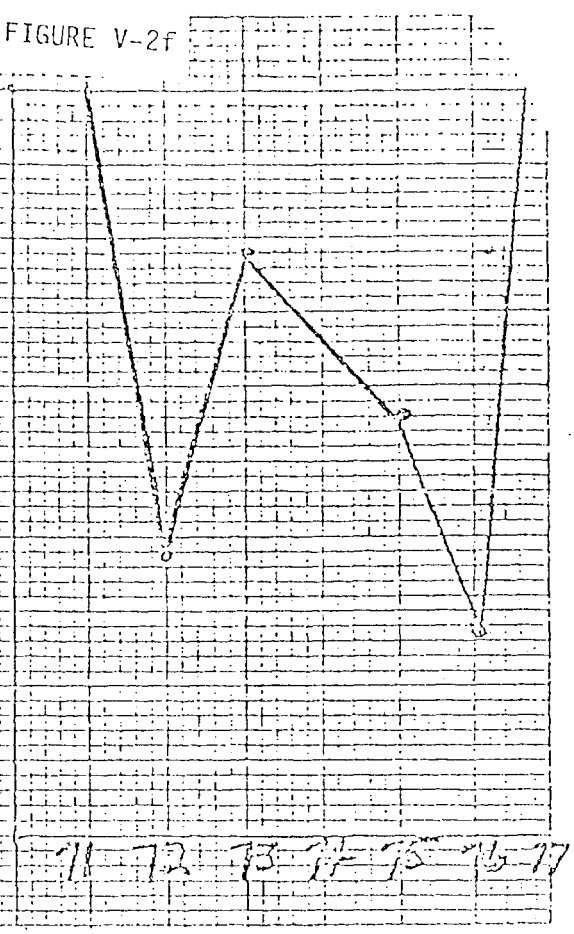
ACCIDENT

FIGURE V-2e



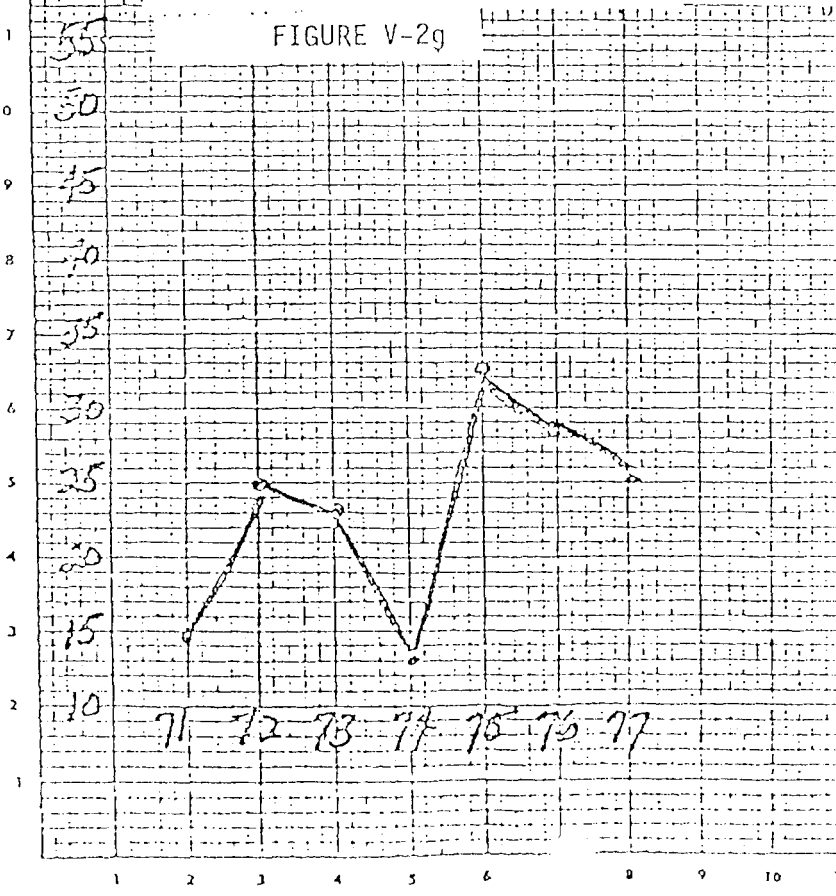
DIARRHEAL AND INTESTINAL

FIGURE V-2f



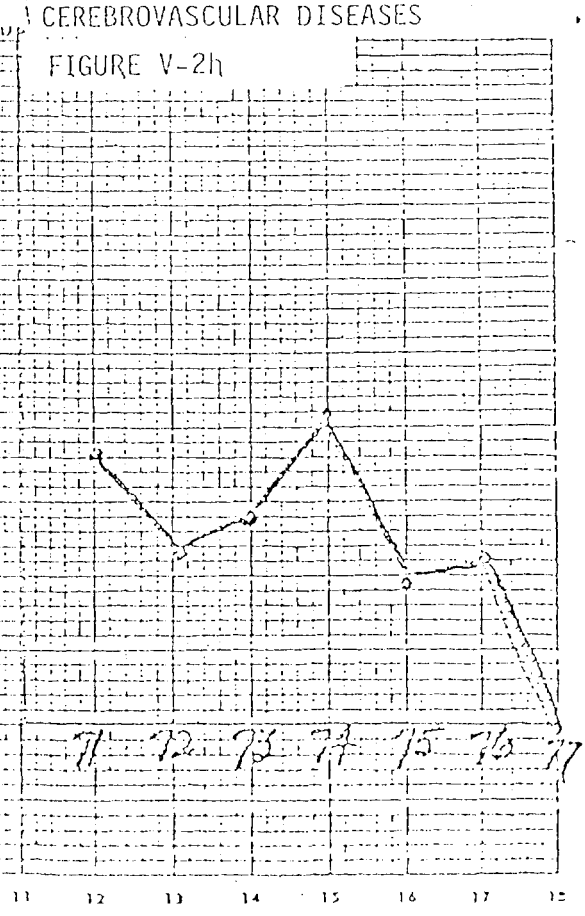
BRONCHITIS EMPHYSEMA & ASTHMA

FIGURE V-2g



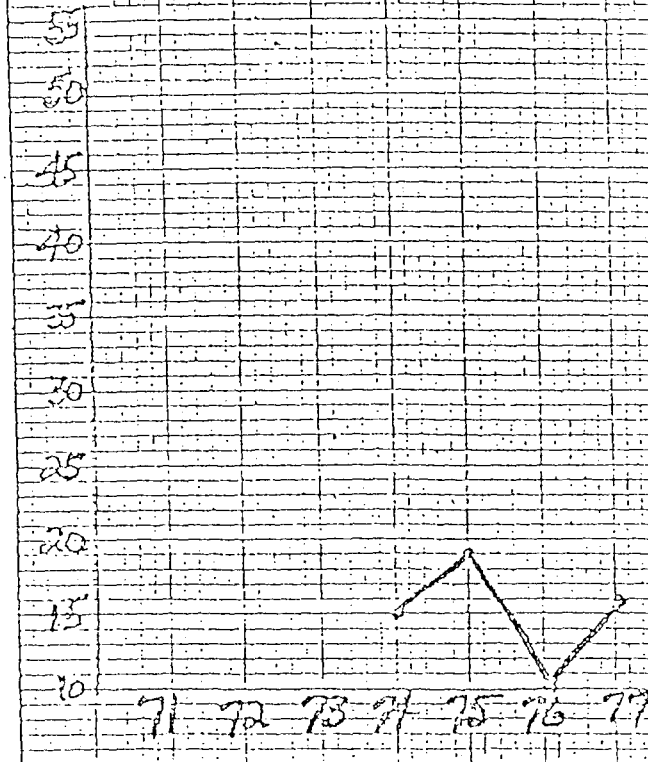
CEREBROVASCULAR DISEASES

FIGURE V-2h



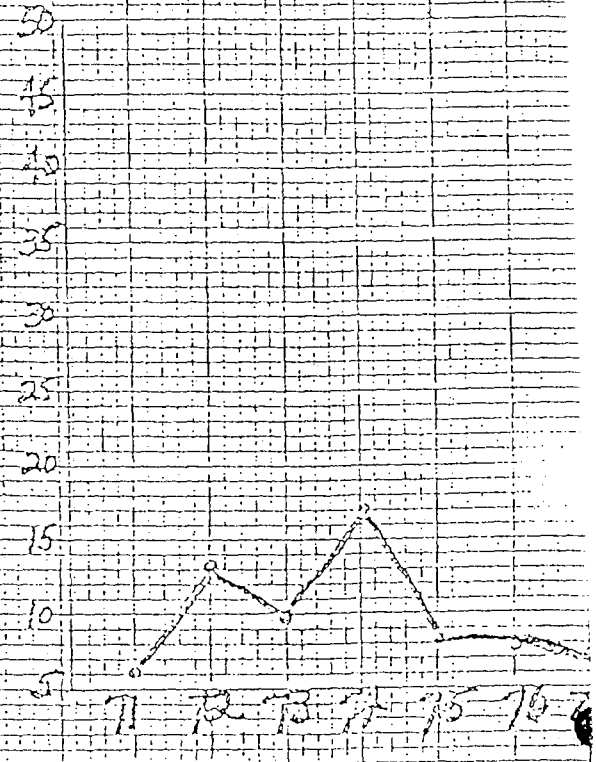
SUICIDES

FIGURE V-2i



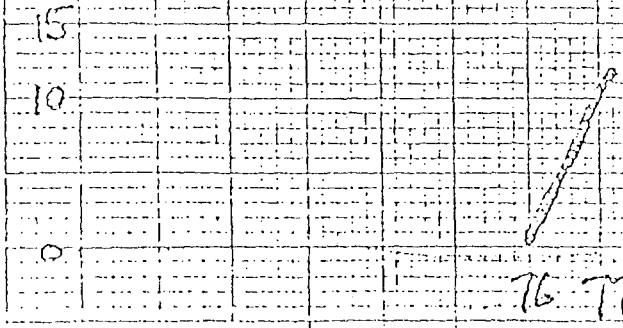
DIABETES MELLITUS

FIGURE V-2j



NUTRITIONAL DEFICIENCIES

FIGURE V-2k



5009147

during the above stated period for an average of 42.3 cancer deaths per year.

The cancer mortality rate per 100,000 population for the period was 38.4. In comparison, the United States cancer mortality rate for 1975 was 170.5 per 100,000 population. The average age of death from cancer was 59.6 years.

In comparison with cancer rates in the United States, American Samoa and Guam, a Trust Territory of the Pacific Islands' citizen has a lower risk of dying of cancer. For example, a TTPI citizen has a 79% less likely chance of dying of cancer than a United States citizen, and 18% less likely chance of death by cancer than a Guamanian. (See Table V-6).

OBJECTIVE: MAINTAIN CANCER MORTALITY RATES AT 36/100,000 POPULATION.

HEART DISEASES

Diseases of the heart is the third leading cause of death in the TTPI. The number of deaths attributed to heart disease for the period of 1975-1976 averaged 36 deaths per year. (Table V-6). Yearly incidence of death by heart disease seems to be declining, however, the disease is still a major concern of Micronesia since this disease is usually most prevalent in industrialized nations. Micronesia is a developing country and must remain vigilant of health trends of advanced nations. The mortality rate of heart disease for persons

over age 35 was 185/100,000 population.

In comparison to American Samoa, which has a heart disease mortality rate of 400/100,000 population for the same age group, TTPI citizens have 54% less likely chance of death by heart disease.

INFLUENZA AND PNEUMONIA

The fourth leading cause of death in the TTPI is influenza and pneumonia. The TTPI influenza and pneumonia mortality rate per 100,000 population of 29.7 is high in comparison with the United States rate of 27.0 and Guams rate of 28. About 26% of all deaths with influenza and pneumonia as cause are infants.

OBJECTIVE — BY 1983, THE AGE SPECIFIC MORTALITY RATE FOR HEART DISEASES FOR PERSONS OVER AGE 35 WILL NOT EXCEED 175-100,000 POPULATION

OBJECTIVE — BY 1983, INFLUENZA AND PNEUMONIA MORTALITY RATES WILL NOT EXCEED 20 DEATHS/100,000 POPULATION.

[redacted]

Within the TTPI, influenza and pneumonia accounted for 12.3% of all hospital discharges. During the years 1975-1977, 49,888 cases of influenza was reported in the TTPI.

CEREBROVASCULAR DISEASE

Cerebrovascular disease is a chronic ailment which was the eighth leading cause of death for the period of 1975-1977. Sometimes referred to as stroke, this disease afflicts primarily the elderly. The mortality rate for cerebrovascular disease for the period of 1975-1977 was 15.4 deaths per 100,000 population. This rate is lower than either the U.S. rate, 91.8 deaths per 100,000 population or the Guam and American Samoa rates of 35 and 51 per 100,000.

OBJECTIVE: BY 1982, DECREASE THE CEREBROVASCULAR MORTALITY RATE BY 15%.

IV. INFECTIOUS & NOTIFIABLE DISEASES

The control of several acute preventable diseases is a priority activity in most countries throughout the world. These diseases which are infectious and passed or transmitted by either man, air or water, are characterized by sudden onset.

When diagnosed, these diseases must be reported by the physician or provider of medical care to the TTPI Bureau of Health Services - Headquarters.

[redacted]

The prevention of diseases is of primary concern and priority in the Trust Territory. With the relative density and smallness of population an outbreak of a disease could be catastrophic. Therefore, it is of extreme importance that the district departments of Health Services maintain increased vigilance and reporting capabilities.

Table V-7 presents morbidity data on the reported number of cases of notifiable diseases and the average incidence rate per 100,000 population for the period of 1975-1977.

Influenza, amebiasis and gastroenteritis are the notifiable diseases with the highest incidence rate in the Trust Territory.

The mortality rate for communicable diseases during the period of 1972-1977 was 27.67 per 100,000 population.

Table V-8 presents a comparison of communicable disease incidence rates for Pacific Islands countries. With the exception of amoebiasis, the Trust Territory communicable disease incidence rates are comparable to other Pacific Islands.

OBJECTIVE — BY 1983, DEATHS FROM COMMUNICABLE DISEASES WHICH ARE PREVENTABLE WILL BE LESS THAN 12 PER 100,000 POPULATION.

[redacted]

GASTROINTESTINAL DISEASES

Amoebiasis/Dysentary/Gastroenteritis

The Trust Territory reports a high incidence rate for amoebiasis, 3,595 per 100,000 population. Over 4,000 cases of amoebiasis are reported annually. The procedure for diagnosing the disease is based on laboratory examination of unstrained stool specimens. However, recent studies by the Communicable Disease Control Branch of the United States Public Health Service and other Pacific Islands countries have indicated that most of the reported amoebiasis is probably incorrectly diagnosed and the proper diagnosis would probably be dysentary. Gastroenteritis and dysentary are the principle diseases responsible for the high communicable disease mortality rate.

Table V-5 presents the number of deaths by year from gastrointestinal diseases. Of the 265 deaths, 192 or 75% were children less than one year of age. The mortality rate due to gastroenteritis and dysentary for the period 1972-1977 was 29.26 deaths per 100,000 population. Children less than 1 year of age account for 19% of all cases hospitalized for gastroenteritis diseases.

OBJECTIVE — BY 1983, THE MORTALITY RATE FOR GASTROINTESTINAL DISEASES WILL BE NO MORE THAN 18 PER 100,000 POPULATION.

OBJECTIVE — BY 1982, THE INCIDENCE OF GASTROINTESTINAL DISEASE WILL BE REDUCED BY 12%.

[redacted]

5009152

Table V-8

COMMUNICABLE DISEASES IN PACIFIC ISLAND POPULATIONS, 1974-76

Average Annual Incidence Rates Per 100,000 Population

POPULATION	CHILDHOOD AND OTHER IMMUNIZABLE DISEASES					FOOD AND WATER BORNE DISEASES				RESPIRATORY DISEASES		VENEREAL DISEASES		MISCELLANEOUS DISEASES						
DISEASES	MEASLES	PERTUSSIS	TETANUS	DIPTHERIA	POLIOMYELITIS	DYSENTERY AMOEBIC	DYSENTERY BACILLARY	INFECTIOUS HEPATITIS	TYPHOID FEVER	INFLUENZA-LIKE	TUBERCULOSIS PULMONARY	GONORRHEA	SYPHILIS	DENGUE FEVER	ENCEPHALITIS	MENINGITIS MENINGOCOCCAL	BRUCELLOSIS OTHER FORMS	LEPROSY	RHEUMATIC FEVER	TYPHUS
GILBERT & ELLICE ISLANDS	5,300	200	-	-	-	30	2,171	99	-	20,335	78	17	-	4,729	?	?	45	5	12	-
GUAM	15	133	1	-	-	3	14	187	1	1,460	24	205	2	-	-	1	17	1	13	-
NAURU	130	-	-	-	-	-	-	136	-	8,143	86	72	-	8,879	-	-	1	-	-	-
T.T.P.I.	10	85	1	-	-	1,987	1,107	257	-	10,668	51	538	2	12	1	3	10	10	9	-
MICRONESIA SUBTOTAL	1,083	92	1	-	-	836	895	195	-	9,107	64	344	2	1,093	1	2	19	6	11	-
SOLOMON ISLANDS	90	-	19	-	-	-	8	60	1	134	69	6	-	-	-	12	14	19	-	1
FIJI	172	4	133	-	-	1	13	26	-	6,961	34	121	5	4,315	1	-	11	9	9	-
NEW CALEDONIA	452	35	6	-	3	10	8	24	4	3,414	139	179	203	3	-	3	-	13	-	-
NEW HEBRIDES	497	268	1	-	1	-	454	63	-	2,597	94	145	-	379	2	37	1	6	1	49
NORFOLK ISLAND	-	56	-	-	-	-	444	-	-	417	56	-	28	-	-	-	-	-	-	-
PAPUA NEW GUINEA	205	30	4	1	1	11	123	20	1	1,070	8	224	49	1	2	13	11	-	-	24
MELANESIA SUBTOTAL	210	31	3	-	1	9	104	24	1	1,933	15	134	44	671	?	13	10	3	1	19
COOK ISLANDS	1,301	-	-	-	-	-	435	241	-	13,441	32	865	-	-	11	11	33	14	32	-
FRENCH POLYNESIA	52	112	3	-	2	4	121	239	6	3,393	107	193	40	262	2	3	73	7	126	-
NIUE	21	1	-	-	-	-	167	121	-	13,538	17	90	-	270	-	-	22	-	-	-
PITCAIRN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAMOA WESTERN	314	65	206	0	0	-	28	72	1	6,794	24	155	-	367	-	12	6	3	11	-
SAMOA AMERICAN	713	-	1	-	-	-	-	81	2	37,850	71	102	-	274	2	5	8	34	7	-
TOKELAU ISLANDS	83	-	-	-	-	-	104	1,377	21	62,055	21	-	-	3,739	-	83	-	-	200	-
TONGA	20	-	9	-	-	8	219	16	66	9,913	40	16	-	2,982	-	2	11	-	7	6
WALLIS & FUTUNA ISLANDS	141	6,315	-	-	-	-	-	50	-	4,480	176	31	-	-	-	-	-	6	-	-
POLYNESIA SUBTOTAL	242	67	4	-	1	3	112	121	17	9,105	60	187	11	897	2	6	28	3	45	1
TOTAL	270	39	3	1	1	64	178	45	2	3,177	23	174	38	719	2	11	12	3	6	16

5009153

VENERAL DISEASE

The annual incidence of gonorrhea in the TTPI was 459 cases per 100,000 population during the period 1974-1977.

The United States incidence rate of gonorrhea in 1974 (mid-period of the last five years) was 420 cases per 100,000 population.

A schematic comparison of gonorrhea incidence rates for the TTPI and United States is given in Figure V-2.

An increase of gonorrhea is anticipated as the population grows "younger" and employment opportunities become more scarce. Another problem which may increase susceptability to the disease is the recent discovery of penicillin resistent strain of gonorrhea in the TTPI.

OBJECTIVE	BY 1983, THE INCIDENCE RATE OF NEW CASES OF GONORRHEA WILL NOT EXCEED 400 CASES PER 100,000 POPULATION.
OBJECTIVE	TO MAINTAIN INCIDENCE RATE FOR SYPHILIS AT THE CURRENT LEVEL. (Over recent years, no syphilis cases have been reported in the TTPI.)

[redacted]

5009155

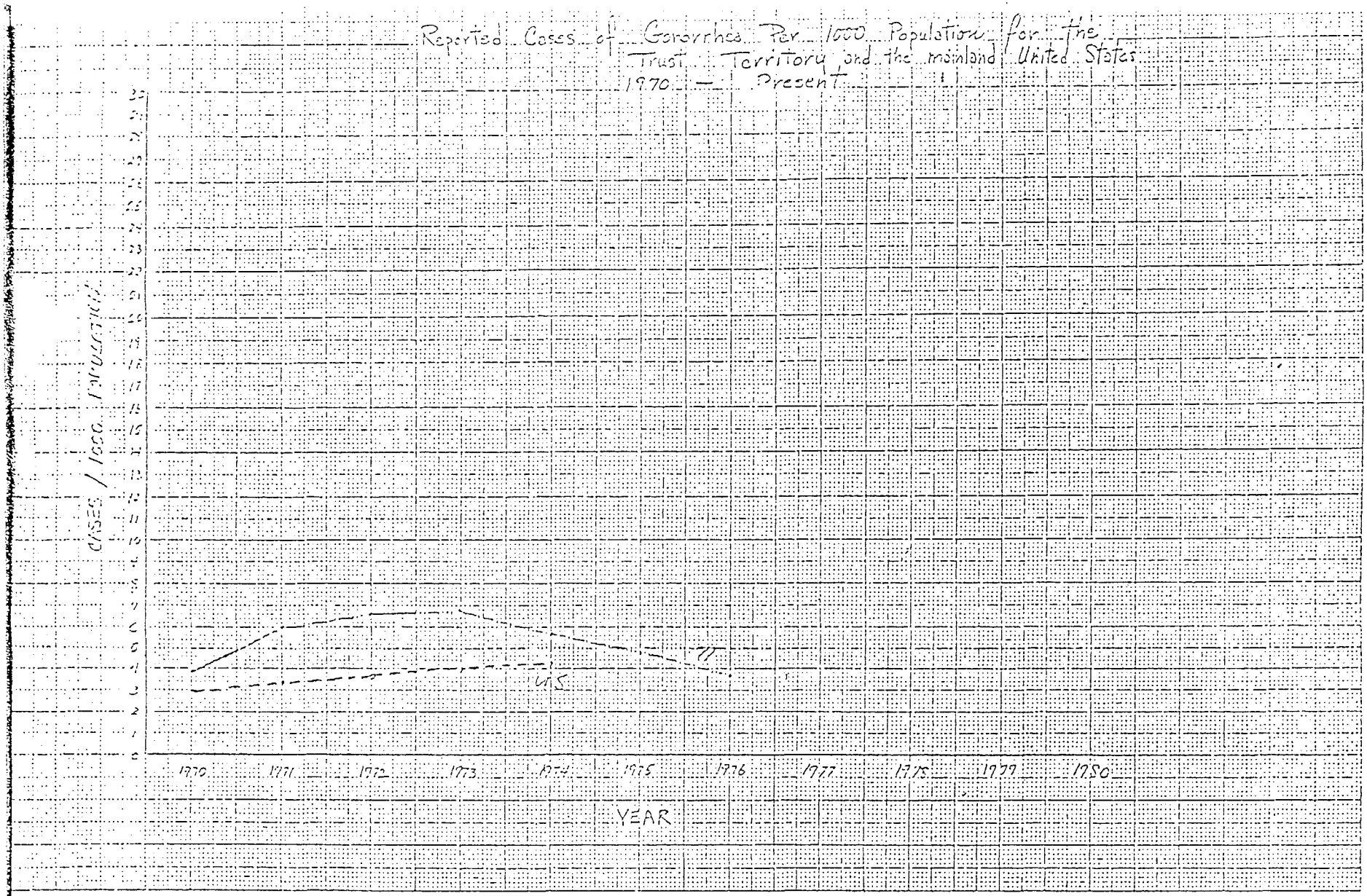


Table V-2

Table V-9

Page 17

TABLE 1 DATE: 7/31/78

IMMUNIZATION ASSESSMENT OF TRUST TERRITORY OF THE PACIFIC ISLANDS

BIRTH GROUP: 1957 - 1977

GROUPS	BIRTH SAMPLE	HAVE 844'S		ALL COMPLETE IMMUNIZATIONS		NO IMMUNIZATIONS		PARTIAL IMMUNIZATIONS		TOTAL NEEDING IMMUNIZATIONS		TOTAL NUMBER IMMUNIZED BY VACCINE TYPE									
												DPT		POLIO		MEASLES		RUBELLA		MUMPS	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Preschool age children (1972-1976)																					
Kosrae		905	100	793	88	-	-	112	12	112	12	879	97	872	96	829	92	820	91	496	55
Palau		1,883	100	1,582	84	14	1	287	15	301	16	1,682	89	1,698	90	1,655	88	1,652	88	863	46
Yap		1,378	100	894	65	40	3	444	32	484	35	1,078	78	1,032	75	988	72	964	71	773	56
Marshalls		5,962	100	2,974	50	407	7	2,581	43	2,988	50	3,501	59	3,500	59	3,161	70	4,118	69	2,136	36
Ponape		3,531	100	1,555	44	22	1	1,954	55	1,976	56	2,187	62	2,201	62	2,506	43	1,659	47	1,051	30
Truk		6,270	100	1,700	27	205	3	4,365	70	4,570	73	2,556	41	2,301	37	2,816	45	2,812	45	1,519	25
TOTAL		19,929	100	9,498	48	698	3	9,743	49	10,431	52	11,881	60	11,606	58	12,106	61	12,045	60	6,668	34
I. 1977 Birth Year Children																					
Kosrae		212	100	18	8	2	1	192	91	194	92	158	75	157	74	18	8	18	8	18	8
Palau		358	100	11	3	34	9	313	87	347	97	143	40	150	42	18	5	18	5	11	3
Yap		264	100	-	-	60	23	204	77	264	100	50	19	36	14	1	.4	1	.4	-	-
Marshalls		1,063	100	56	5	166	17	821	77	1,007	95	232	22	243	23	165	9	100	9	98	9
Ponape		606	100	15	2	5	1	586	97	591	98	155	26	157	26	24	4	25	4	23	4
Truk		818	100	6	1	76	9	735	90	812	99	72	9	50	6	20	2	20	2	19	2
TOTAL		3,321	100	106	3	363	11	2,852	86	3,215	97	810	24	793	23	151	5	181	5	169	5
III. 15-18 Month old children (Jan.-March 1976)																					
Kosrae		43	100	37	86	-	-	6	14	6	14	45	100	43	100	38	88	38	88	38	88
Palau		100	100	65	65	-	-	35	35	35	35	76	76	77	77	73	73	73	73	59	59
Yap		73	100	35	48	4	5	34	47	38	52	49	67	48	66	43	59	43	59	38	52
Marshalls		334	100	94	28	35	10	205	61	240	72	139	42	181	32	197	59	197	59	157	47
Ponape		256	100	77	33	1	-	158	67	159	67	129	55	129	55	80	34	79	35	71	30
Truk		303	100	22	7	17	6	269	87	236	93	70	23	51	17	64	21	63	20	55	13
Total		1,094	100	330	30	57	5	707	65	764	70	506	45	456	42	495	45	493	45	418	38
IV. Two Year Old Children (July-Dec.1975)																					
Kosrae		103	100	92	89	-	-	11	11	11	11	101	98	100	97	97	94	93	90	53	52
Palau		179	100	145	81	1	5	33	18	34	19	158	88	157	88	153	85	152	85	92	51
Yap		168	100	103	61	5	3	60	36	65	39	125	74	117	70	110	65	110	65	100	60
Marshalls		627	100	219	35	63	10	345	55	408	65	294	47	252	40	387	62	386	62	301	48
Ponape		370	100	118	32	3	1	249	67	252	68	192	52	188	51	128	35	127	34	118	32
Truk		626	100	75	12	22	4	529	85	551	88	176	28	148	24	195	31	191	31	181	29
Total		2,073	100	752	36	94	5	1,227	59	1,321	64	1,046	50	962	46	1,070	52	1,062	51	877	42

5009156

Table V-9

TABLE I — DATE: 7/31/78

IMMUNIZATION ASSESSMENT OF TRUST TERRITORY OF THE PACIFIC ISLANDS

BIRTH GROUP: 1957 - 1977

GROUPS	BIRTH SAMPLE	HAVE ALL'S		ALL COMPLETE IMMUNIZATIONS		NO IMMUNIZATIONS		PARTIAL IMMUNIZATIONS		TOTAL NEEDING IMMUNIZATIONS		TOTAL NUMBER IMMUNIZED BY VACCINE TYPE									
												DPT		POLIO		MEASLES		RUBELLA		MUMPS	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
V. Day-Care Center Children (1970-1975)																					
Kosrae		No Day-Care Centers																			
Palau		No Day-Care Centers																			
Yap		No Day-Care Centers																			
Marshalls		44	100	25	57	5	11	14	32	19	43	29	66	31	70	33	75	32	73	16	36
Ponape		No Day-Care Centers																			
Truk		No Day-Care Centers																			
Total		44	100	25	57	5	11	14	32	19	43	29	66	31	70	33	75	32	73	16	36
VI. Headstart Center Children (1971-1974)																					
Kosrae		No Headstart Program																			
Palau		137	100	119	90	5	4	8	6	13	10	129	91	129	91	122	92	123	93	39	30
Yap		114	100	126	85	1	1	19	13	20	14	127	87	127	87	130	89	133	89	64	44
Marshalls		204	100	166	81	7	3	35	18	38	19	176	35	181	89	190	93	167	82	45	22
Ponape		127	100	87	70	-	-	33	30	33	30	105	83	105	83	115	91	103	81	15	31
Truk		115	100	55	50	1	1	55	59	57	50	78	68	72	63	52	71	59	70	15	4
Total		724	100	558	77	9	1	157	22	166	23	606	84	606	84	659	91	623	86	224	31
VII. Kindergarten Children (1971-1974)																					
Kosrae		No Kindergarten Program																			
Palau		305	100	127	95	-	-	9	4	9	97	193	97	200	97	203	99	203	99	123	60
Yap		No Kindergarten Program																			
Marshalls		329	100	233	92	-	-	26	8	26	8	256	93	201	91	332	93	331	93	123	59
Ponape		No Kindergarten Program																			
Truk		No Kindergarten Program																			
Total		515	100	430	93	-	-	35	8	35	8	455	94	491	95	507	93	507	93	245	48
VIII. Elementary School Age Children (1964-1971)																					
Kosrae		1,323	100	503	38	4	.3	816	62	820	62	1,173	35	641	51	1,031	32	836	61	79	6
Palau		3,133	100	2,713	85	58	2	426	13	476	15	2,871	90	2,749	86	1,823	57	1,823	57	213	7
Yap		1,774	100	1,472	83	27	1	235	16	302	17	1,535	66	1,535	85	1,221	69	1,102	63	63	36
Marshalls		6,253	100	2,519	31	477	6	5,235	63	5,715	69	2,053	26	2,053	35	6,047	77	4,555	55	1,153	11
Ponape		4,051	100	1,553	26	211	3	4,115	71	4,553	74	1,536	39	1,237	29	4,325	71	3,322	55	556	9
Truk		9,773	100	1,306	14	359	4	7,615	75	7,973	82	3,355	31	2,341	24	5,706	61	1,921	51	255	3
Total		30,409	100	10,530	35	1,111	4	13,692	61	19,119	65	13,523	45	11,594	59	20,573	63	13,772	45	2,119	10
IX. High School Age Children (1960-1963)																					
Kosrae		473	100	264	57	7	1	104	47	205	43	313	29	253	56	302	61	125	26	2	1
Palau		1,490	100	916	61	81	6	450	33	574	39	1,162	78	950	61	933	67	537	36	35	2
Yap		397	100	290	73	9	2	93	25	107	27	342	85	295	71	210	54	213	55	-	-
Marshalls		2,213	100	24	1	333	15	2,023	75	2,481	92	170	5	54	2	1,135	41	351	15	3	-
Ponape		1,037	100	142	14	258	21	657	63	910	85	166	15	353	11	493	45	260	23	53	5
Truk		3,102	100	43	1	101	3	2,953	96	3,057	92	750	25	121	4	1,913	62	202	7	3	-
Total		8,987	100	1,693	19	789	9	6,499	73	7,294	81	2,949	33	1,831	20	5,116	57	1,698	19	97	1
X. 15-20 Year Old Children (1957-1962)																					
Kosrae		353	100	77	23	7	2	273	75	281	83	251	71	71	22	65	19	53	9	2	2
Palau		533	100	202	16	4	1	327	61	331	53	1,193	32	1,115	20	224	31	3	1	-	-
Yap		Incomplete Data																			
Marshalls		1,143	100	25	2	379	33	1,142	72	1,457	93	61	4	33	2	113	10	63	4	-	-
Ponape		505	100	73	14	17	3	415	82	423	84	5	1	35	12	291	58	155	32	-	-
Truk		1,313	100	43	3	59	5	1,253	96	1,253	100	33	3	33	2	1,279	61	65	4	-	-
Total		4,353	100	1,412	32	467	11	3,413	78	4,145	95										

500915

TUBERCULOSIS

Although in the decline, tuberculosis still continues to be a problem. Most of the tuberculosis patients are centered in the outer islands where health care is limited.

The tuberculosis incidence rate for the period of 1974-1977 was 62 cases per 100,000 population. That figure is high compared to the United States' rate of 15.0.

OBJECTIVE BY 1983, THE TUBERCULOSIS INCIDENCE RATE OF 62 CASES PER 100,000 POPULATION WILL BE DECREASED BY 25%.

V. IMMUNIZATIONS

Table V-9 displays a 1978 assessment of immunization levels in the Trust Territory of the Pacific Islands for children born in the years prior to 1975. Of the 27,805 children, only 12,186 or 44% had complete immunization. Most of the children with partial or no immunizations reside in the outer islands which poses an accessibility problem to public health officials.

OBJECTIVE BY 1983, 90% OF ALL CHILDREN THROUGH THE AGE OF SIXTEEN WILL BE IMMUNIZED AGAINST COMMUNICABLE DISEASES.

[redacted]

VI. CHRONIC AND HANDICAPPING DISEASES

Within the TTPI, the most prevalent morbidity problem is diseases of the respiratory system. During fiscal year 1977, 23.5% of all inpatient discharges were due to diseases of the respiratory system. Also during FY 1977, 26,850 cases or 22.5% of all reported outpatient problems were diagnosed as respiratory diseases.

During the years 1974-1976, the average number of deaths due to diseases of the respiratory system was 24.6. The mortality rate for the same three year period was 23.7 deaths per 100,000 population. This rate is high, compared to the United States rate of 11.9.

However, the TTPI rate is comparable to the American Samoa rate of 21.4.

DIABETES MELLITUS

Diabetes is a disease which is greatly under-estimated as it is seldom a primary cause of death, but it is handicapping and reduces the work force of a community.

The importance of diabetes in producing disability is compounded by its predisposing influence in the development of arteriosclerotic complications

[redacted]

which account for the majority of all deaths of diabetic individuals.

During the reporting years of 1974-1977, deaths due to diabetes as a primary cause averaged 11 deaths per year. The TTPI data recording system does not currently have the capability of recording contributing causes of death. The eleven deaths annually directly attributed to diabetes yields a mortality rate of 10.6 deaths per 100,000 population. This rate would probably increase substantially if secondary or contributing causes were retrievable.

NATIONAL GOAL	MAINTAIN ACCEPTABLE LEVELS OF PREVALENCE OF CHRONIC AND HANDICAPPING DISEASES.
OBJECTIVE	BY 1983, THE MORTALITY RATE FOR DISEASE OF THE RESPIRATORY SYSTEM WILL BE REDUCED TO LESS THAN 20 DEATHS PER 100,000 POPULATION.
OBJECTIVE	BY 1983, THE MORTALITY RATE FOR DIABETES AS A DIRECT OR CONTRIBUTING CAUSE OF DEATH WILL NOT EXCEED 8 PER 100,000 POPULATION.

[redacted]
5009160