PART I:

THE LOCAL COMMUNITY

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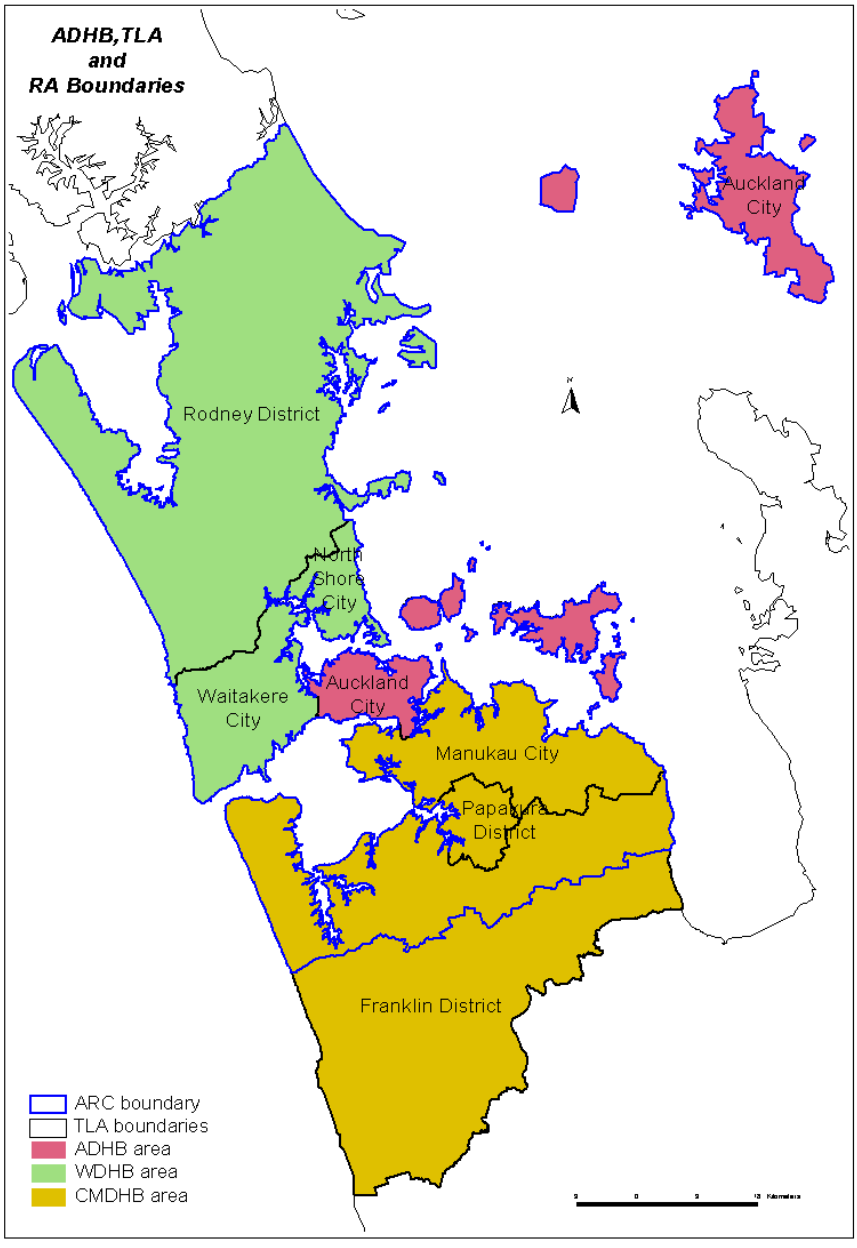
This section of the report provides information on the geographical boundary of the Auckland DHB zone. It also presents a demographic and health status profile of the population that resides within the Auckland DHB boundary.

1.01 Local Boundaries

Boundaries within the Auckland Region

Figure 1 below shows the three Auckland region District Health Board (DHB) boundaries (Auckland, Counties-Manukau, and Waitemata DHBs) for the Auckland region. The Territorial Local Authorities and the Auckland Regional Council boundaries are also shown.

Figure 1: The Auckland Region.



Data Source: Auckland Public Health Protection Service

The Auckland District Health Board Boundary

The Auckland District Health Board (DHB) zone includes several Wards, and corresponds to the Auckland City TLA zone. Note that the Auckland DHB zone includes the Hauraki Gulf Islands (Figure 2).

Figure 2: Auckland District Health Board (DHB) Zone by Ward

Data Source: 1996 Census

1.02 Demographic Profile of the Auckland DHB Population

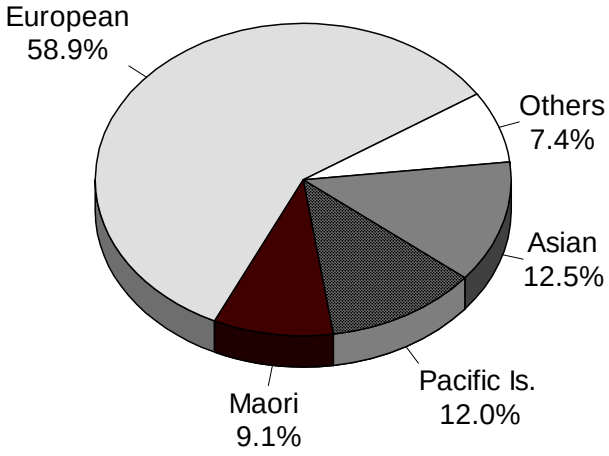
There were approximately 368,050 people living within the Auckland DHB zone as of 30th June 1996. This is based on information from the 1996 Census (Appendix I), but has been adjusted for population undercounting and adjusted for net migration of long-term New Zealand residents, who lived in the area at the time of the Census.

Preliminary results from the 2001 Census indicate there has been an increase in the total Auckland DHB population of 6.4 percent from 1996. However, this growth rate includes visitors to the area on Census night and excludes any adjustments for population undercounting. The 'usually resident' population estimate for the Auckland DHB zone will not be available until later this year when the final Census results are released.

The Auckland DHB Population by Ethnic Group

Figure 3 shows the population by selected ethnic groups in the Auckland DHB zone. As can be seen, nine percent of the population were Maori, 12 percent were Pacific peoples, and about 13 percent were Asian peoples.

Figure 3: The Auckland DHB Population by Ethnic Group, 1996

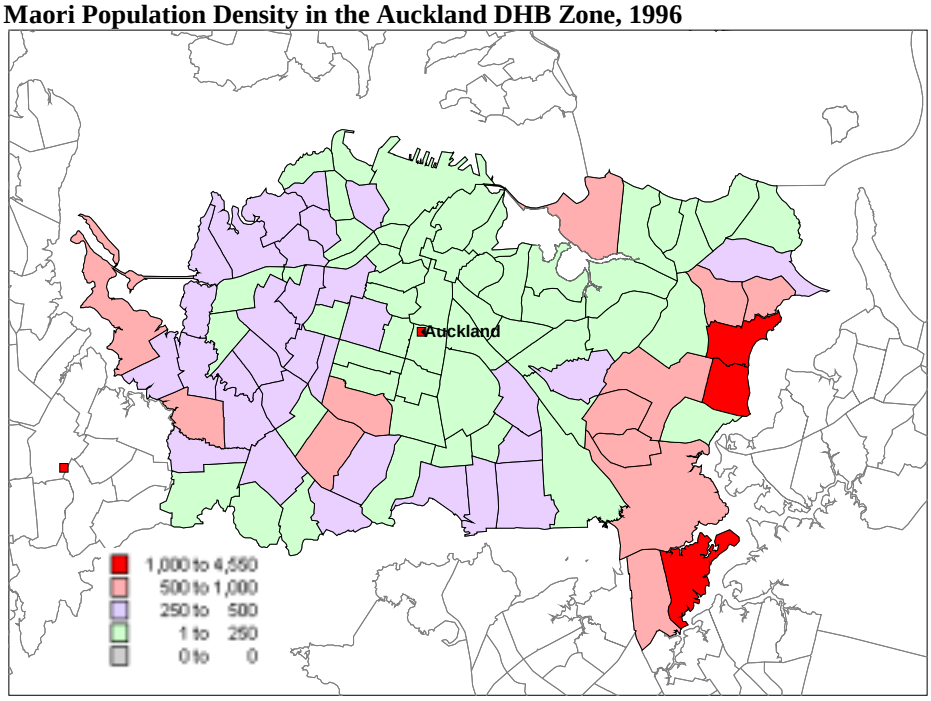


Data Source: 1996 Census

The Auckland DHB Maori population

There were about 32,000 Maori people living in the Auckland DHB zone in 1996. Most Maori lived in the Eastern part of the city. Figure 4 shows the distribution of Maori people within the DHB zone.

Figure 4: Maori Population Density in the Auckland DHB Zone, 1996

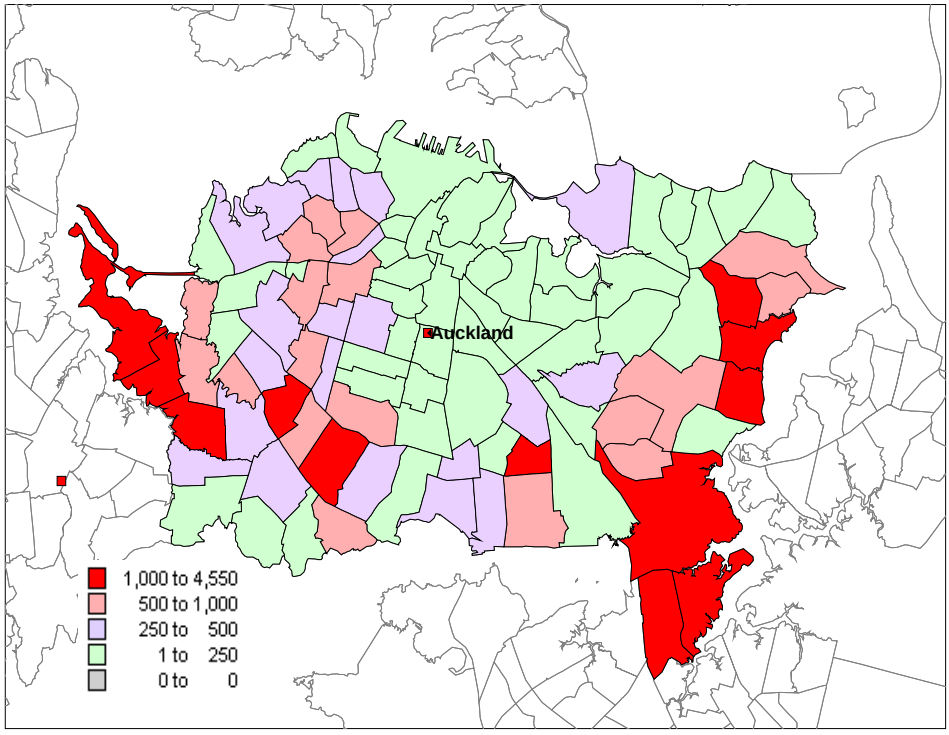


Data Source: 1996 Census

The Auckland DHB Pacific peoples population

There were about 42,000 Pacific peoples living in the Auckland DHB zone. The majority live in the eastern and the western part of Auckland, as shown in Figure 5 below.

Figure 5: Pacific Peoples Population Density in the Auckland DHB Zone, 1996



Data Source: 1996 Census

Table 1 shows the actual numbers of Pacific peoples by culture groups in the Auckland DHB zone. The Samoan community comprised the largest Pacific group in the zone in 1996, followed by the Tongan community.

Table 1: Number of Pacific Peoples by Culture Group, 1996

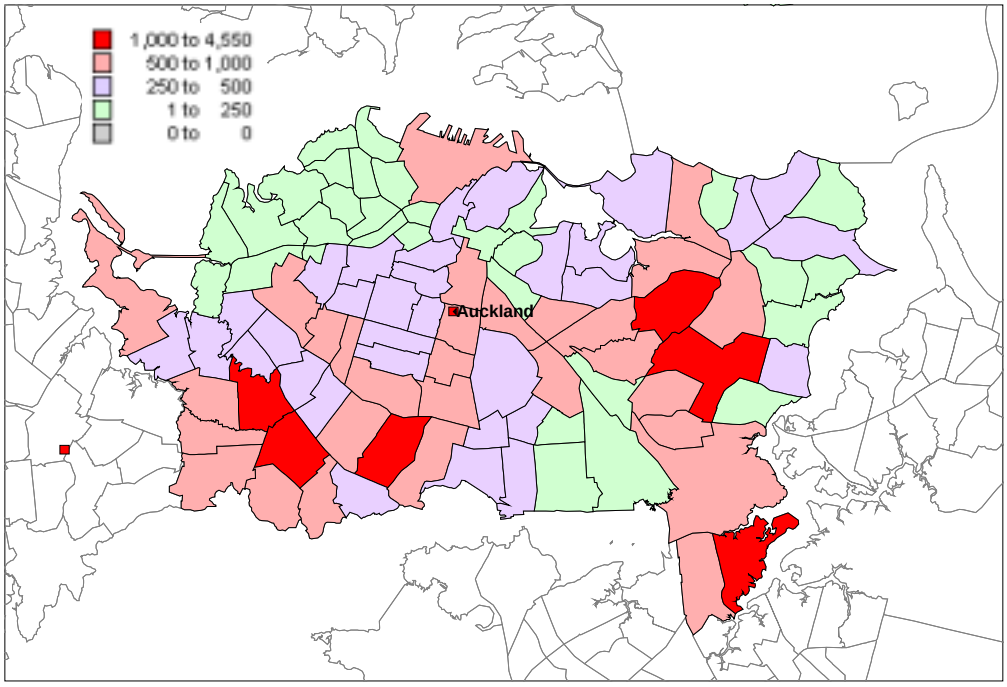
Pacific Peoples	Auckland DHB
Samoan	17,352
Cook Is	6,534
Tongan	10,065
Niuean	5,205
Tokelauan	318
Fijian	1,668
Other PI	447
Total	41,589

Data Source: 1996 Census

Asian peoples in the Auckland DHB Zone

There were about 43,000 Asian people living in the Auckland DHB zone in 1996 (Figure 6). The largest culture group within this ethnic group category were the Chinese and Indian peoples (Table 2).

Figure 6: Asian Peoples Population Density in the Auckland DHB Zone, 1996



Data Source: 1996 Census

Table 2: Number of Asian Population by Culture Group, 1996

Asian Peoples	Auckland DHB
Filipino	1,584
Khmer	387
Vietnamese	495
Other South East Asia	1,893
Chinese	20,214
Indian	11,955
Sri Lankan	1,473
Japanese	1,749
Korean	2,079
Other Asian	1,452
Total	43,281

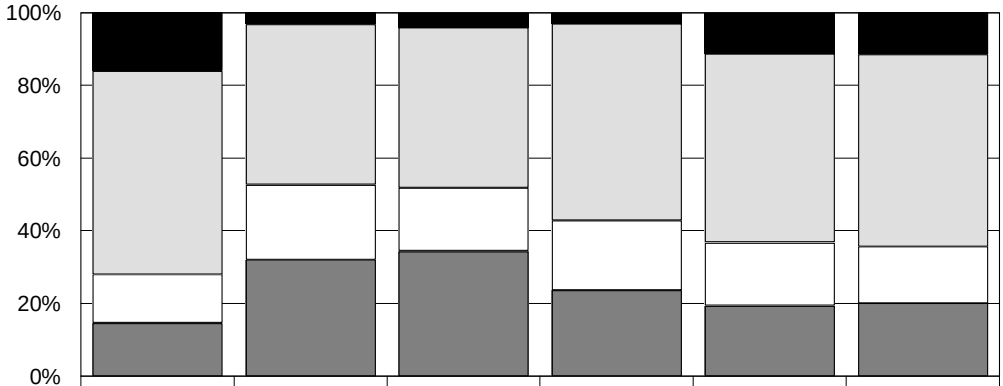
Data Source: 1996 Census

The Age Structure of the Auckland DHB Population, by Ethnicity

Figure 7 shows the age structure of the population in the Auckland DHB zone by ethnicity. As can be seen, approximately 36 percent of the population were young people under the age of 25 years, and about 11 percent were older people (65 yrs+).

Both the Maori and Pacific populations were young populations, with more than fifty percent aged between 0 and 24 years and less than five percent of the population over the age of 65 years.

Figure 7: Age Structure of the Population in the Auckland DHB Zone, 1996



	European	Maori	PI	Asian	Others	AKL DHB
65+	16	3.1	4.1	3	11.2	11.4
25-64	56	44.2	44	54.1	52	53
15-24	13.4	20.6	17.5	19.1	17.4	15.6
0-14	14.6	32.1	34.4	23.7	19.4	20.1

Data Source: 1996 Census

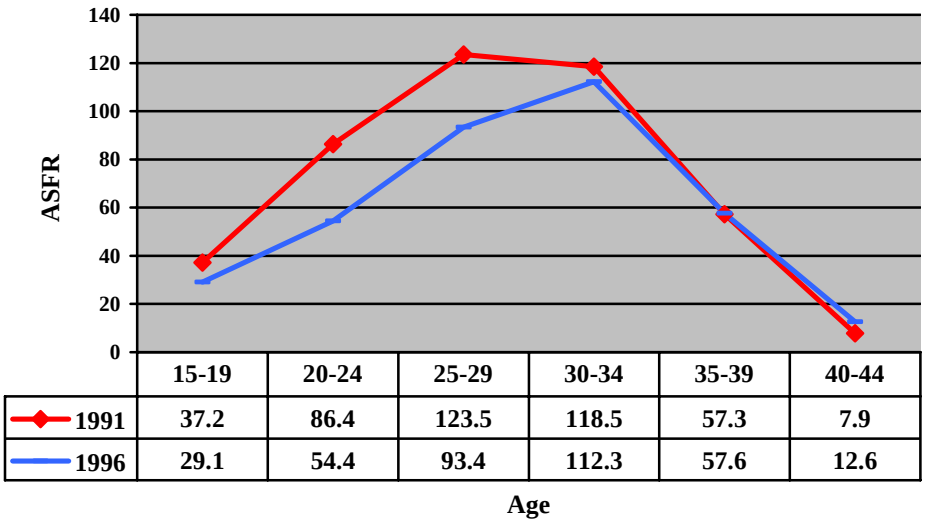
The Fertility of Women in the Auckland DHB Zone

An Age Specific Fertility Rate (ASFR) is defined as the number of births per 1,000 women, of a given age group.

Figure 8 shows the changing fertility patterns of women in Auckland DHB zone between 1991 and 1996. The chart shows that more women in 1991 tended to have babies at a younger age (25-29) compared to women in 1996, who postponed having children until they were older (30-34).

This trend towards delaying fertility has been observed in recent years in many industrialized nations of the world and evidence suggests that there are links between changes in fertility patterns and changes in socio-economic circumstance in society.

Figure 8: Age Specific Fertility Rate for Auckland DHB Zone, 1991 and 1996.



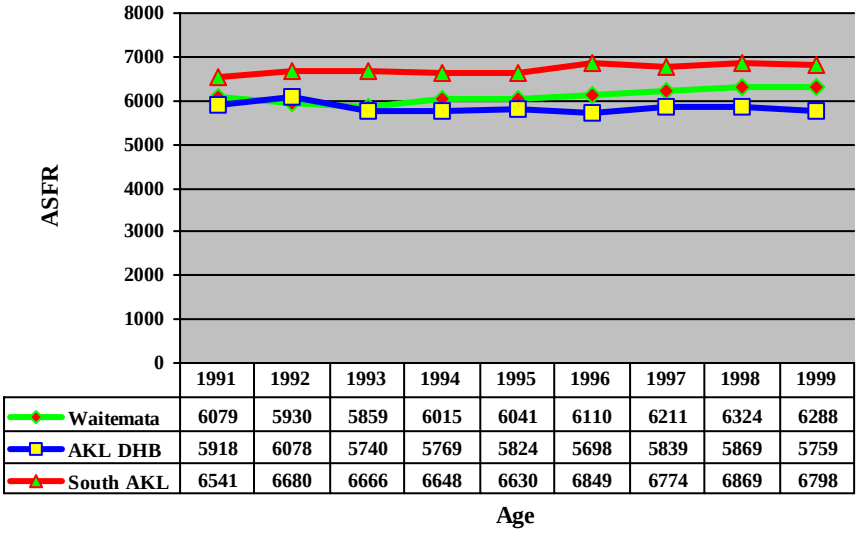
	15-19	20-24	25-29	30-34	35-39	40-44
1991	37.2	86.4	123.5	118.5	57.3	7.9
1996	29.1	54.4	93.4	112.3	57.6	12.6

Data Source: 1996 Census

Live births in the Auckland DHB zone

There were on average just over 5,800 babies born annually in the Auckland DHB zone between April 1991 and March 1999. Figure 9 shows the total number of births in the area increased steadily between 1993 and 1995, but dropped sharply in 1996, before increasing again after this date.

Figure 9: Number of Live Births for Residents of the Auckland DHB Zone, 1991- 1999



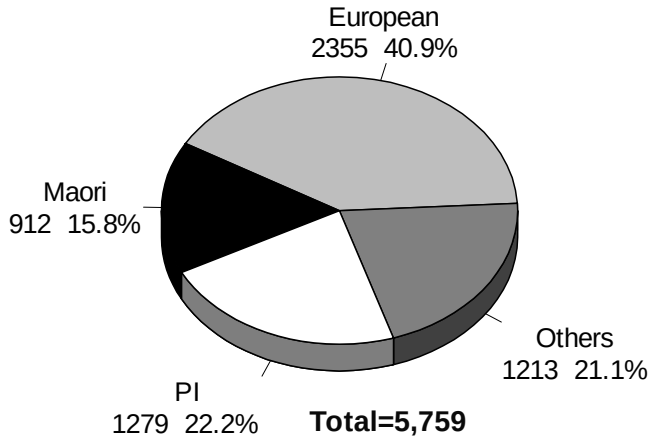
	1991	1992	1993	1994	1995	1996	1997	1998	1999
Waitemata	6079	5930	5859	6015	6041	6110	6211	6324	6288
AKL DHB	5918	6078	5740	5769	5824	5698	5839	5869	5759
South AKL	6541	6680	6666	6648	6630	6849	6774	6869	6798

Data Source: 1996 Census

Live births in the Auckland DHB zone by ethnic group

Figure 10 shows the number of births by ethnicity in the Auckland DHB zone between April 1998 and March 1999. As can be seen, almost sixty percent of live births were non-European.

Figure 10: Number of Live Births by Ethnic group Auckland DHB Zone, 1998-1999



Data Source: 1996 Census

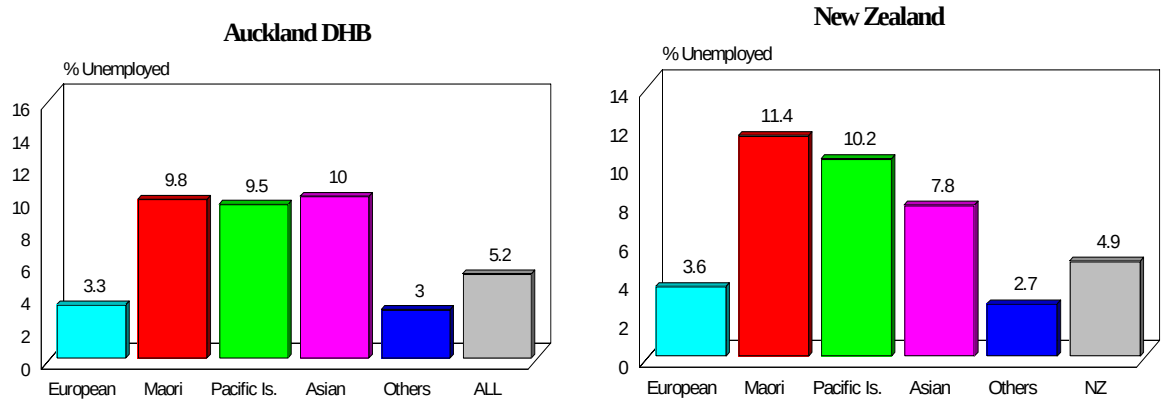
Socio-Economic Status of People in the Auckland DHB Zone, 1996

A mix of financial, educational and household-related indicators of socio-economic status are reviewed in this section of the report. Socio-economic characteristics are well documented as determinants of both population and individual health status. Socio-economic factors are also known to impact on health and disability service utilisation. In many cases, these factors act as barriers, limiting access to health and disability services. For instance, the cost of accessing services can act as a significant barrier to services for the socio-economically disadvantaged sectors of a community. Thus, these characteristics are an important consideration in any assessment of population health status.

Unemployment

A slightly higher percentage of the people aged 15 years and over in the Auckland DHB zone were unemployed, when compared with the national figure (Figure 11). Asian peoples residing in Auckland had the highest percentage of unemployed, compared to other ethnic groups residing within the zone and this figure was higher than the average percent of Asian peoples unemployed at the national level.

Figure 11: % Unemployed by Ethnicity, for Auckland DHB & New Zealand pops., 1996



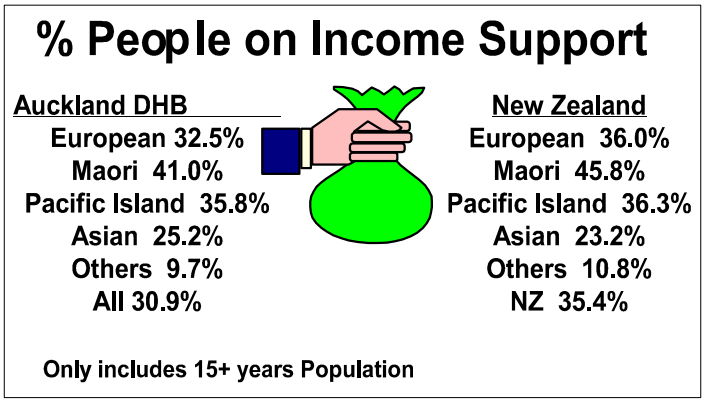
Data Source: 1996 Census

Further, although the overall percent unemployed in the Auckland DHB zone was higher than the percentage for the all New Zealand population, the percentage of Maori and Pacific peoples unemployed in Auckland was lower than the percentage for the all New Zealand population.

People receiving income support

Figure 12 indicates that approximately 31 percent of people aged 15 years and over in the Auckland DHB zone received income support, compared to approximately 35 percent for the total New Zealand population. Within Auckland, Maori had the highest percentage (41%) followed by Pacific peoples (36%). However, the percentages of people on income support across ethnic groups in Auckland were lower than the all New Zealand figures, with the exception of the percentage for Asian peoples.

Figure 12: Income Support by Ethnicity forAuckland DHB & New Zealand pops., 1996

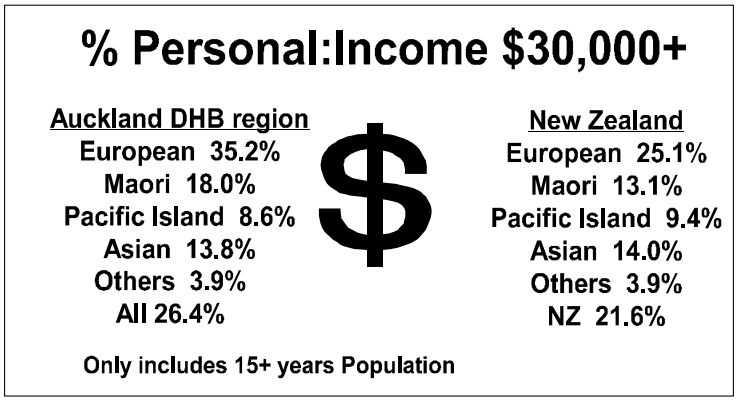


Data Source: 1996 Census

Personal income of $30,000 or more

With the exception of Pacific and Asian peoples, a higher percentage of people across the various ethnic groups in Auckland had an income of $30,000 or more, compared to the national figures. Figure 13 shows the percentage of Maori in Auckland with an income of $30,000 was five percent higher than the national figure. These trends are not unexpected, since personal income levels in Auckland are generally higher than those for most other New Zealanders.

Figure 13: Personal Income of $30,000 or more, by Ethnicity forAuckland DHB & New Zealand pops., 1996



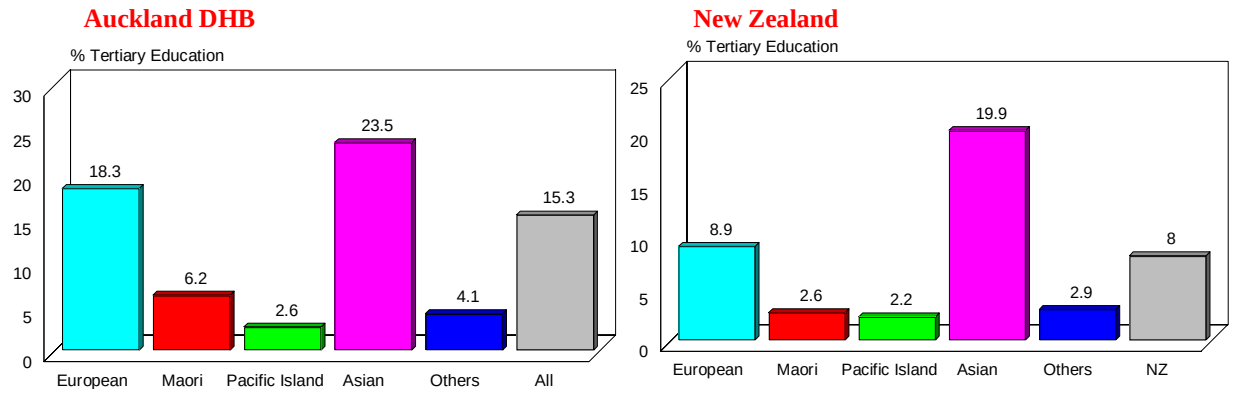
Data Source: 1996 Census

Education

Figure 14 indicates that 15 percent of people in the Auckland DHB zone had a tertiary education in 1996, compared with only eight percent for the all New Zealand population.

Asian peoples appear to have had the highest percentage of people with a tertiary education in both the Auckland and national populations. Pacific peoples had the lowest proportion of the population with a tertiary education, at both the local and national level.

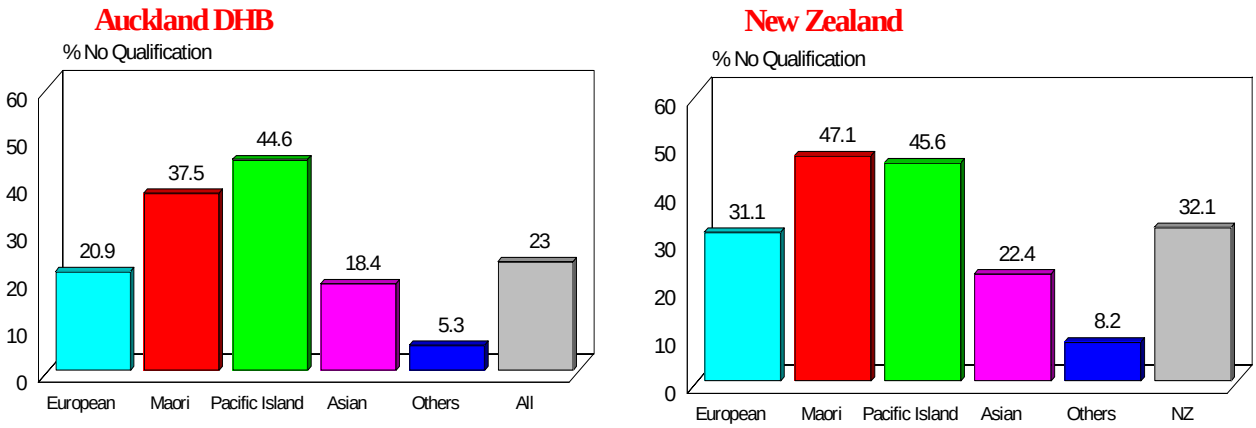
Figure 14: % Tertiary Education, by Ethnicity forAuckland DHB & NZ pops., 1996



Data Source: 1996 Census

The Auckland DHB zone had the lowest percentage of people with no qualification, compared to the national figures, across all ethnic groups (Figure 15).

Figure 15: % No Qualification, by Ethnicity forAuckland DHB & New Zealand pops., 1996



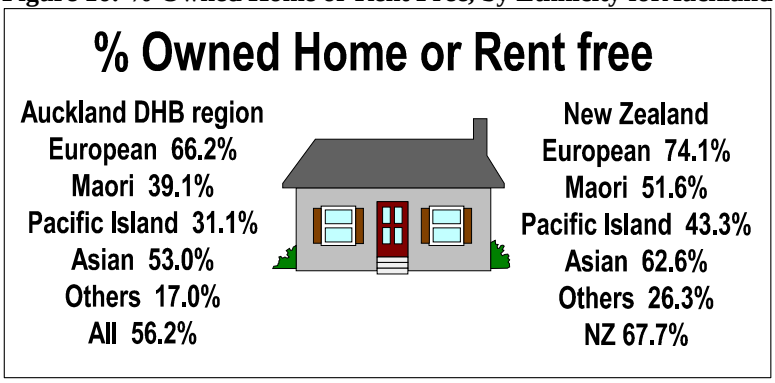
Data Source: 1996 Census

Nature of home occupancy

Due to the high cost of housing in Auckland, only 56 percent of households in the Auckland DHB zone either owned their own home or occupied it rent free, compared with 68 percent for the total New Zealand population (Figure 16).

The ethnic-specific percentages for the total New Zealand population were markedly higher than the percentages for Auckland residents. However, the trend between both populations was very similar, with a greater proportion of European households in their own homes, or rent free, compared to any other ethnic group and the lowest percentage of household home ownership, or rent free status, observed among the "others" ethnic group.

Figure 16: % Owned Home or Rent Free, by Ethnicity forAuckland DHB & New Zealand pops., 1996

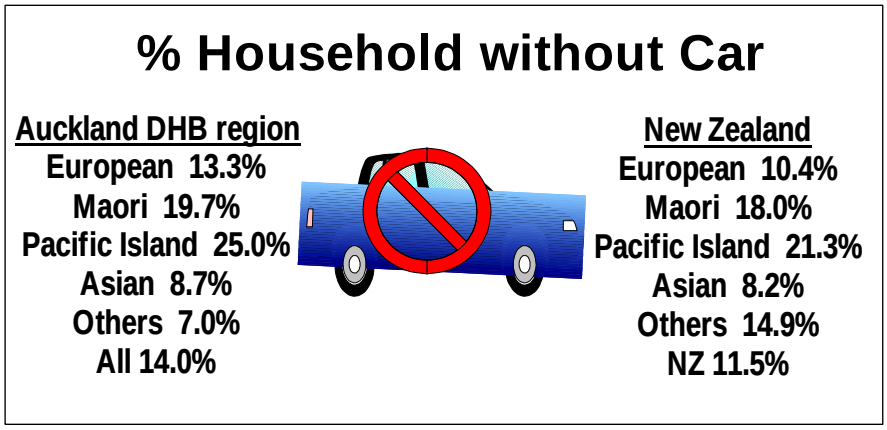


Data Source: 1996 Census

Households without a car

A greater proportion of Auckland households had no car available for use, compared to the figure for the all New Zealand population (Figure 17). For both populations, Pacific peoples had the highest percent of households without a car, followed by Maori households.

Figure 17: % Households without a Car, by Ethnicity forAuckland DHB & New Zealand pops., 1996

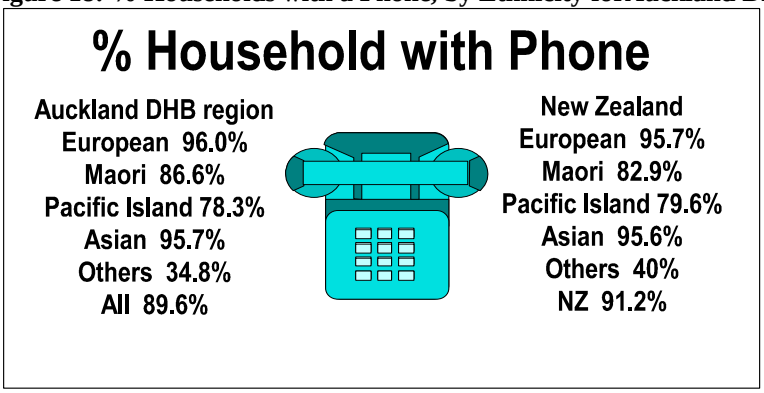


Data Source: 1996 Census

Households with a telephone

About ninety percent of households in Auckland had a telephone in 1996 (Figure 18). The ethnic group "Others" had the lowest proportion of households with a telephone in both populations, whilst European and Asian peoples had the highest proportion of households with a telephone.

Figure 18: % Households with a Phone, by Ethnicity forAuckland DHB & New Zealand pops., 1996

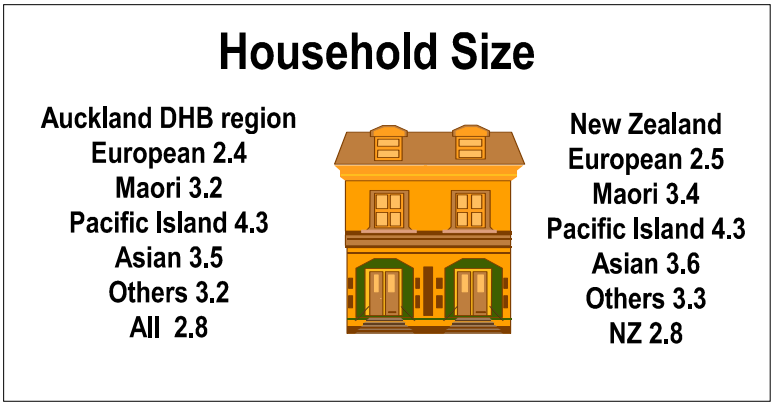


Data Source: 1996 Census

Household size

The average number of people per household for Auckland was 2.8 in 1996 (Figure 19). When broken down by ethnic group, Pacific peoples households had the largest average household size in both the Auckland and all New Zealand household populations. As can be seen, average household size across ethnic groups in Auckland was very similar to the average ethnic-specific household sizes for the national population.

Figure 19: Average Household Size, by Ethnicity forAuckland DHB & NZ pops., 1996

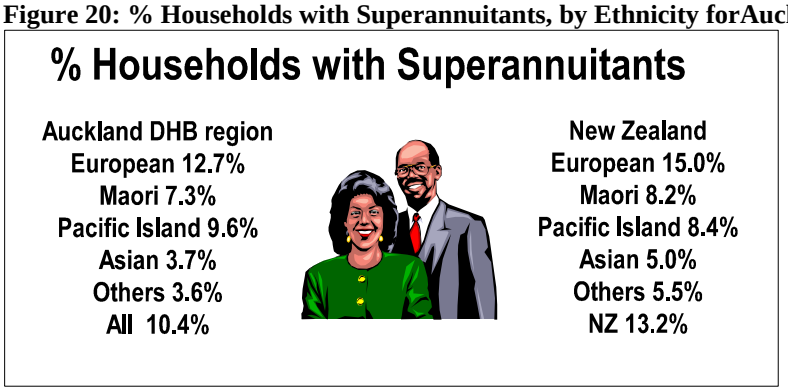


Data Source: 1996 Census

Households with superannuitants

A smaller proportion of households in Auckland had superannuitants living within, compared to the proportion for the all New Zealand household population (Figure 20).

Figure 20: % Households with Superannuitants, by Ethnicity forAuckland & New Zealand pops., 1996



Data Source: 1996 Census

Percentage of the population in Auckland by NZDEP96

NZDep96 combines nine census variables from the 1996 Census, which reflect aspects of material, and social deprivation via a statistical technique called principal component analysis. These are calculated at a meshblock level (statistical units defined by Statistics New Zealand, containing a median of 90 people), which can then be aggregated to larger units. The score is scaled to give a New Zealand average of 1000, with a standard deviation of 100 index points. In general use, one uses deciles – tenths of the population, where 1 represents the least deprived areas and 10 the most deprived areas.

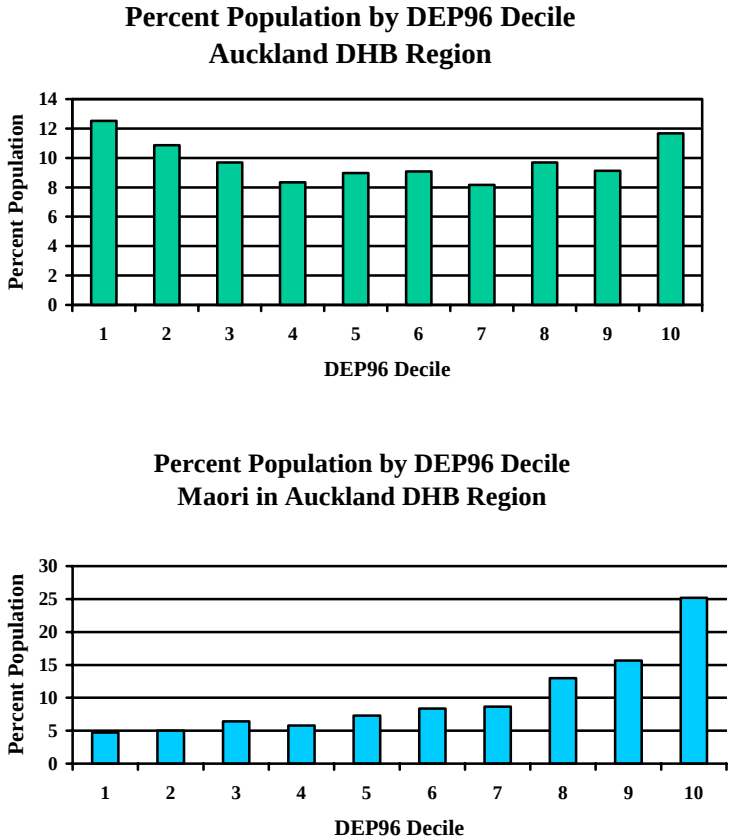
The variables are (in order of importance in the index):

❑	Communication	People with no access to a telephone;
❑	Income	People aged 18-59 receiving a means tested benefit;
❑	Employment	People aged 18-59 unemployed;
❑	Income	People in households with equivalised income below a threshold;
❑	Transport	People with no access to a car;

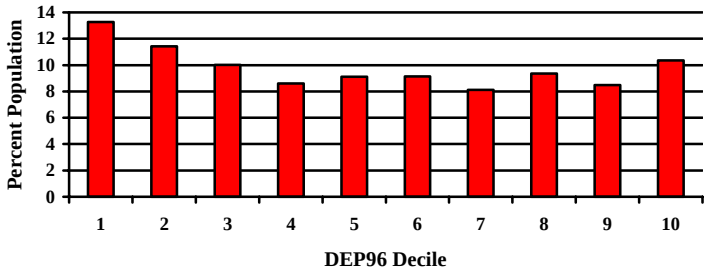
❑	Support	People aged <60yrs living in a single parent family;
❑	Education	People aged 18-59 without any qualifications;
❑	Housing	People not living in own home;
❑	Living space	People in households with equivalised Occupancy above a threshold.

There is ongoing debate about the selection of these variables, the methods of aggregation and so on. The NZDep96 uses average characteristics of an area to classify individuals. There will be many individuals misclassified – they may live in an area apparently wealthier than their individual standing would support, or they live an area where their individual characteristics would suggest they have a higher socio-economic status. Notwithstanding this potential for misclassification, when working with large populations, the area classifications can provide a powerful proxy for individual socio-economic status.

Figure 21: % Auckland DHB Population by NZDEP96 Decile & Ethnicity, 1996



Percent Population by DEP96 Decile
Non Maori in Auckland DHB Region



Data Source: 1996 Census

The bar graphs above show the proportion of the population in Auckland that lived within each NZDEP96 decile in 1996. Figure 21 shows that approximately the same proportion of the population lived in the least deprived areas of Auckland (decile 1-3) as lived in the most deprived areas of Auckland (decile 8-10). Figure 21 also shows that a higher proportion of Maori lived in the more deprived areas of Auckland, compared to the Non-Maori population.

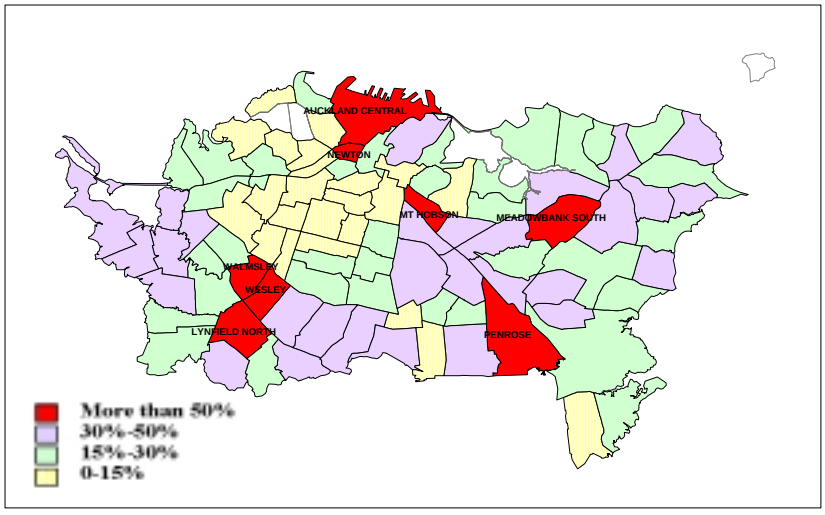
Private Medical Insurance

Private medical insurance rates have an impact on service demand in the public sector. Data available from Statistics New Zealand suggests that the percentage of the national population with private medical insurance has reduced markedly in recent years, from forty percent in 1995/96 to 37 percent in 1996/97 and was between 33-35 percent in 2000.

In 1996/97, approximately 45.5 percent of the Central Auckland (Auckland DHB zone) population had private medical insurance (Parr et al, 1998). Given that national rates have reduced in recent years, it is reasonable to assume rates in the Auckland DHB have also reduced.

The Future Population for the Auckland DHB Zone

Figure 22: % Population Change in the Auckland DHB Zone, 1996 – 2016.



Data Source: 1996 Census

The Map above (Figure 22) shows the projected level of population change between 1996 and the year 2016. This is based upon medium growth assumptions generated by Statistics New Zealand. Note that the population projections at the Census Area Unit level are only available up to the year 2016.

Table 3 below shows the projected Auckland population, from the 1996 base population to the year 2021, by age group. As can be seen, it is expected that there will be almost 500,000 people living in the Auckland DHB zone by the year 2021. This is an increase in population of approximately 36 percent or 130,000 people over a twenty-five year period.

Thus, over this period the Auckland DHB will have to plan for the health needs of an additional 5,200 people (on average) each year.

Table 3: Population Projections for the Auckland DHB Zone, 1996-2021.

AKL DHB	1996	2001	2006	2011	2016	2021
0-14	73,820	80,250	80,380	77,730	76,070	77,070
15-19	24,240	26,110	30,540	32,440	31,940	30,650
20-64	224,520	245,730	265,330	286,490	303,820	317,150
65+	39,840	39,410	40,920	45,300	55,020	67,470
All Ages	362,420	391,500	417,170	441,960	466,850	492,340

Data Source: 1996 Census

Expected population change in Auckland between 1996 and 2021

Table 4 shows the 1996 Auckland base population projected to 2021, with the expected population change, by age group. The table indicates population growth of around 36 percent is expected in Auckland between 1996 and 2021. The highest area of growth is expected to occur in the 65yrs+ age group, whilst the lowest area of growth is expected in the 0-14yrs age group.

Table 4: Population Growth for Auckland DHB Zone, 1996 – 2021.

AKL DHB Zone	1996	2021	Number Change	%Change
0-14	73820	77070	3250	4.4
15-19	24240	30650	6410	26.4
20-64	224520	317150	92630	41.3
65+	39840	67470	27630	69.4
All Ages	362420	492340	129920	35.8

Data Source: 1996 Census

Expected age structure of the Future Auckland Population, 1996-2021

Table 5 below shows the age structure of the future Auckland DHB population. The table suggests that older people (65+ years) will comprise almost 14 percent of the total population by the year 2021, an increase of about three percent from the 1996 base population. On the other hand, the proportion of young people in the population is expected to decrease by more than four percent between 1996 and 2021.

Table 5: Expected Age Structure of the Future Auckland Population, 1996 - 2021

AKL DHB Zone	1996	2001	2006	2011	2016	2021
0-14	20.4	20.5	19.3	17.6	16.3	15.7
15-19	6.7	6.7	7.3	7.3	6.8	6.2
20-64	62.0	62.8	63.6	64.8	65.1	64.4
65+	11.0	10.1	9.8	10.2	11.8	13.7
All Ages	100	100	100	100	100	100

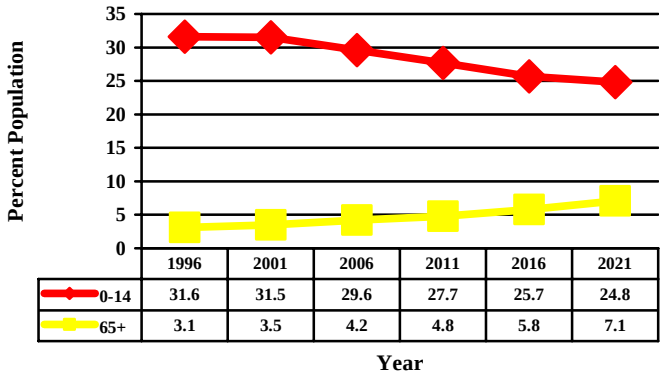
Data Source: 1996 Census

In addition, the proportion of children (0-14yrs) in the Auckland population is expected to be very similar to the proportion of older people (65yrs+) in the population by 2021.

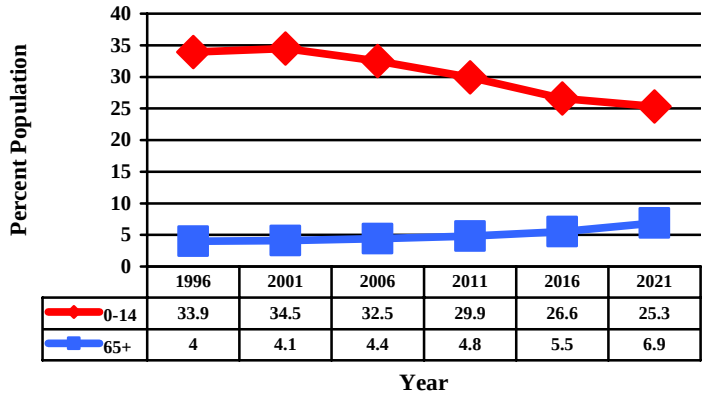
Figure 23 shows Auckland projections by ethnic group for the child (0-14yrs) and older adult (65yrs+) populations to 2021. The line graphs displayed indicate that although the proportion of older people in the Maori and Pacific peoples populations are expected to increase to 2021, the increase in the population proportion will be small and both populations will remain relatively 'young' populations in Auckland. In comparison, the 'Others' ethnic group population will be an 'older' population comprised of a greater proportion of older people (65yrs+) and a smaller proportion of children(0-14yrs) by 2021.

Figure 23: Population Projections for Auckland DHB, by Age Group & Ethnicity, 1996 - 2021

Maori

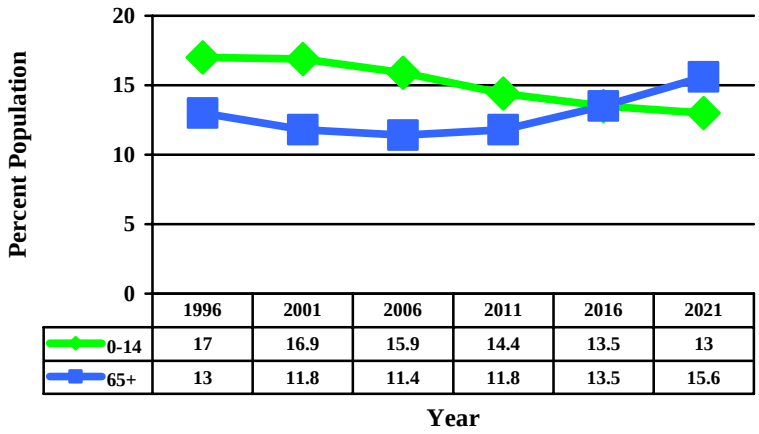


Pacific Peoples



	1996	2001	2006	2011	2016	2021
0-14	33.9	34.5	32.5	29.9	26.6	25.3
65+	4	4.1	4.4	4.8	5.5	6.9

Others



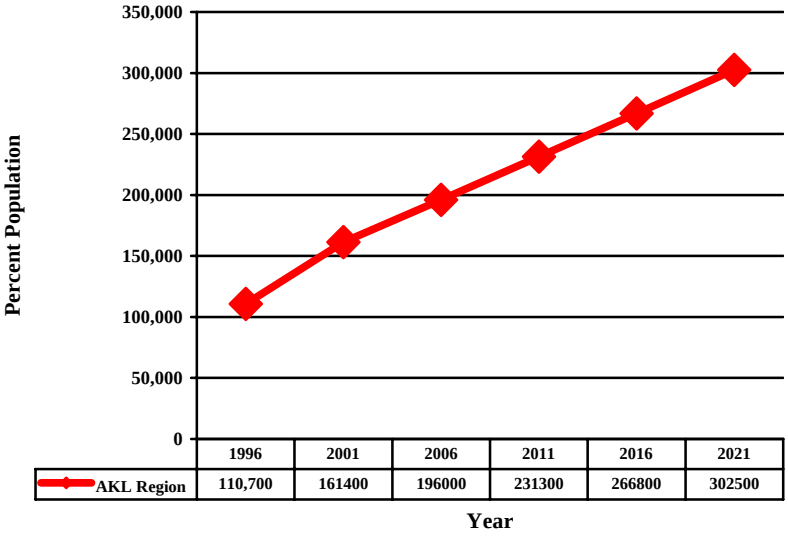
	1996	2001	2006	2011	2016	2021
0-14	17	16.9	15.9	14.4	13.5	13
65+	13	11.8	11.4	11.8	13.5	15.6

Data Source: 1996 Census

Figure 24 shows the projected population figures for the Asian peoples population in the Greater Auckland region. This region includes Rodney District, North Shore City, Waitakere City, Auckland City, Manukau City, Papakura and Franklin Districts. At the time of writing, the population projection for Asian peoples in the region was not available at the DHB level.

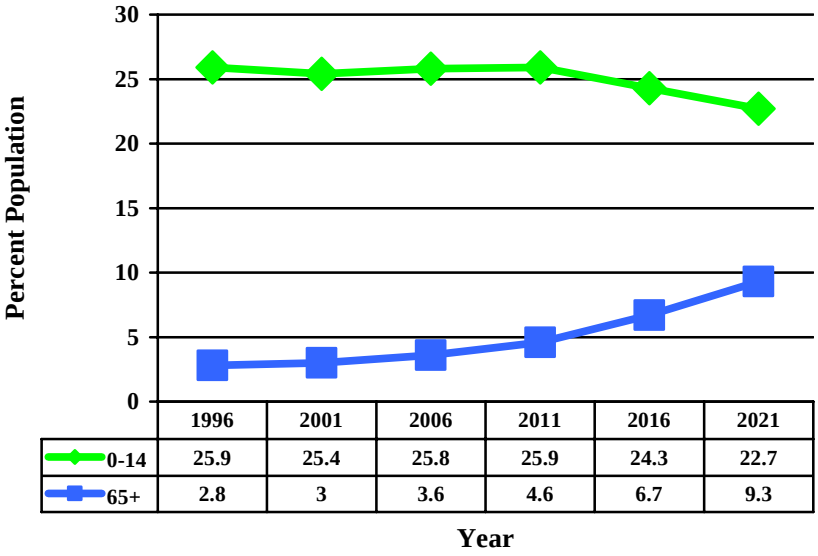
The estimates suggest there will be an exponential increase in the numbers of Asian peoples residing within the region over time. Indeed, the population is projected to increase by two hundred percent to 2021, if current trends continue.

Figure 24: Population Projections for Asian Peoples in the Greater Auckland Region, 1996 - 2021



Data Source: 1996 Census

Figure 25: Population Projections for Asian Peoples in the Greater Auckland Region, by Age Group, 1996 - 2021



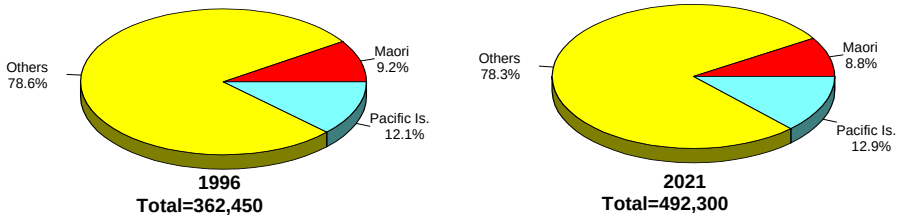
Data Source: 1996 Census

The age structure of the Asian peoples population is expected to change only slightly between 1996 and 2021 (Figure 25). Indeed, the proportion of older people (65yrs+) in the Asian peoples population is expected to increase by only six percent between 1996 and 2021 and the proportion of children (0-14yrs) in the population is expected to decrease by approximately three percent over the same period.

Ethnicity of the future population

Figure 26 presents the ethnicity of the Auckland DHB population in 1996 compared to the estimate for the year 2021. As can be seen, there will be a slight increase in the proportion of Pacific peoples and a slight decrease in the proportion of Maori in the population overtime, assuming that current trends continue.

Figure 26: Population Projections for Auckland DHB Zone, by Ethnicity, 1996 and 2021.



Data Source: 1996 Census

It is important to note here that although the ethnic structure of the population might change slightly, there will be large increases in the actual numbers of people within each ethnic group category over time. Detailed population projections are provided in Appendix II.

Profile of the Auckland DHB Population by Ward

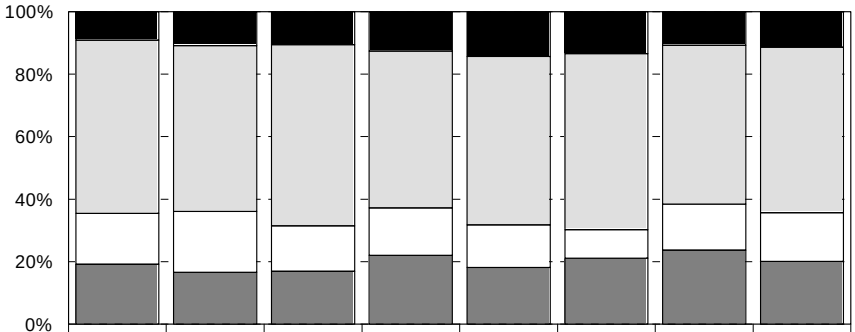
The following analysis provides an overview of the Auckland DHB population by individual Ward. There are seven Wards within the zone, including:

- Western Bays
- Balmoral
- Avondale/Roskill
- Hobson
- Penrose
- Eastern Bays
- Hauraki Gulf Isles

Age structure of the Auckland DHB population by Ward

The bar graph in Figure 27 shows that there was a higher percentage (14%) of people aged 65yrs+ in the Eastern Bays Ward compared to other Wards. Penrose had the highest proportion of young people in the population, compared to other Wards.

Figure 27: Age Structure of the Auckland DHB Population, by Ward, 1996



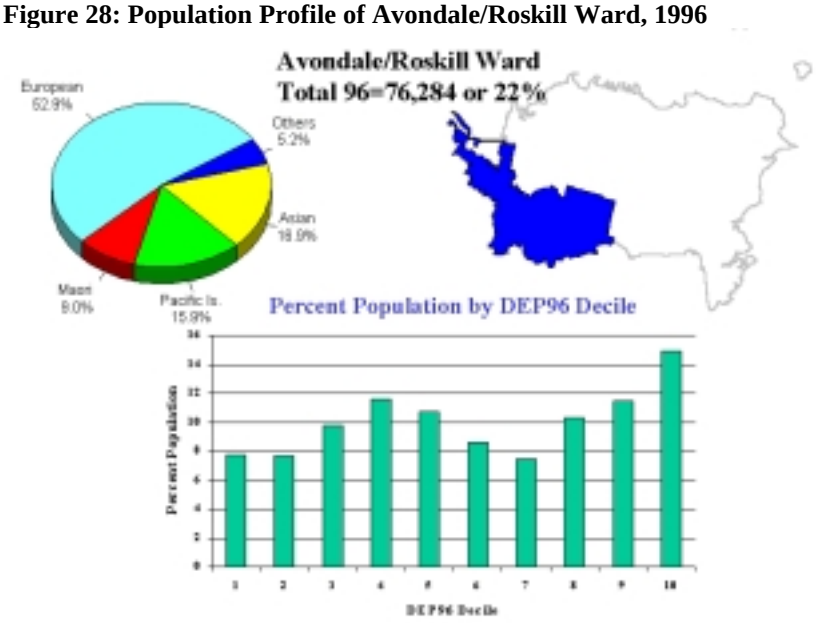
	Balmoral	Hobson	Western Bays	Avondale/ Roskill	Eastern Bays	Gulf Islands	Penrose	Auckland DHB
65+	9.1	10.9	10.6	12.6	14.4	13.4	10.8	11.4
25-64	55.5	53	57.9	50.2	53.8	56.4	50.8	52.9
15-24	16.2	19.5	14.6	15.2	13.7	9.1	14.7	15.5
0-14	19.2	16.6	16.9	22	18.1	21.1	23.7	20.1

Data Source: 1996 Census

Profile of Avondale and Roskill Ward

Figure 28 shows that this Ward had a very high non-European population in 1996, with 17 percent of the population comprised of Asian peoples, 16 percent Pacific peoples and nine percent Maori. The bar graph presented indicates that a large proportion of the population also lived in deprived areas (decile 8 to 10).

Figure 28: Population Profile of Avondale/Roskill Ward, 1996

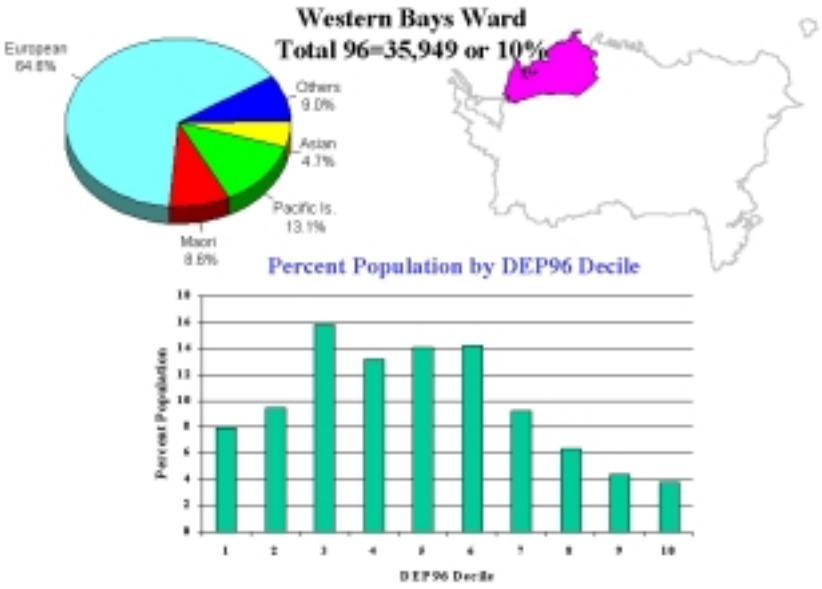


Data Source: 1996 Census

Profile of Western Bays Ward

The population in this Ward comprised approximately ten percent of the total Auckland DHB population in 1996 (Figure 29). In contrast to the Avondale and Roskill Ward, about 65 percent of the population in the Western Bays Ward were European and only five percent were Asian peoples, 13 percent were Pacific peoples and nine percent were Maori. Again, in contrast to the Avondale and Roskill Ward a high proportion of the population lived in less deprived areas (decile1 to 5) in 1996.

Figure 29: Population Profile of Western Bays Ward, 1996

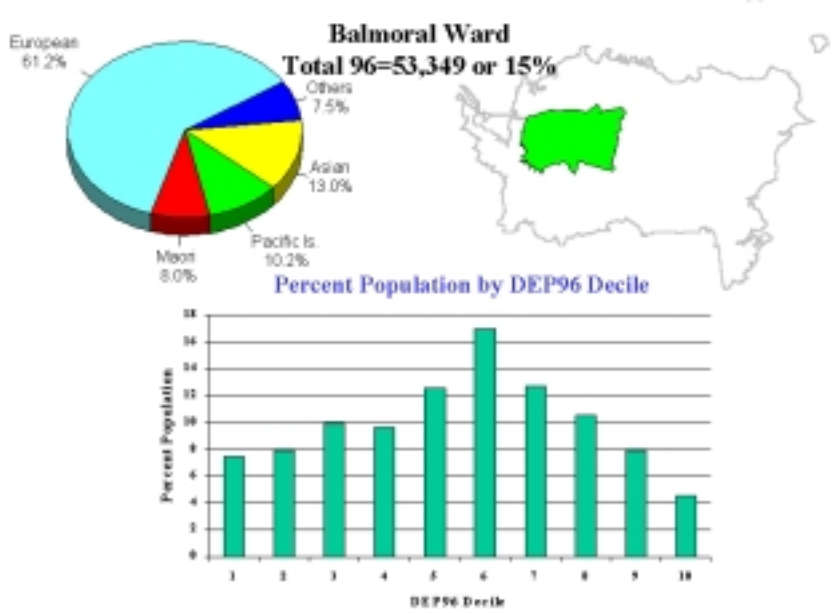


Data Source: 1996 Census

Profile of Balmoral Ward

Similar to the Western Bays Ward, a large proportion of the population in the Balmoral Ward were European (61%) in 1996 (Figure 30). In addition, a large proportion of the population lived in the middle range of NZDEP96 deciles.

Figure 30: Population Profile of the Balmoral Ward, 1996

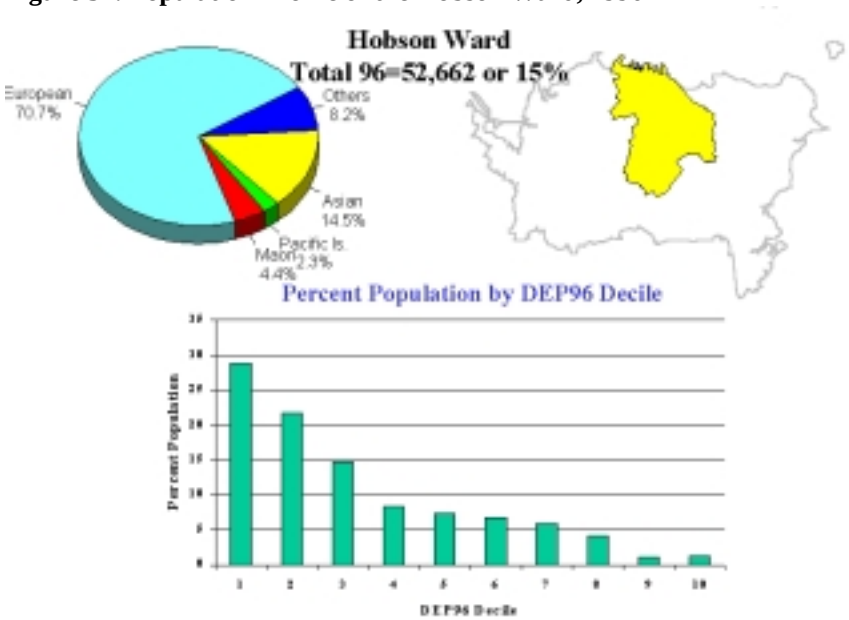


Data Source: 1996 Census

Profile of Hobson Ward

Figure 31 shows that approximately 71 percent of the population in this ward was European in 1996 and 15 percent of the ward population were Asian peoples. There were very few Maori and Pacific peoples in the Hobson Ward compared to other wards within the Auckland DHB zone. Note that over 75 percent of the population lived in low deprivation areas (decile 1 to 3) in 1996. That is, the majority of the population within this ward were very well off in comparison to other wards.

Figure 31: Population Profile of the Hobson Ward, 1996

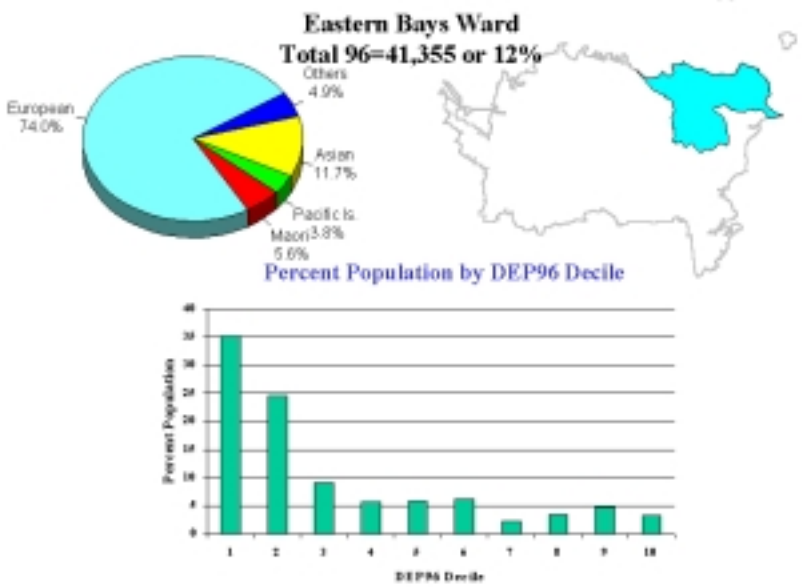


Data Source: 1996 Census

Profile of Eastern Bays Ward

Similarly to the Hobson Ward, about 74 percent of population in this ward were European and 12 percent were Asian peoples (Figure 32). Again, there were very few Maori and Pacific peoples living in the ward in 1996. As can be seen in the graph below, a very high proportion of the population in the area were very well off (decile 1 to 3) in comparison to other wards.

Figure 32: Population Profile of the Eastern Bays Ward, 1996

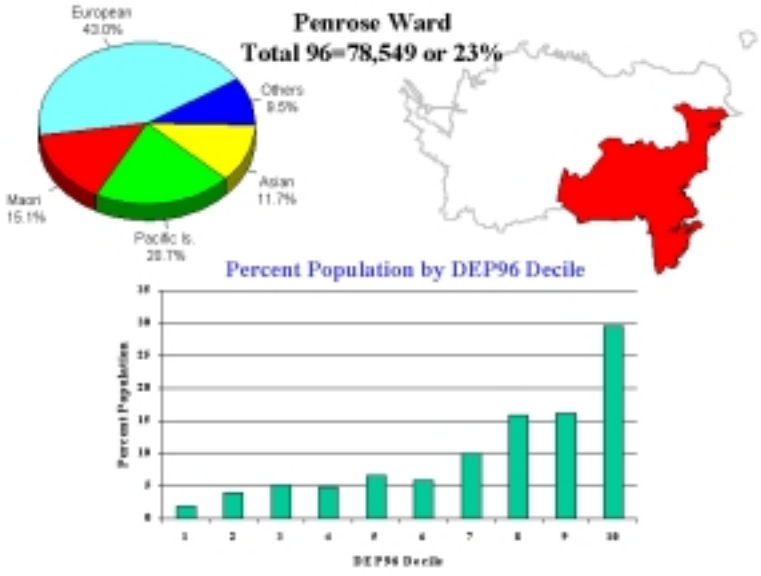


Data Source: 1996 Census

Profile of Penrose Ward

The Penrose Ward had the largest population of all seven wards within the Auckland DHB zone (Figure 33). Unlike the Eastern Bays and Hobson Ward, less than fifty percent of the population in this ward were European. About 21 percent were Pacific peoples, 15 percent were Maori and 12 percent were Asian peoples. A very high percentage of the population in this ward lived in highly deprived areas (decile 8 to 10) in 1996.

Figure 33: Population Profile of the Penrose Ward, 1996

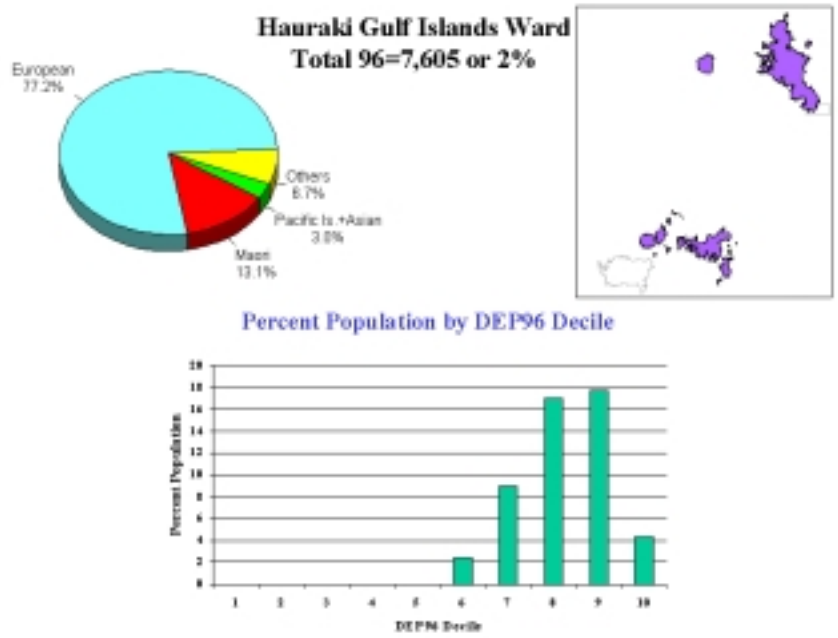


Data Source: 1996 Census

Profile of the Hauraki Gulf Islands Ward

This ward contained only two percent of the total Auckland DHB zone population and is a dispersed population, spread across the islands of the Hauraki Gulf. The relative isolation of some of these islands and the small size of their resident populations has important implications for health planning.

Figure 34: Population Profile of the Hauraki Gulf Islands Ward, 1996



Data Source: 1996 Census

Approximately 77 percent of the population in this ward were European and about 13 percent were Maori (Figure 34). There were very few Pacific or Asian peoples living in the ward in 1996 and less than one percent of the population lived within decile 1 to 5 areas. Most residents within this ward were living in highly deprived areas (decile 8,9,10) in 1996.

Clearly, there is a great deal of diversity between populations at the ward level, within the Auckland DHB zone. Whilst some wards are relatively well off in comparison to other wards, there are pockets of deprivation spread throughout the zone. In addition, although European peoples dominate each ward, there are varying concentrations of other ethnic groups within each ward.

The complexity of the population profile presented in this section of the report will present health planners with significant challenges. Indeed, existing differences and future changes to the population composition are likely to effect the actual need for specific services across the zone, over time, and effect the way in which these services are utilized. Each of these issues will need to be considered in the health service delivery planning process.

1.03 Health Status of the Auckland DHB Population

This section of the report provides a brief snapshot of the health status of people who live in the Auckland District Health Board (DHB) population zone. Because of the complex nature of measuring health and well-being, a range of different health measures are presented to provide insights into the overall health status of people in the community. The summary health measures, or indicators presented include both mortality rates and information on morbidity in the community, derived from public hospital discharges, Census data and survey data.

Whilst the emphasis is on comparing health status indicators between people who reside in the Auckland District Health Board funding zone and the total New Zealand population, age group and ethnic group sub-populations are provided where appropriate and where information is available.

Mortality

Information on mortality (deaths) in New Zealand is available from the death certification registry. Death, or mortality data, is generally very accurate in New Zealand and reasonably comprehensive as it includes information on the date of an individual's death, the cause of death, date of birth, occupation, place of residence, gender and ethnicity. Because of its comprehensive nature, mortality data can be explored in a number of different ways and is useful in providing valuable information about population health status and health trends over time.

All-cause mortality

Table 6 presents standardized all-cause mortality rates, by ethnicity, for people living in the Auckland DHB zone, 1996-98. The standardized rates presented are summary health status measures expressed as rates per 100,000 population.

Table 6: Standardized all-cause mortality (rates per 100,000 pop.) for Auckland and New Zealand, 1996-98.

	Auckland DHB	NZ
Pacific Peoples	1040.8	1041.0
Maori	995.5	1155.4
Other Peoples	678.5	692.0

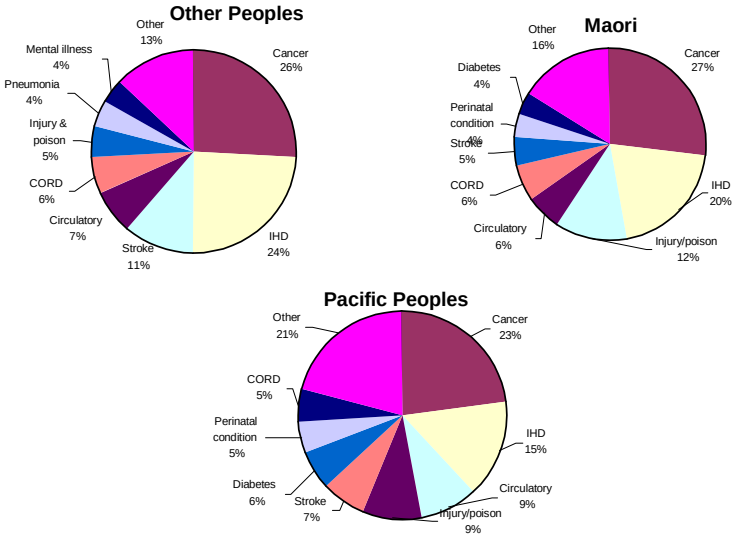
Data source: NZHIS
Standardized to NZ pop.

As can be seen, Maori and Pacific peoples all-cause mortality rates are very high in comparison to the rates for Other ethnicities in both Auckland and the total New Zealand population. Whilst the highest mortality rates are among Pacific peoples, the rate for Pacific peoples residing in Auckland is similar to the total New Zealand rate. This would indicate that the health status for Pacific peoples residing in Auckland is similar to that of Pacific peoples residing elsewhere in New Zealand.

The all-cause mortality rate among Maori residing in the Auckland DHB zone, however, is substantially less than the rate for all New Zealand Maori. This would indicate that although health status among Maori is not as high as health status enjoyed by Other ethnicities in Auckland, Maori in the Auckland community have higher health status than their counterparts elsewhere in the country.

Leading causes of mortality

Figure 35: % Leading Causes of Mortality for Auckland DHB, by Ethnicity, 1996-98.



Data source: Hill P et al, 2001.

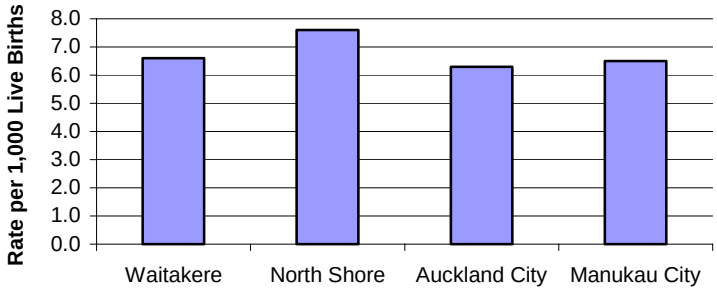
Cancer and ischaemic heart disease are the leading causes of death for all ethnic groups in the Auckland DHB population. There are however, significant variations in other leading causes of deaths between ethnic groups. For instance, injury and poisoning, perinatal conditions and diabetes featured more strongly in Maori and Pacific peoples than among peoples from Other ethnic groups.

Infant mortality

Mortality rates in infancy are commonly used as indicators of health in a population. Their popularity as summary measures of health is based upon the assumption that they are particularly sensitive to differences in socio-economic status and healthcare interventions.

Infant mortality rates are presented in Figure 36 for each of the cities in the Auckland region for the period 1996-1997. This figure is calculated by dividing the total number of infants that die in the first year of life by the total number of live births per year. The fraction is expressed as a rate per 1,000 live births per year.

Figure 36: Infant mortality (rate per 1,000 live births) for Auckland cities, 1996-1997.



Data Source: ACC, 2001.

As can be seen, the infant mortality rate for Auckland City is lower than the rates presented for each of the other cities in the Auckland region.

Perinatal rates are presented for both the Auckland DHB population zone and the total New Zealand population in Table 7. This mortality indicator is derived using the total number of infants that die within the first seven days following birth and is also expressed as a rate per 1,000 live births. The table shows that Maori suffer higher rates of perinatal mortality than non-Maori in both the New Zealand and Auckland DHB populations. However, this disparity appears to be much more pronounced among Maori residing in the Auckland DHB zone.

Table 7: Perinatal mortality (rates per 1,000 live births) for Auckland and New Zealand, 1996-98.

	Auckland DHB	NZ
Maori	10.9	7.7
Non-Maori	6.8	7.0

Data source: NZHIS

Life expectancy at birth

Life expectancy at birth is also commonly used as an indicator of population health status. It is defined as the average number of years a newborn is expected to live, if current mortality rates were to continue.

Table 8 shows life expectancy estimates at birth for residents of the Auckland DHB zone and the total New Zealand population. As can be seen, females have a greater life expectancy than males in both populations and female life expectancy is very similar between both groups. In comparison, males in the national population are expected to live, on average, slightly longer than males residing in the Auckland DHB zone.

Table 8: Life expectancy at birth for Auckland and New Zealand populations.

	Auckland DHB	NZ
Male	73.9	74.3
Female	79.8	79.6

Data sources: Walker R, 2001.

Morbidity

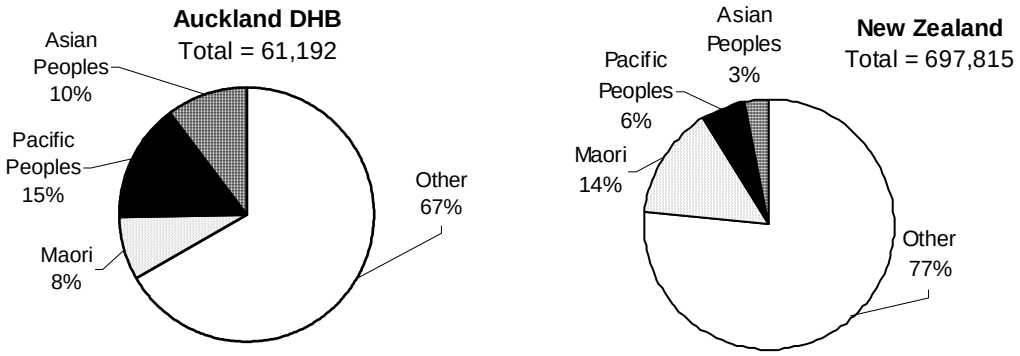
Information on morbidity, or illness, is often used in conjunction with death data (mortality information) in assessing population health status. In this section, information about people who are first admitted and then discharged from public hospitals is used as a measure of morbidity (this type of information can also be used to inform about access by the community to health services and health service utilization). These hospitalizations are officially recorded and presented here as public hospital discharges.

Estimates of the prevalence of illness and injury are also presented in this section. These estimates have been obtained from survey data and provide information about health and well being in the Auckland community that is complimentary to the more traditional measures of population health status.

Public hospital discharges

Figure 37 presents public hospital discharges for residents of the Auckland DHB zone and the total New Zealand population, by ethnic group. As can be seen, the majority of discharges for both the Auckland DHB and New Zealand populations occurred among Other ethnicities in 1999/00. This is not surprising as this category includes the majority of the population.

Figure 37: %Public Hospital Discharges, by Ethnicity, for Auckland DHB and New Zealand populations, 1999/00.



Data source: Walker R, 2001.

There are some marked differences in ethnic discharge proportions between the Auckland DHB and New Zealand populations, especially among the Maori, Pacific and Asian peoples. To a large extent these disparities are due to the difference in ethnic composition of the populations of interest. For instance, a greater proportion of the Auckland DHB population identify as Pacific peoples (12%), compared to the New Zealand population (5.6%). Thus, Pacific peoples comprised a greater proportion of all Auckland DHB public hospital discharges (15%) in 1999/00, compared to the proportion for all New Zealand (6%).

Table 9: Public hospital discharges (rates per 100,000 pop.) for specific diseases for Auckland DHB and New Zealand populations, 1996-98.

Disease	Auckland DHB	New Zealand DHBs (median rate)
Alcohol related	52.3	71.5
Diabetes	73.6	89.6
Injury	1726.4	1785.9
Ischaemic heart disease	583.7	778.0
Stroke	259.2	261.3
Cancer	943.8	1172.0
Suicide attempt	73.8	77.4

Data source: Hill P, 2001.

Table 9 illustrates public hospital discharge rates for Auckland DHB residents, compared to rates for the New Zealand population. As can be seen, the rates for the Auckland DHB population are relatively low in comparison to the median rates for all New Zealand DHBs.

Prevalence of illness and injury

Information on the prevalence of illness and injury in the population has been obtained for two separate time periods. The data were collected in a general population health survey that

measured the prevalence of illness and injury in the population retrospectively over a 12 month and one month period.

Table 10 shows the percentage of the population experiencing illness or injury during these two time periods, for the four Northern-most DHBs in 1996/97.

Table 10:Prevalence (% pop.) of illness/injury in the last month and last 12 months by DHB, 1996/97.

	% suffering illness/injury in last month	% suffering illness/injury in last 12 months
Northland DHB	47.3	73.7
Waitemata DHB (North Shore pop)	36.2	62.6
Waitemata DHB (West Auck. pop)	40.3	69.5
Auckland DHB	31.4	73.2
Counties-Manukau DHB	36.6	68.1

Data source: Parr A et al, 1998.

The results show that over the month preceding the survey, the lowest rates of illness and injury in the Northern New Zealand DHB populations were observed in the Auckland DHB population. However, over the twelve-month period preceding interview, 73.2 percent of the Auckland DHB population recalled at least one episode of illness or injury. This rate was second only to the rate observed in the Northland population.

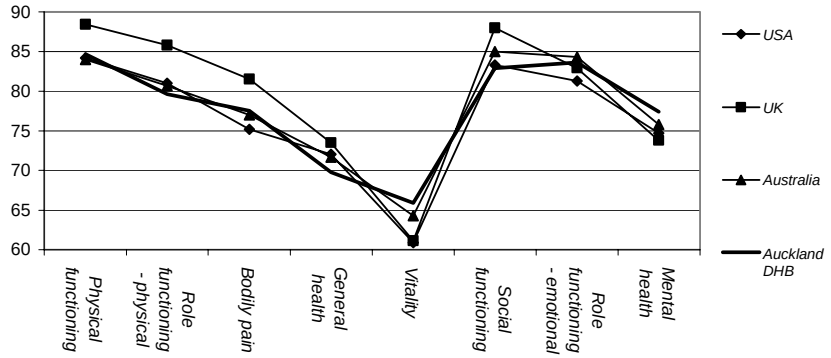
Self-Perceived Health Status

Many population health status measures are derived from routinely collected health service information. A more direct source of information on health status that can also be used as an indicator of health in a population, is obtained by asking people themselves how they perceive their health and well being.

Self-perceived assessments of health status provide important insights into how different individuals and groups of individuals both value and rate their existing quality of life. More direct methods of health status measurement are increasingly being utilized in larger population assessments of health status.

The Medical Outcomes Short-form 36 (SF-36) questionnaire was used to measure self-perceived health status in the adult Auckland DHB population in 1996/97. Figure 38 presents average scores for eight separate aspects of health and well being for people residing in the Auckland DHB zone. These self-perceived scores are compared to scores from the USA, UK and Australia.

Figure 38: Average SF-36 Scores for Auckland DHB, UK, USA and Australia.



Data source: Parr A et al, 1998.

The graph in Figure 38 shows that average SF-36 scores for the Auckland DHB are very similar to those from the UK, USA and Australia. The average 'general health' and 'vitality' scores are consistently low between populations and the 'physical functioning' and 'social functioning' scores are consistently high. Auckland DHB residents scored lower on 'role functioning-physical', 'general health' and 'social functioning', whilst scoring highest in the areas of 'vitality' and 'mental health'.

Future Tasks:

- Review overall Auckland DHB population profile once 2001 Census data becomes available;
- Review Auckland DHB population composition at ward level, once 2001 Census data becomes available;
- Review Auckland DHB population socio-economic characteristics and deprivation levels, once 2001 Census data and NZDEP2001becomes available;
- Recalculate population projections and explore population growth factors, once 2001 Census data becomes available;
- Review and update key population health status indicators overtime.