Auckland District Health Board

Health Needs Assessment | 2020

AUCKLAND
DISTRICT HEALTH BOARD
Te Toka Tumai

Contents

1 Executive Summary

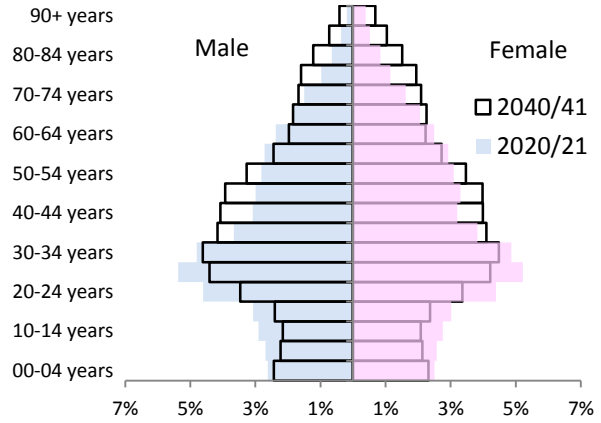
DHBs are required to regularly investigate, assess and monitor the health status of their resident population, and their need for services. The health needs assessment forms an integral part of the overall planning cycle, informing both funding decisions and the strategic planning process. We used data from a wide range of sources to provide a picture of the health status and needs of our population. With this information, the District Health Board (DHB) can plan future health services and health programmes to ensure the best health outcomes for all the people in our region.

1.1 Our population is diverse and growing

Auckland DHB serves the population resident on the Auckland isthmus and the islands of Waiheke and Great Barrier. It is an area of stunning natural beauty. Residents enjoy easy access to green spaces, parks and beaches. Auckland ranks highly among surveys of the world's most liveable cities.

Auckland DHB contains approximately 507,370 people, making it the fourth largest DHB in New Zealand. We have an ethnically diverse population, with 8% Māori, 11% Pacific, 34% Asian and 47% European/Other. Almost half (45%) of our population were born overseas. The age composition of Auckland residents is somewhat different from the national picture, with 34% in the 25-44 year-old group, compared with 27% in this age group nationally. Auckland has 12% of its population in the 65+ year-old group, compared with 16% nationally.

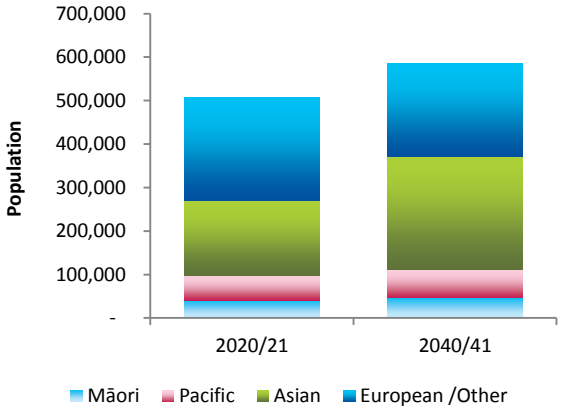
Our population includes large numbers of young adults



Many factors affect the health of individuals and communities. Whether people are healthy or not is determined for the most part by an individual's socio-economic circumstances and their environment. While Auckland's population enjoys a high median income, home ownership is increasingly unaffordable. Over-crowding is more common than in New Zealand overall and especially affects Māori, Pacific and Asian families. Our Māori and Pacific populations have lower rates of educational achievement and higher rates of unemployment. Air pollution from motor vehicles and domestic fires causes around 100 premature deaths per year. Improving the wider determinants of health requires a co-ordinated approach between many agencies and services.

Significant population growth is expected in the future. The population is projected to increase by 16%, reaching 587,000 by 2040/41. The population will also be considerably older, with the number of people aged 65 years and older expected to increase from the current 61,500 to approximately 105,000, and making up 18% of our population, compared with 12% at present. Our Māori and Asian populations will also grow: our Māori population by 14% and Pacific by 15%; our Asian population is projected to grow by 50%. We need to plan and develop our services to meet the needs of this expanding and changing population. We also need to work with other public agencies and services to improve the wider determinants of health, such as housing, education and the physical environment, as well as improving access to health services.

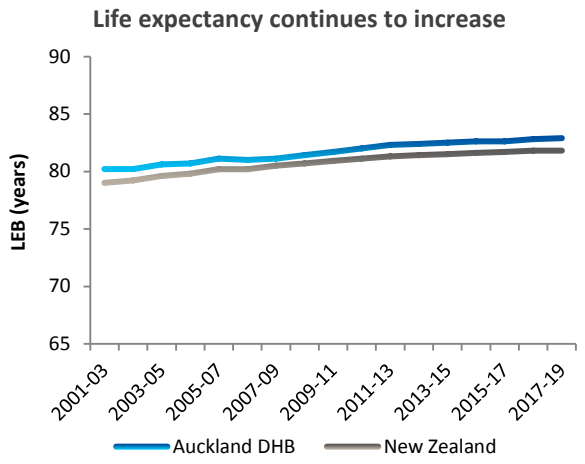
Our population will grow over the next 20 years



1.2 Our population is healthy and health is improving

We have similar health outcomes to New Zealand as a whole, with a life expectancy of 82.9 years, 1.1 years longer than the national figure. The self-reported health status of our population is 'excellent' and we continue to see positive health outcomes overall. Our mortality rates from cardiovascular disease and cancer, the two biggest

causes of avoidable deaths, have declined steadily over the last decade.



The children in our area experience a great start to life, with infant mortality lower than the national rate and very high immunisation rates, as 93% of our 8 month-old children and two year-old children are fully immunised.

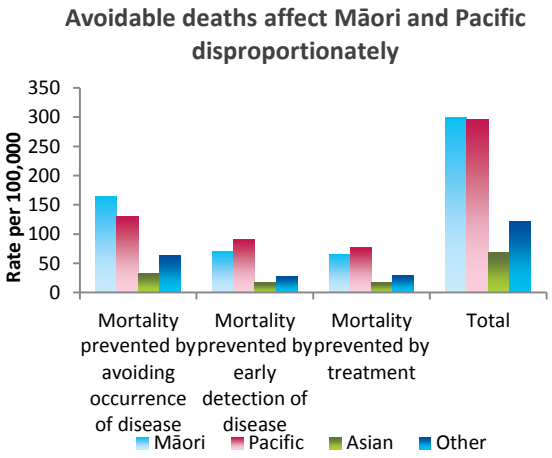
We are seeing positive improvements in many lifestyle risk factors, and identifying these risks earlier. Smoking, the largest cause of preventable ill health, declined substantially between 2006 and 2018, with rates falling from 16.5% to 10% of adults. We now have the lowest rate of smoking of any DHB in the country. This will support improvements in health for many years to come.

Our population experiences more positive mental health than New Zealand as a whole, with our self-reported diagnosed rate of anxiety and depression lower than the national rate. Our older population also experience positive health outcomes. The majority of our older population are able to live unassisted in their own homes. Many older people continue to work after reaching the age of 65 years, which is reflective of an overall positive health status.

1.3 Our key health challenges

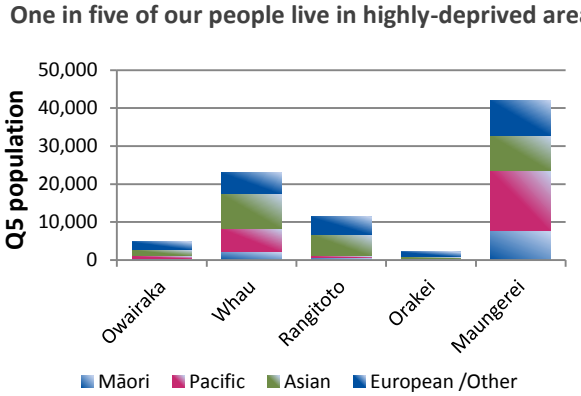
Although the majority of our people enjoy very good health, particular population groups in our district experience inequalities in health outcomes. With better prevention of ill health, we could further reduce avoidable deaths and increase the number of healthy years of life for our residents. In 2018, there were 614 potentially avoidable deaths of Auckland residents (24% of the total), 33% of which are among our Māori and Pacific populations. Of these deaths, half could have been avoided through primary prevention, for example through adopting healthier lifestyles; a quarter could have been prevented by identifying and managing problems like hypertension before they caused illness; and a quarter could have been avoided through prompt identification and treatment. We also need to plan and develop health services to respond to the significant growth and changes to the population in our district.

In 2020, the COVID-19 pandemic severely disrupted health services. As a result, the information in this document is representative of historic patterns of service, but in 2020 the picture was very different.



1.3.1 *Reduce inequalities in health*

Although overall life expectancy is rising for Māori and Pacific people, there remains a gap between Māori and Pacific life expectancy and that of non-Māori non-Pacific people of 6.2 years for Māori and 7.3 years for Pacific people. Māori and Pacific people have hospitalisation and mortality rates from many chronic diseases two to three times higher than our European/Other population. The main drivers of this equity gap are circulatory disease, cancer, diabetes, respiratory disease and injuries.

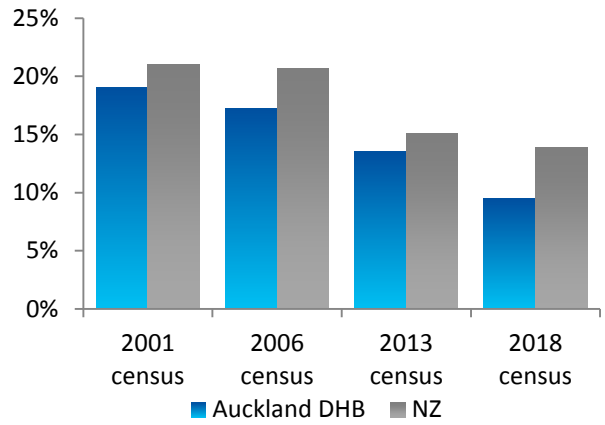


Nearly 20% of our population lives in areas ranked as highly deprived (Quintile 5 of the NZ deprivation score), concentrated in Rosebank/Avondale in the west, Mt Roskill and the CBD and the eastern and southern areas from Glen Innes to Mt Wellington and Otahuhu. These residents generally experience poorer health outcomes than those living in more affluent areas.

1.3.2 *Support healthier lifestyles*

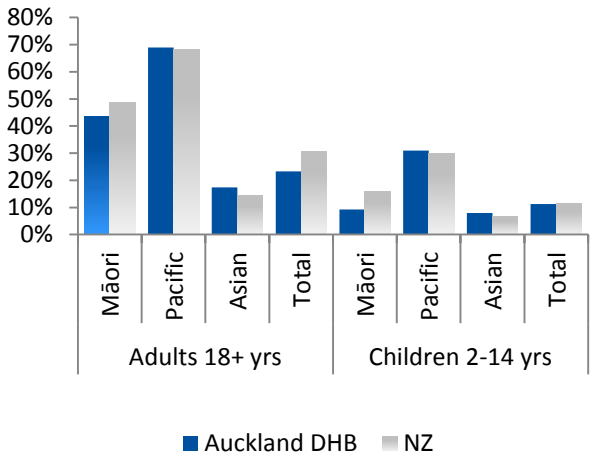
Although smoking rates are declining, 10% of our adult population are regular smokers of cigarettes, with higher rates in our Māori (23%) and Pacific (20%) populations. Progress has been made with over 95% of all smokers accessing health services receiving brief advice to quit; however, more can be done to back this up with effective support.

Smoking rates are low and declining



Data from the New Zealand Health Survey reports that one in five of our adults are obese and over half are overweight, with very little change in the past ten years. The rate of childhood obesity in our Pacific populations is high, with 32% of Pacific 2-14 year olds considered to be obese. Fewer than half of our population are meeting daily exercise recommendations and two in three are not meeting daily fruit and vegetable consumption guidelines. Our district's rate of hazardous alcohol consumption when compared with the national rate is slightly lower across all ethnicities, except for European/Other.

One in five adults and one in ten children are obese



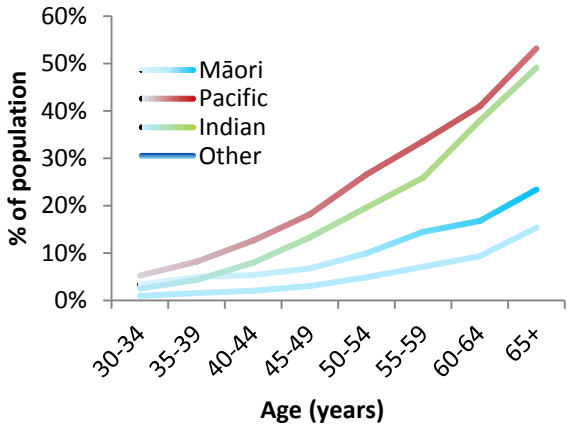
1.3.3 *Effective management of cardiovascular disease and diabetes*

Cardiovascular diseases are the largest cause of death and as much as 70% of cardiovascular disease is avoidable. Although our risk assessment rates are high (92% of eligible adults), only 52% of eligible cardiovascular disease patients are on triple therapy. Although the rate of triple therapy is increasing, many more patients could potentially benefit from pharmacological treatment than is currently the case. We need to ensure that those identified as being at high risk of disease, as well as those with existing disease, are well-managed and receive prompt treatment.

In 2019, nearly 800 Auckland residents were admitted to hospital following a stroke. The mortality rate from stroke is 27 per 100,000, which is higher than the New Zealand average (24). Prompt assessment together with effective targeted treatment and rehabilitation is essential in providing the best outcomes for these patients.

The number of people with diabetes has increased by 8,000 since 2010 and this is now estimated to affect 26,500 (5.3%) of our population. There is room for improvement in supporting people with diabetes to manage their key risk factors, such as blood pressure and blood sugar levels, and to attend retinal screening. Around 62% people with diabetes aged 15-74 years are known to be well-managed (defined as having an HbA1c of <64 mmol/mol). In the last two years, only 52% of people with diabetes received the recommended retinal screening in the public sector. In 2016, 19.5% of medical/surgical bed-days were for people with diabetes. For both cardiovascular disease and diabetes, Māori and Pacific carry a heavier burden than other ethnicities.

Diabetes affects 5.3% of our population overall, but 12% of our Pacific and 8% of our Indian people



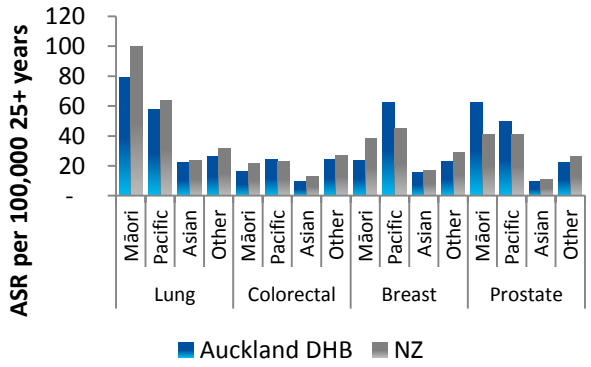
1.3.4 *Rapid identification and treatment of cancer*

There are 2,070 new cancer registrations in Auckland every year. Cancer causes 27% of all deaths with the most significant being breast (in women), lung and colorectal cancers, and prostate cancer (in men). Around 30-35% of cancers are caused by modifiable risk factors and are avoidable. Early detection and prompt diagnosis and treatment can reduce mortality and morbidity from cancers. Our five-year survival rate from all cancers is 69%, the highest in the country. However, if Auckland DHB had the same five-year survival rates as Australia, 25% of women who die of breast cancer within five years would survive for longer (7 per year). Similarly, 13% who die of bowel cancer within five years would survive for longer (8 per year). For melanoma, the difference is 46% (11 per year) and for non-Hodgkin lymphoma, it is 25% (5 per year).

Public screening programmes for breast and cervical cancer are well-established; despite this, one quarter of all eligible women do not participate. Screening rates are low in Māori with only 53% of eligible women participating in cervical screening and 59% in breast screening. Asian women also have low rates of cervical screening at 51%.

To support continued improvement in services and waiting times for people with cancer, accessing faster cancer treatment is a key priority. As at March 2019, 92% of cancer patients waited less than 62 days for treatment or other care to commence compared with the target of 90%.

Lung, colorectal, breast and prostate cancer are major killers



1.3.5 *Access to Mental Health services*

Mental ill-health affects one in five people each year and the New Zealand health survey identified one in eight of our residents (equivalent to around 43,000 people) as suffering from common mental illnesses. Around 3.5% of our population (17,000 people) are accessing secondary mental health services with this rate increasing yearly. Māori are particularly affected by mental health conditions, being twice as likely as Europeans/Others to access services. Pacific people report anxiety and distress twice as often as Europeans/Others, but do not access mental health services proportionately. While our suicide rate is lower than the national rate, we lose 44 people each year to suicide.

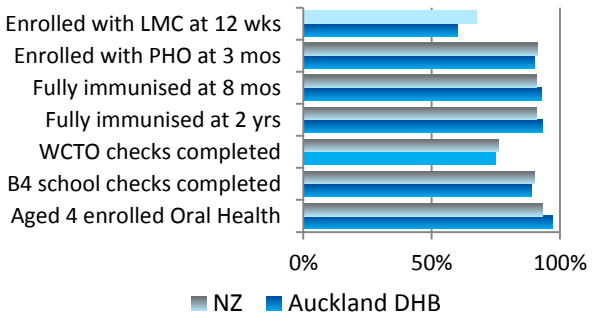
Mental illness is also associated with reduced life expectancy, with sufferers at increased risk of other illnesses, particularly cancer and cardiovascular disease. Even when these disorders are recognised, rates of intervention are lower for this population compared with people without mental illness.

1.3.6 *Give children the best start to life*

The well-being of children is critical to the well-being of the population as a whole. Healthy children are more likely to become healthy adults. Our overall infant mortality rate is lower than the national rate; however, rates in Māori and Pacific are higher than for European/Others. Four in ten of our pregnant mothers are not enrolled with a lead maternity carer (LMC) at 12 weeks of pregnancy and addressing this would improve outcomes for both mothers and babies. The percentage of children enrolled with a PHO by three months of age (90%) is similar to the national figure (91%), but is lower in Māori children (75%).

We are close to achieving our immunisation target of 95% at ages 8 and 24 months, with 93% of children fully immunised at 8 months and 93% of children fully immunised at 24 months. We are below target for completion of core Well Child/Tamariki Ora checks in the first year of life, but 89% of four-year-olds receive comprehensive health checks before school entry.

Healthy children become healthy adults



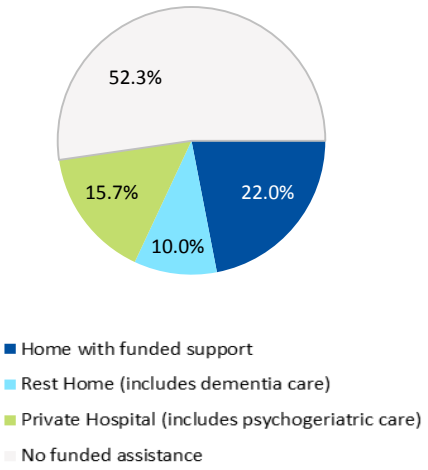
Children are admitted to hospital most commonly for injuries, gastroenteritis, asthma and infections. In 2012/13, there were 21.5 admissions per 100,000

population aged 0-14 years for injuries resulting from domestic assault, neglect or maltreatment of children. The incidence of rheumatic fever (3.9 per 100,000 population) is higher than the national average, and significant inequalities are present for Māori and Pacific populations.

1.3.7 *Older people*

The large majority of older people in Auckland DHB are able to live unassisted in their own homes. Over half (52%) of people who are 85 years or older receive no funded living assistance, while 26% are funded to live in a rest home or private hospital and 22% have some funded support at home. Older people have greater needs for health services and hospital care and occupy about 45% of our medical/surgical beds. With the projected increase in the population aged 65 years and over, meeting the associated increase in demand for health care will be challenging.

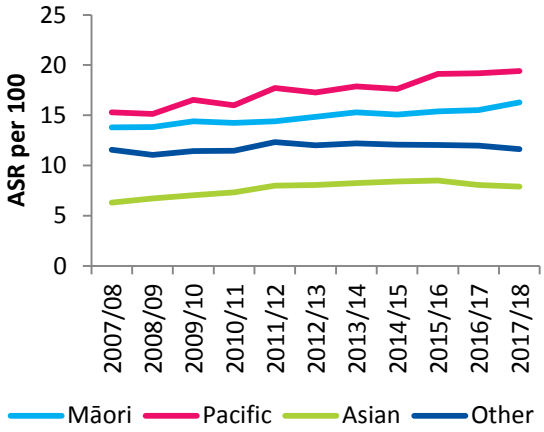
Over half of people aged 85+ years live with no funded support



1.3.8 *Meeting future health needs*

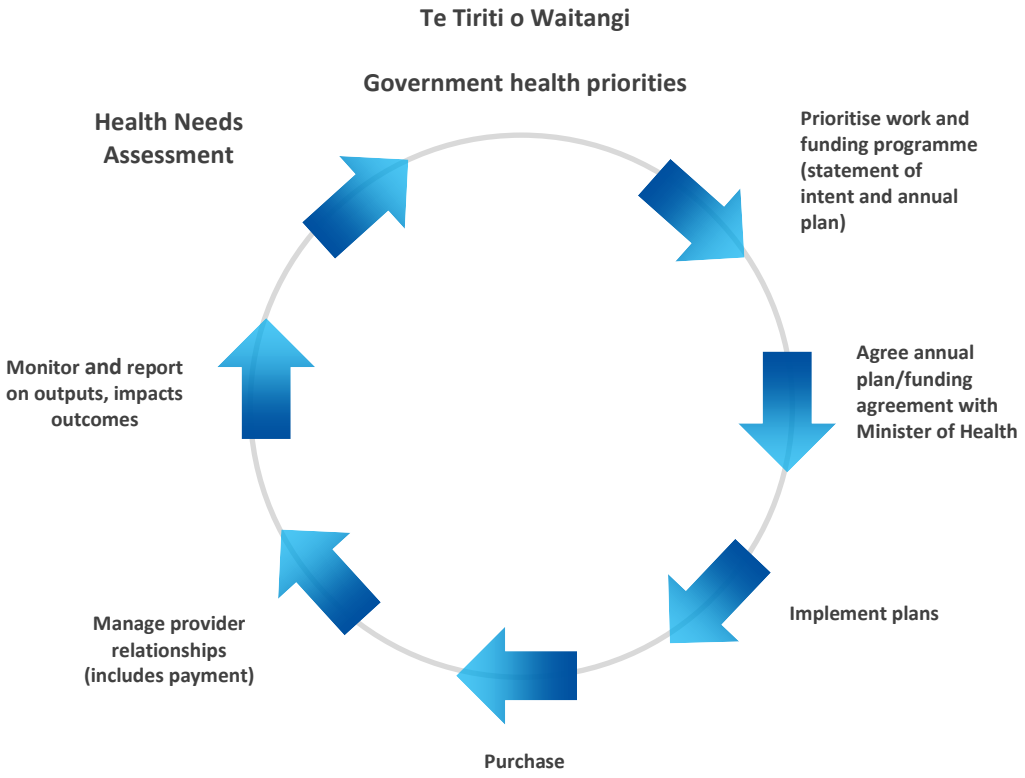
Between 2007/08 and 2017/18, acute admissions remained the same and people attending ED increased by 8% for Auckland residents, after allowing for population ageing and growth. However, the absolute numbers increased by 23% and 33%, respectively. Future population growth and constraints on funding will place pressure on hospital services. Furthermore, climate breakdown has serious implications for our health, wellbeing, livelihoods, and the structure of organised society. We therefore need to plan and develop hospital services to manage this demand. Fully integrated services with a focus on prevention and good access to primary care services will be essential to meet the future health needs of the population.

Demand for emergency department services is increasing



2 Introduction

DHBs are required to regularly investigate, assess and monitor the health status of their resident population, and their need for services. The purpose of needs assessment is to bring about change beneficial to the health of the population. The needs assessment forms an integral part of the overall planning cycle, informing both funding decisions and the strategic planning process.



It is envisaged that this needs assessment will be a living document and its content regularly updated as new data become available. It forms part of a suite of resources that includes needs assessments and health plans for population subgroups.

For key topic areas, we will undertake more detailed assessments and these will be published as separate documents. For further information, contact the Planning and Health Intelligence Department, Auckland and Waitematā DHBs.

2.1 Equity

Through assessing the health needs of our population, we can identify and reduce inequalities, and produce better health outcomes for the population as a whole. In this assessment, we concentrate on describing the health of Auckland residents compared with that of New Zealand overall, and on highlighting inequalities within the district and between particular groups of the population. This helps to guide the DHB's equity framework, under which the DHB selects high-level outcome measures where equity gaps exist and aims to reduce these gaps in the medium term.

2.3 Needs assessment and Māori

Government health priorities guide health sector development. These include acknowledging the special relationship between Māori and the Crown under Te Tiriti o Waitangi. In Auckland, this is particularly recognised in the relationship between the DHB and Te Rūnanga o Ngāti Whātua. The principles of Te Tiriti o Waitangi (partnership, participation and active protection) apply to health and health service provision. Article 3 of Te Tiriti o Waitangi provides for equal rights for Māori with non-Māori. While many Māori in Auckland enjoy better health than Māori in other parts of New Zealand, and Māori life expectancy in Auckland DHB is almost 78 years, 1.9 years above the national average for Māori across New Zealand (76 years) at birth (2017-19), inequalities in health outcomes for Māori are still apparent in this DHB when compared with non-Māori. Government health priorities specifically focus on addressing Māori health outcomes and reducing health inequalities.

In partnership with Waitematā and Northland DHBs, we established a new Māori health committee with our iwi partners to collaboratively achieve Māori health equity and advance Māori health gain. The Northern Iwi-DHB Partnership Board is called Kōtui Hauora.

A Māori Health Pipeline was set up to accelerate projects that address inequities in life expectancy and/or have significant potential for Māori health gain. While primarily focused on projects in Auckland and Waitematā DHBs, some extend to or are specific to Counties Manukau and Northland DHBs.

Undertaking health needs assessments has a number of implications:

- *Wherever possible, we provide information on Māori health needs as well as the health needs of the general population.*
- *We need to ensure that collection of data about Māori is as accurate as possible. In particular this means we need to ensure that ethnicity recording is accurate. This is an area of ongoing work and improvement for Auckland DHB.*
- *We need to report information that describes health from a Māori world view as well as a mainstream world view. This is very challenging because almost all of the information in this document is derived from routinely collected data sources. These data sources have limited information on a broad perspective of health (rather than disease) and even more limited information that describes some perspectives that are important to Māori. We recognise this limitation and the need to attempt to address this in on-going work.*
- *We need to specifically address Māori health needs rather than simply doing so in the context of assessing the needs of the overall population. We need to involve the Māori community in the development of health needs assessments. This was not done in the development of this document but development of Māori Health Needs Assessment for Auckland DHB in the future will factor in the engagement and involvement of Māori in the community.*

3 Our Population

Auckland DHB serves the population residing on the Auckland isthmus and the islands of Waiheke and Great Barrier. It is an area of stunning natural beauty. Residents enjoy easy access to green spaces, parks and beaches, and Auckland ranks highly among surveys of the world's most liveable cities. At the same time, it ranks as the fourth least affordable city in the world for housing (Demographia 2017). The Auckland Council divides the area between several local boards; these are:

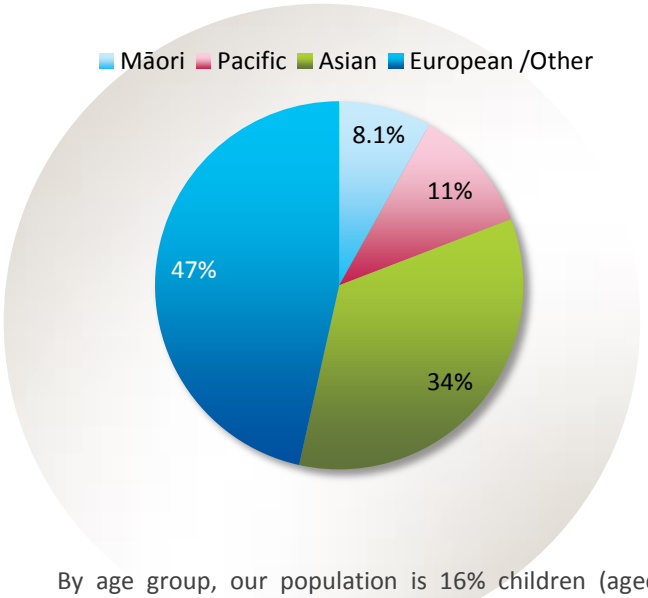
- **Waitematā**, *stretching from Westmere in the west to Parnell in the east and including the central business district and the suburbs of Western Springs, Grey Lynn, Arch Hill, Newton, Herne Bay, Ponsonby, St Marys Bay, Freemans Bay, Eden Terrace, Grafton and Newmarket;*
- **Albert-Eden**, *covering from coastal Pt Chevalier in the west across to Greenlane and including Mt Albert, Mt Eden, Waterview, St Lukes, Balmoral, Sandringham, Morningside, Kingsland, and Epsom;*
- **Orakei**, *covering Remuera, Ellerslie, Meadowbank, St Johns, Ōrākei, Mission Bay, Kohimarama, Saint Heliers and Glendowie;*
- **Puketapapa**, *bordering the Manukau Harbour, including Three Kings, Mt Roskill, Hillsborough, Waikowhai, Lynfield and Wesley;*
- **Maungakiekie-Tāmaki**, *which covers an area from the Tamaki estuary west across to the inner Manukau Harbour and includes Glen Innes, Point England, Tamaki, Panmure, Mount Wellington, Penrose, Onehunga, Te Papapa and Royal Oak;*
- **Whau (part)** *in the west of the isthmus, with the suburbs of Kelston, Rosebank, New Lynn, Avondale, New Windsor, Blockhouse Bay and Green Bay;*
- **Otahuhu**, *part of the Otahuhu-Mangere local board area;*
- **Waiheke Island**;
- **Great Barrier Island**.

There are 507,370 people living in the Auckland district in 2020/21, accounting for just under 10% of the national population. The age composition of Auckland residents is somewhat different from the national picture, with 34% in the 25-44 year-old age group, compared with 27% in this age group nationally. Auckland has 12% of its population in the 65+ year-old age group, compared with 16% nationally.

By ethnicity, our population is 8% Māori, 11% Pacific, 34% Asian and 47% European/Other. Just over one-third of Māori and Pacific people live in the south-east of the district in Maungakiekie-Tamaki, with two-thirds spread across the remainder of the district. Half of our Indian population lives in the south-west in Puketapapa and Whau, while our Chinese and other Asian population is fairly evenly spread, although more sparse in the south-west. Seventy percent of the European/Other population live in the north/central wards of Waitematā, Orakei and Albert/Eden. Our Pacific population is predominantly Samoan (43%), Tongan (31%) and Cook Island Māori (13%). Our Asian population is diverse, but is predominantly Chinese (39%) and Indian (34%). Auckland's population is urban, with only 0.2% of our population living in rural areas (Great Barrier Island). (Source: Statistics New Zealand, population projections, updated 2019, excluding results of 2018 census post-enumeration survey.)

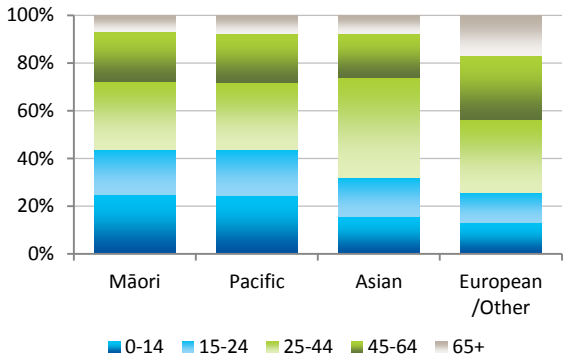
Localities: these are geographic areas used by the DHB for service delivery and are groupings of Auckland Council local boards. **Owairaka** = Albert-Eden board; **Rangitoto** = Waitematā + Waiheke + Great Barrier Island boards; **Orakei** = Orakei board; **Whau** = Puketapapa board plus the part of Whau board that falls within Auckland DHB; **Maungarei** = Maungakiekie-Tamaki board plus the part of Mangere-Otahuhu board that falls within Auckland DHB.

Figure 3.1: *Ethnicity of our population 2020/21*



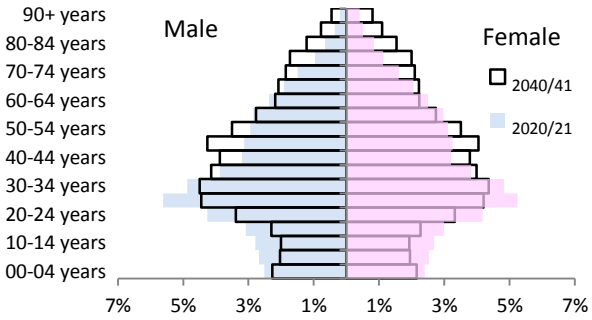
By age group, our population is 16% children (aged under 15 years), 15% young people (15-24 years), and 12% older people (65 years or older). However, our Māori, Pacific and Asian populations are considerably younger, with 43% of Māori and Pacific and 31% of Asians under the age of 25, compared with 25% for European/Other people. These populations are also notable for the small proportion of older people they contain, at 8% or less of their total populations, compared with 17% aged over 65 years for European/Other people.

Figure 3.2: *Age structure by ethnic group*



By 2040/41, Auckland's population is projected to increase by 79,000 people, making it 16% larger than it is now. The population will also be considerably older, with the number of people aged 65 years and older expected to increase from the current 61,500 to approximately 105,000, and making up 18% of our population, compared with 12% at present. Our Māori and Asian populations will also grow; our Māori population by 14% and Pacific by 15%; our Asian population is projected to grow by 50%. We need to plan and develop our services to meet the needs of our changing and expanding population.

Figure 3.3: *Age structure of Auckland DHB in 2020/21 and 2040/41*



Source: Statistics NZ Population projections 2020 aligned to 2018 census

Figure 3.4: *Projected change in Auckland DHB population aged >65 years, 2040/41*

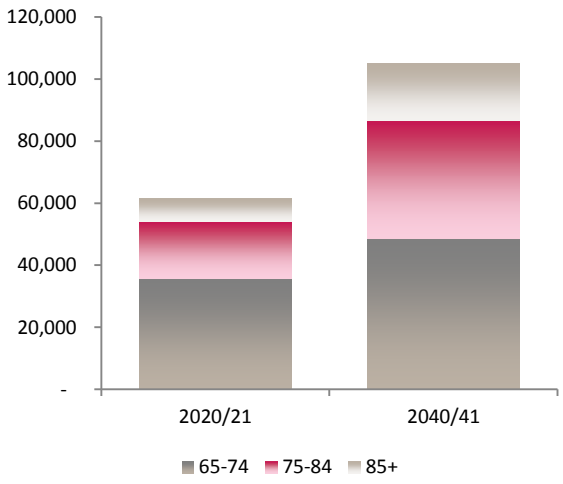
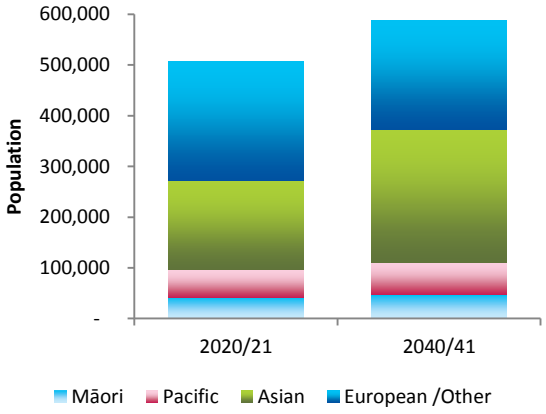


Figure 3.5: *Projected change in Auckland DHB population by ethnicity, 2040/41*



Source: Statistics NZ Population projections, 2020 set aligned to Census 2018

Figure 3.6: *Population by locality and age group, 2020 estimated resident population incl. PES results*

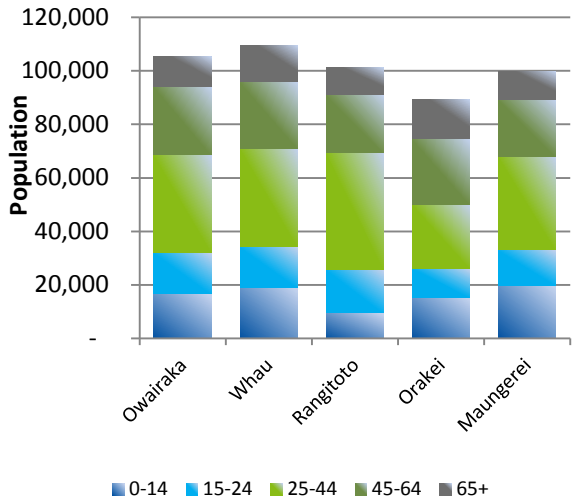
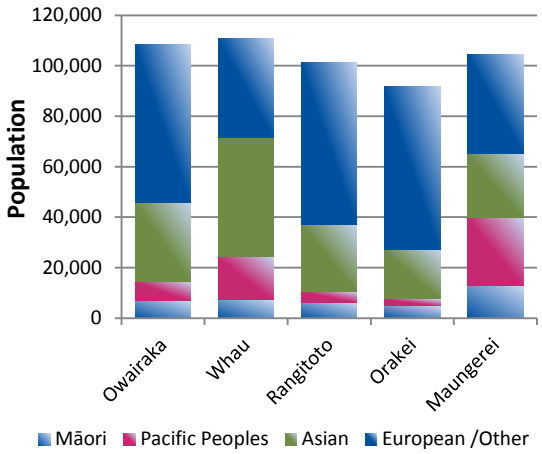


Figure 3.7: *Population by locality and ethnic group, 2018*



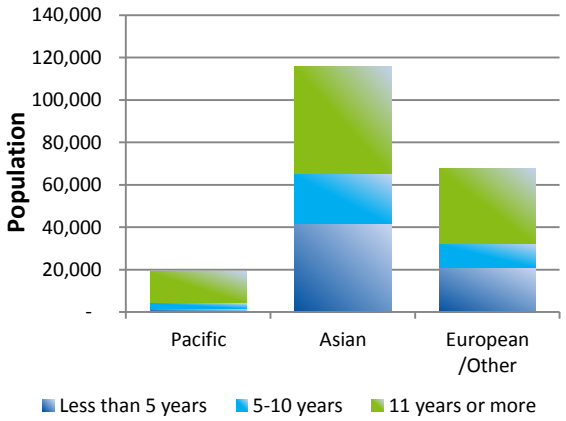
3.1 Migrants

Auckland DHB has a large migrant population. Almost half of Auckland residents (45%) were born overseas (compared with 31% nationally, and 20% for areas outside of Auckland region). This includes 58,300 people of European/Other ethnicity, 21,000 Pacific people and 119,000 Asian people; as a percentage, 81% of Asian people, 41% of Pacific people and 27% of people of European/Other ethnicity were born overseas. Of these migrants, 32% have lived in New Zealand for less than 5 years.

English language ability is important for participation in New Zealand society. Among Auckland's adults in 2018, an estimated 4.5% (21,000 people) could not hold a conversation in English about everyday things. Outside of Auckland region, 10% of people speak both English and another language (other than Māori), but in Auckland DHB this rises to 30%. The Auckland DHB Interpreting Service provides face-to-face and telephone conference call interpretation, appointment confirmation and document translation, in both primary and secondary health care settings, to assist this group to access health services.

Available evidence suggests that both former refugee and current asylum seekers including those from transgender, non-binary and gender diverse backgrounds face significant barriers to accessing primary care, mental health and addiction, pharmacy, oral health and maternity services. Key barriers to accessing health services include varied levels of resettlement support, difficulty accessing language services, financial and transport stressors, lack of knowledge of the health system, cultural competence of the health workforce, discrimination and lack of awareness within health services of refugee and current asylum seeker unique needs and experiences.

Figure 3.1.1: *Number of migrants living in Auckland by duration of residence, 2018*



Source: Census 2018 Usually Resident population

4 Population Health Drivers

Many factors affect the health of individuals and communities. Whether people are healthy is determined, for the most part, by an individual's socio-economic circumstances and their environment. To a large extent, factors such as where we live, the state of our environment, genetics, our income and education level and our relationships with friends and family all have considerable impact on health, whereas the more commonly considered factors such as access and use of health care services often have less impact. Most of the information in this section is taken from the 2013 census, NZ Health Survey pooled results for 2011-2013, and from the Quality of Life (QoL) Survey 2012 (note: QoL data includes all of Whau and Mangere-Otahuhu wards).

4.1 Ethnicity

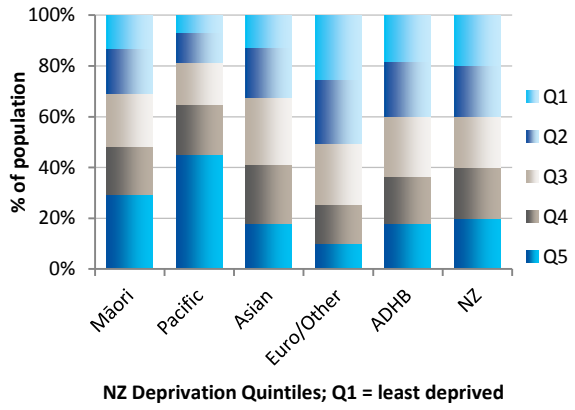
Ethnicity is a critical component of health inequalities. Māori and Pacific people have had consistently poorer health than other ethnic groups since the 19th century. Although this is linked to socio-economic status, both populations still have poorer health when factors such as income, occupation, education, neighbourhood and personal behaviour are accounted for. Explanations for this include institutional racism (where organisations and structures discriminate against certain ethnic groups, either overtly or unintentionally) and for Māori, the ongoing effects of colonisation.

4.2 Deprivation

The index by which we measure the relative prosperity or deprivation of our population is calculated from census information. It is based on averaged information about the households and individuals in the area and combines census data on income, employment, benefit dependence, educational qualifications, internet access, home ownership, overcrowding, cold/mouldy housing and single parent households. The ranked categories are calculated so that, as nearly as possible, one-tenth of the population of New Zealand falls into each. The index applies to areas, not to individual people. The 1 to 10 scale is ordinal, not interval, i.e. the difference between adjacent points on the scale is not standard. (University of Otago, NZDep18 deprivation index by Statistical Area 1 based on 2018 census).

On this basis, Auckland has a similar profile to New Zealand as a whole. Almost one in five (18%) of our total population, and one in four (24%) of children aged under five years, live in the poorest areas (NZDep18 decile 9 and 10, or Quintile 5), and 18% of our population live in areas of the wealthiest two deciles. Māori and Pacific people are much more likely to live in NZDep18 Quintile 4 and 5 areas. The most deprived areas are concentrated in Rosebank/ Avondale in the west, Mt Roskill and the CBD, and the eastern and southern areas from Glen Innes to Mt Wellington and Otahuhu. The least deprived areas are Orakei, Glendowie, Remuera, Herne Bay and Mt Eden.

Figure 4.2.1: *Deprivation by ethnicity*



The chart of deprivation by ethnicity is approximate only and is calculated from SA2 data.

Figure 4.2.2: *Proportion in each NZ deprivation quintile, by locality*

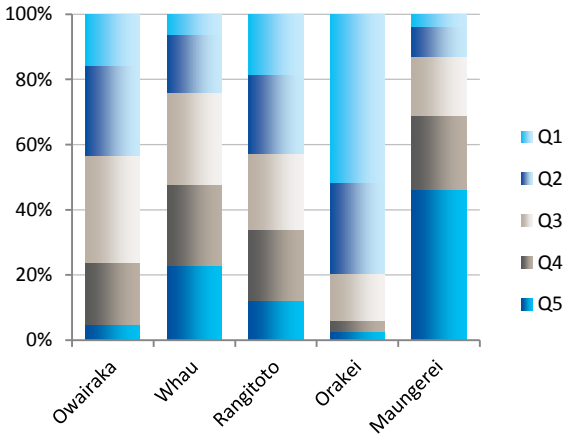
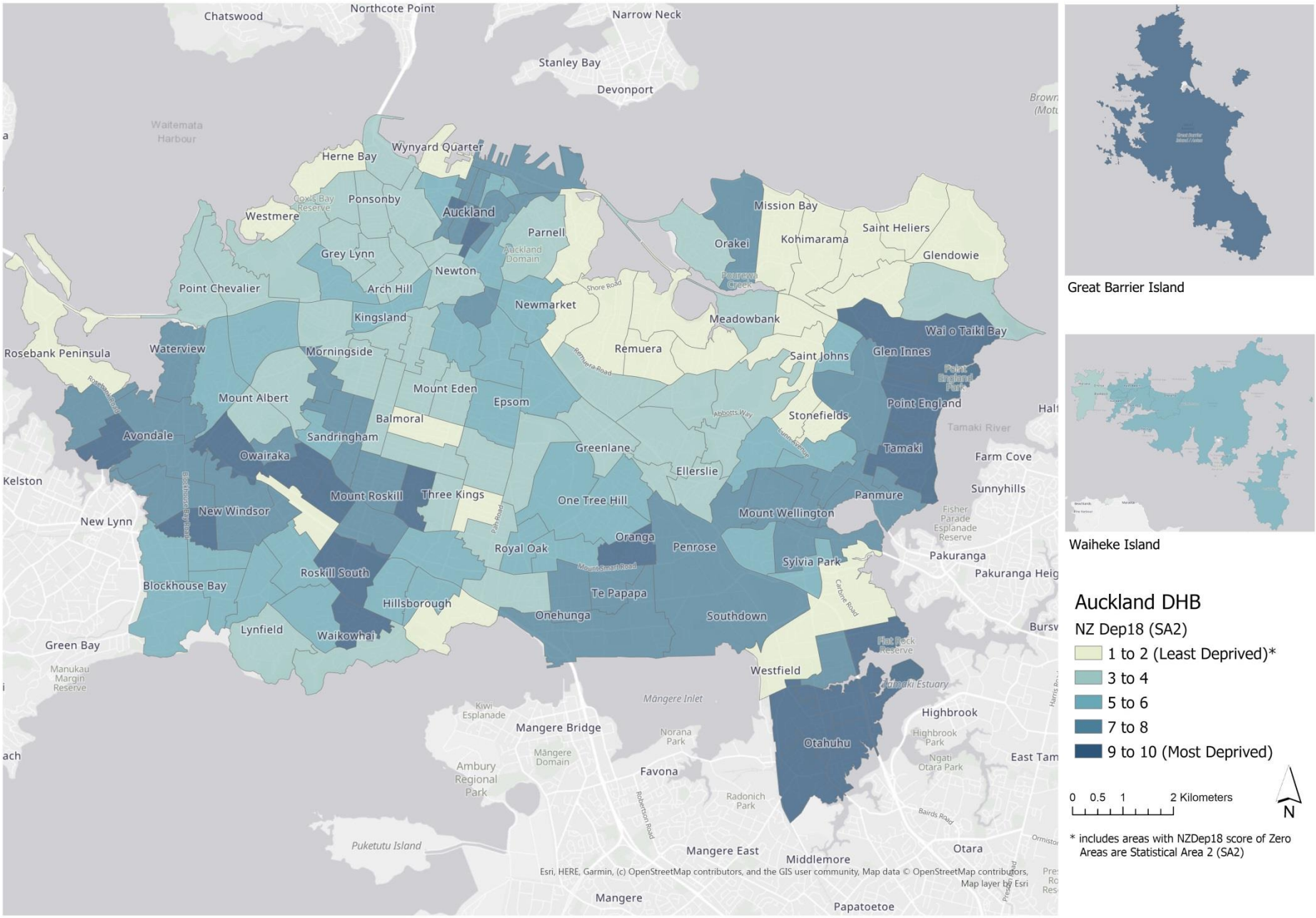


Figure 4.2.3: *Geographic spread of deprived areas, Auckland DHB 2018*



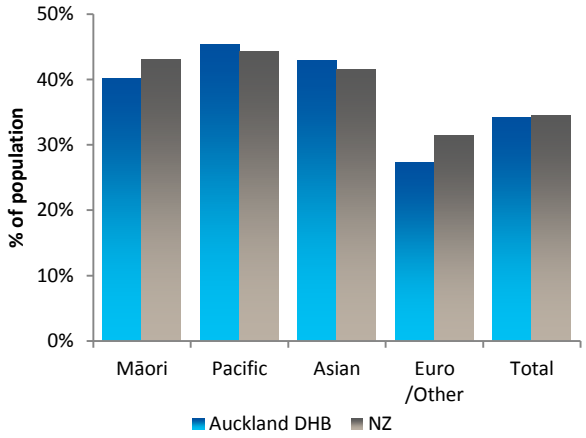
4.3 Income, Education and Employment

Economic factors such as income, occupation and education are powerful determinants of health. The median annual income for Auckland individuals aged 15 years and over in 2018 was $36,500, higher than the national figure of $31,800. When the high cost of housing in the Auckland region is taken into account, disposable income is lower than this figure suggests. Median income ranges from $56,400 for a European male to $20,800 for an Asian female. While 27% of European/Other people have an income of under $20,000 per year, the percentage is much higher for Māori (40%), Pacific (45%) and Asian people (43%). The Quality of Life survey in 2012 found that almost one in four people (24%) felt that they did not have enough income to meet their everyday needs.

Overall, 11% of people in Auckland left school with no qualification, but this figure is much higher for Pacific people (28%) and Māori (21%). In contrast, 9% of Asian people have no qualifications. At the high end of educational achievement, 52% of Asian people have tertiary or higher qualifications and 48% of European/ Other people, but only 26% of Māori and 12% of Pacific people. (Census 2018.)

At the time of the 2018 census, Māori and Pacific people were more than twice as likely to be unemployed as other ethnicities, both at 10%, compared with 4.1% of Europeans/Others and 6.6% of Asian people.

Figure 4.3.1: *Percentage of population aged 15+ years with income under $20,000 by ethnicity, 2018*

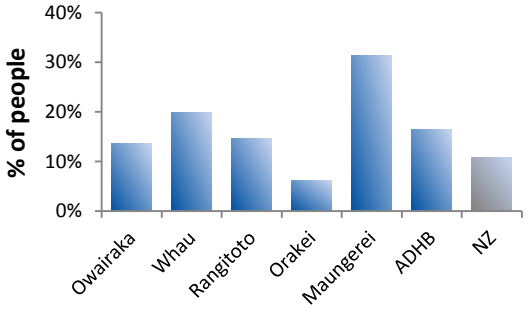


Source: Census 2018

4.4 Housing

Poor quality housing, including poor physical living conditions, overcrowding and lack of heating constitutes a significant health risk, particularly for the young and old. In Auckland DHB, 16.4% of people live in crowded households. Crowding is more common among Māori (23%), Pacific (44%) and Asian people (22%) than European/Other (7%) (Census 2018). Overcrowding is most common in Maungarei (31%) and Whau (20%), but in every locality except Orakei, the overcrowding rate is higher than the national average of 11%. Across the DHB, 22% of children aged under 15 years live in crowded houses.

Figure 4.4.1: *Proportion of people living in a crowded house by locality, 2018*



Nationally, 3.9% of households use no heating fuel versus 11.1% in Auckland DHB. A high proportion of households in Rangitoto locality (21%) report using no fuel, possibly reflecting the large number of apartments. There are also high proportions using no fuel in Maungerei (14%) and Whau (9%). Overall, one in four people (26%) report that their home is damp and 23% report mould, with higher proportions for Māori (38% damp and 32% mould) and Pacific peoples (41% damp and 39% mould).

Auckland region has the least affordable housing for purchase in New Zealand, with an affordability index (the ratio of cost to income) of 31.7, 43% higher than the New Zealand average of 22.2 (Massey affordability index report May 2019). Auckland region is also the least affordable region for renters, with households on average paying 35% of income on rent, compared with a national average of 31%. Renting is common in Auckland, with 60% of people living in rented housing, compared with 48% nationally (Census 2018). The 2013 census recorded 2,040 Auckland residents as homeless (living in mobile and improvised dwellings, roofless or rough sleepers, or living in a boarding house, night shelter or welfare institution). Combined with data on household composition and crowding, Amore (2016) estimated that 1.4% of Auckland region's population experience severe housing deprivation, defined as homelessness or insecure accommodation (vs. 1.0% for New Zealand).

4.5 Environmental factors

Auckland has relatively good air quality versus other cities and towns in New Zealand. However, some parts experience quite high air pollution, primarily generated by motor vehicle emissions and indoor heating fires. The Health and Air Pollution in New Zealand 2012 report estimated that, in 2006, in adults aged over 30 years, Auckland DHB had 56 premature deaths per year due to motor vehicle pollution and 37 due to pollution from domestic fires. Māori made up 11% of these deaths (6 and 4, respectively).

Air pollution also causes hospital admissions for cardiac and respiratory problems. In Auckland in 2006, motor vehicle pollution caused 9 cardiac and 18 respiratory admissions; of the latter, 6 were for children aged under 5 years and 4 for those aged 5-14 years. Indoor heating fires caused 7 cardiac and 12 respiratory admissions; of the latter 4 were for children aged under 5 years and 3 for those aged 5-14 years. The General Social Survey 2018 found that 44% of Auckland residents considered air pollution to be a problem.

Greater public transport use would help to reduce air pollution. Car transport remains the dominant mode of travel to work in Auckland, at 83%. Bus or train is the mode for 8% of people (Census 2013). Means of travel to work is relatively stable since 1996, although there was a slight increase in the use of public transport and a slight decrease (by 3%) in car use.

Most people living in Auckland DHB have access to safe reticulated sources of drinking water. In the 2018 census, 4% of households reported that they did not have drinkable tap water, compared with 3.2% nationally. More than two-thirds of Auckland residents felt that there was pollution of oceans, lakes, streams or the sea (GSS 2018).

4.6 Climate Breakdown

Climate change has serious implications for our health, wellbeing, livelihoods, and the structure of organised society. Its direct effects result from rising temperatures and changes in the frequency and strength of storms, floods, droughts, and heat waves, with physical and mental health consequences. The impacts of climate change are also mediated through less direct pathways, including changes in crop yields, the burden and distribution of infectious disease, and in climate-induced population displacement and violent conflict. Many of these effects are already evident (Lancet 2017).

Global average temperatures for the past three years are more than 1°C higher than the 20th century average for the past three years. Temperature increase could surpass 1.5°C, at least temporarily, in the next five years. Recent research suggests that a sustained increase of 2°C will result in a sea level rise of at least 6m.

4.6.1 *Rapid-onset climate breakdown events*

- Increased frequency of fires, floods, storm tides and extreme rainfall events affect public health. Apart from risks of direct injury, these events can result in:
  - disease outbreaks
  - toxic chemical contamination
  - effects of damp buildings
  - mental health issues, particularly anxiety and depression.
- The impact will destroy infrastructure, including housing, roads, water supply, waste water, electricity and communication networks, and reduce access to health care. In 2017, an extreme rainfall event disrupted water processing and reduced Auckland's water supply by 20%; subsequently, a severe drought in 2020 necessitated water restrictions. A storm in 2018 cut electricity to 180,000 homes and businesses. The displacement of ice at the poles and on mountains into the sea, redistributing weight on the earth's crust, is predicted to increase the number of earthquakes.

4.6.2 *Slow-onset impacts*

- Food production will become more difficult as temperature and rainfall patterns change, pollinators reduce, and pests and diseases increase, resulting in reduced availability and affordability. This is likely to impact more heavily on poorer people. Flooding and droughts already affect food production and prices. Efforts to reduce greenhouse gas emissions are likely to reduce production of ruminant meats and dairy products. Consumption of red meat has known associations with adverse health outcomes and a reduction in supply and consumption could benefit health in reducing colorectal cancer and heart disease.
- Warmer water, both sea and fresh, increases harmful algal blooms with potential risks to drinking water supplies. Toxic marine algae can contaminate shellfish that cause gastrointestinal and neurological problems.
- Bacterial growth increases in warmer sea and fresh water, and can lead to infected wounds on contact. Increased concentrations of salmonella and E. coli in freshwater streams, due to high runoff or low water

flow (drought), can cause illness ranging from nausea to renal failure.

- A doubling in the number of hot days (above 25°C) is expected by 2100. Hotter weather will particularly affect people with diabetes, cardiovascular disease and mental health issues, increasing attendance at emergency departments and mortality rates. Outdoor workers may experience more incidents of heat stroke and kidney impairment.
- Outdoor air quality may be affected by reduced rainfall and wind, leading to air stagnation, which allows pollutants to build up. This may be mitigated by a reduction in emissions from vehicles as electrification of the transport system continues.
  - NIWA predicts fewer cold nights and frosts, which may reduce emissions from wood-fired heating of homes in winter, improving air quality.
  - Drought may increase air-borne soil particles.
  - Earlier growing seasons may increase the duration of high pollen counts in the air, increasing the period and rates of allergic illnesses, e.g. asthma.
- The number of organisms that transmit infectious diseases, e.g. ticks, fleas and mosquitos, is likely to increase (although currently the number of flying insects is declining sharply). Warmer conditions may increase the rates of breeding for disease carriers, and for the infectious agents themselves. Emerging diseases e.g. chikungunya and zika viruses are already present in the Pacific Islands and could become a risk to New Zealand if warmer temperatures allow disease-transmitting mosquitos to become established here.
- The population of New Zealand, particularly of Auckland, will increase when the country begins to receive climate change refugees. Several Pacific Islands are experiencing problems with extreme weather events, which destroyed housing, crops, and fresh water supply, and caused coastal flooding of farm land. Fiji, Papua New Guinea and Bougainville, and the Solomon Islands, collectively representing 85% of the total Pacific population, struggle to manage internal climate-related displacement and resettlement.

4.7 Social factors

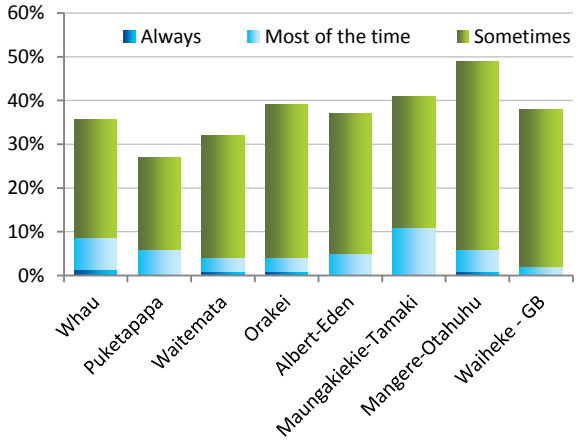
Social support and good social relations are important contributors to health. Social support provides emotional and practical resources that people need. Belonging to a social network of communication and mutual obligation makes people feel cared for, loved, esteemed and valued, and has a powerful protective effect on health. Supportive relationships may also encourage healthier behaviour patterns (WHO 2003).

The Quality of Life survey reports that about half (48%) of people in Auckland feel a sense of community where they live, and 62% feel that people can usually be trusted. Over one-third (38%) of people feel isolated some of the time. Many older people and older women in particular, live alone. Four out of five people (80%) are happy with their quality of life, but only 58% are happy with their work/life balance.

Internet access, a cornerstone measure of opportunity, information and communication, is available in 93% of people in Auckland DHB compared with 90% nationally. A mobile phone is available to 93% of people (Census 2018).

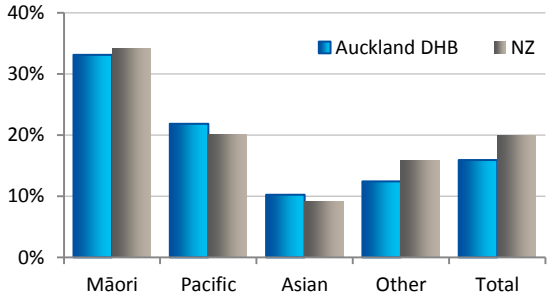
Single parenting affects almost every part of the population. While single-parent homes exist in significant numbers across nearly all ethnicities (16%), some ethnicities have higher rates than others, for example, 33% of Māori children live in single parent families. Single-parent homes often have lower socio-economic status, and children are at an increased risk of emotional and behavioural problems, and poor school performance.

Figure 4.7.1: *Proportion of people who feel isolated by ward, 2012*



Source: NZ Quality of Life Survey 2012

Figure 4.7.2: *Proportion of children living in single parent families, 2013*



Source: Census 2013

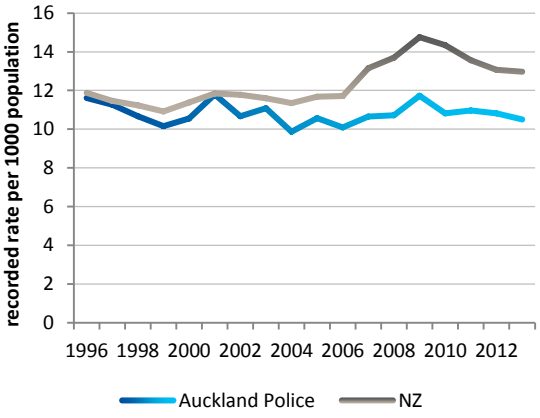
4.8 Violence and crime

Crime affects not only the health of individual victims but also community life. Fear of crime influences the health and well-being of individuals and communities. People may make adjustments to their lifestyles and behaviour as a result of an experience of crime or fear of crime, e.g. not going out after dark, not using public transport and avoiding certain areas. The concentration of crime in particular neighbourhoods means that the adoption of avoidance measures can weaken social ties and undermine social cohesion.

Three quarters of people (74%) think unsupervised children are safe in their area, but only 58% feel safe walking alone at night in their neighbourhood. Although police records of offences in general and of violent offences peaked in 2009 and declined since, they have not dropped back to pre-recession levels. This is in line with national trends.

There were 29 hospitalisations per 100,000 population for domestic violence in Auckland in 2014. The rates differed between ethnic groups, with 135 per 100,000 population for Māori, 58 per 100,000 population for Pacific people and 14 per 100,000 population for Europeans/Others. These figures are not age-standardised and the difference between ethnic groups partly reflects the age distribution of each population.

Figure 4.8.1: *Recorded rates of violent offences 1996-2013*



Source: Statistics NZ, Offences recorded by NZ police authorities

4.9 Cultural factors

Culture and cultural beliefs to explain ill health can profoundly affect health, acceptance of treatment and use of services. For example, Māori views on health are framed by a holistic approach that encompasses four key elements, wairua (spiritual), hinengaro (psychological), tinana (physical) and whānau (extended family). Karakia (blessing or prayer) plays an essential part in protecting and maintaining these key elements of health. Among Māori people in Auckland, 21% do not know their Iwi and approximately 82% cannot speak Te Reo Māori.

Māori and Pacific people are under-represented in the medical workforce of New Zealand, with Māori making up 3.8% of doctors (16.5% of the population) and Pacific 1.8% of doctors (8.1% of the population) in 2019. However, Māori are well-represented in recent intakes to medical schools (15.3% of 2015-19 intakes) and recent graduates (16% for Otago and 14% for Auckland in 2018). Pacific make up 7.2% of the medical student intake (NZMA workforce survey 2019).

Ministry of Health commissioned Te Rōpū Rangahau Hauora a Eru Pōmareto to produce a Māori Health Profile for each DHB in 2013. The profile highlighted a number of strengths for our Māori population:

- Most Auckland Māori adults (84%) reported that their whānau was doing well.
- 77% of Māori found it easy to access whānau support in times of need.
- Being involved in Māori culture was important (very, quite, or somewhat) to the majority of Māori adults (71%). Spirituality was important to 62%.
- Almost all (92%) Auckland Māori had been to a marae at some time. Three out of five (58%) had been to their ancestral marae, and a similar proportion (57%) would like to go more often.
- One in ten participated in traditional healing or massage in the last 12 months.

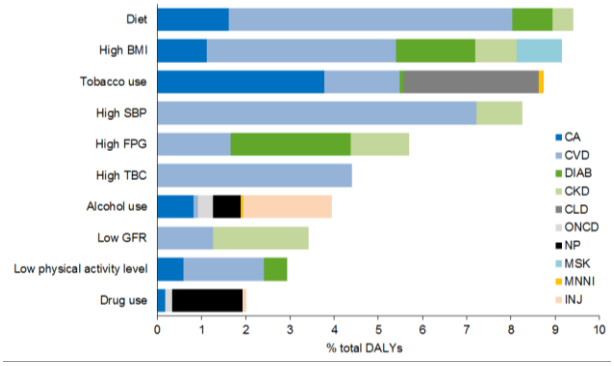
Many people in Auckland are immigrants and may be dislocated from their culture. This is particularly the case for Asian (81% are immigrants) and Pacific peoples (41% are immigrants), but is also common among other ethnicities.

The New Zealand Health Survey periodically includes questions on whether respondents have experienced racism, either from a health professional or more broadly. Experience of racism by a health professional was higher among Māori (4.4%), Pacific (3.9%) and Asian (3.4%) groups compared with European/Other (0.8%). Racism experienced from other sources was much higher at 23% for Māori, 18% for Pacific and 28% for Asian people, compared with 11% for European/Other (Harris et al., 2019, based on NZHS 2011/12).

5 Modifiable Risk Factors

Lifestyle factors have a significant impact on overall health and well-being, and are key contributors to cancer, cardiovascular disease and diabetes, which are major causes of death and poor health in our population. The Ministry of Health reported the burden of disease across New Zealand based on data from the Global Burden of Disease study 2013. They use a measure called disability-adjusted life years (DALYs) that includes burden from early death and from lives led with disability. In terms of modifiable risk factors that drive this health loss, five lifestyle factors have a major impact: poor diet (9.4% of health loss), obesity (9.2%), tobacco use (8.7%), alcohol use (4.0%) and low physical activity (3%). Three further factors can be modified by lifestyle changes and pharmaceuticals: high blood pressure (8.3% of health loss), high blood glucose (5.7%) and high cholesterol (4.5%) (Health Loss in New Zealand 1990-2013). Obesity may be reduced by surgery. These risk factors are present in the Auckland population at rates of 10.6% medicated for high blood pressure, 7.3% medicated for high cholesterol and 5.3% with diabetes (NZ Health Survey 2014/17, VDR 2019).

Figure 5.1: *Attributable burden of disease (percentage of total DALYs) for selected risk factors, 2013*



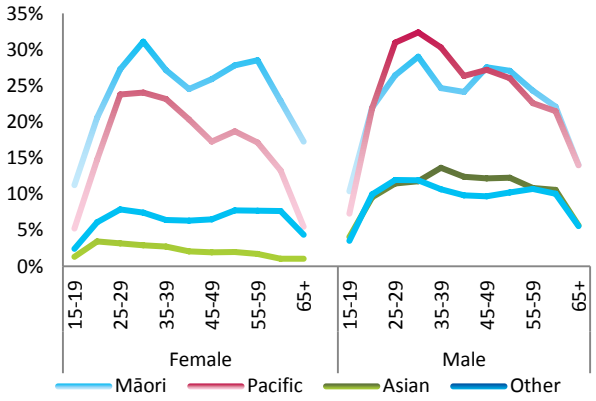
Key: CA = cancers; CVD = cardiovascular disorders; DIAB = diabetes; CKD = chronic kidney disease; CLD = chronic lung disease; ONCD (which here includes chronic liver disease) = other non-communicable diseases; NP = neuropsychiatric disorders; MSK = musculoskeletal disorders; MNNI = maternal, neonatal, nutritional deficiency and infectious disorders plus birth defects; INJ = injuries, unintentional and intentional; BMI = body mass index; SBP = systolic blood pressure; FPG = fasting plasma glucose; TBC = total blood cholesterol; GFR = glomerular filtration rate.

Source: Health Loss in New Zealand 1990- 2013

5.1 Smoking

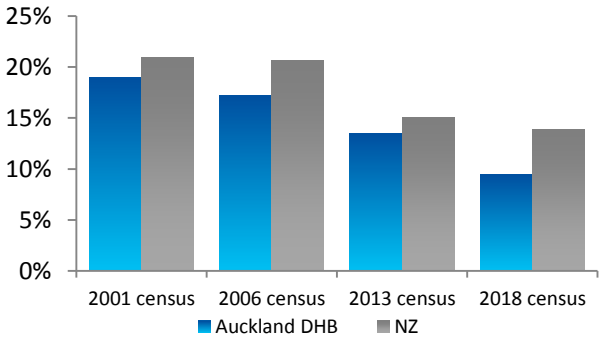
Smoking is the most significant cause of premature and preventable death in New Zealand. Ten percent of Auckland adults are regular smokers of cigarettes (one or more per day). This is lower than for New Zealand as a whole (13%) and has reduced from 17% in 2006. However, rates are higher in some groups, notably Māori (23%), Pacific people (20%) and younger adults. The proportion of Year 10 students in New Zealand who smoke has declined over the last 10 years, from 11% in 2009 to 5.9% in 2019, although it remains higher for Māori boys (11.5%) and girls (15.4%) (ASH Year 10 surveys). For all ethnicities except Māori, women have lower smoking rates than men. The 2018 census recorded regular smoking for 6,500 Māori, 7,500 Pacific, 7,900 Asian and 15,500 European/Other people. Smoking rates in pregnant women are 10.4% overall, but 40% in Māori. Providing support for pregnant women to quit is a high priority. In the July to September 2014 quarter, nearly all smokers admitted to hospital (96%) and all of those who see their family doctor receive brief advice to quit smoking. Auckland DHB bans smoking on all of its premises.

Figure 5.1.1: *People who are regular smokers of cigarettes by age group and ethnicity, Auckland DHB*



Source: Census 2018. The quality of smoking data was rated as moderate to poor, with a response rate of 84%.

Figure 5.1.2: *Adults aged 15+ years who are regular smokers of cigarettes*



Source: Census 2001-2018

5.2 Diet and physical activity

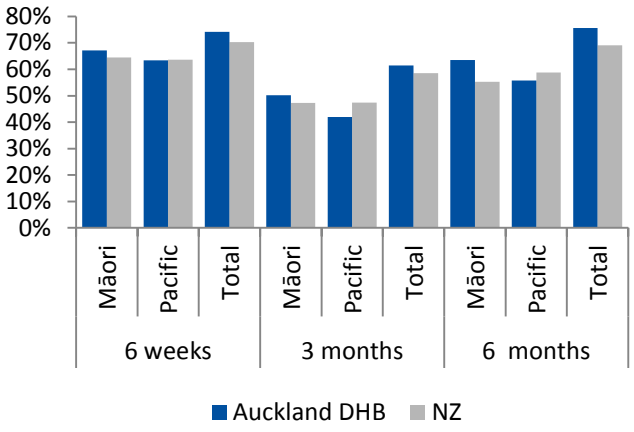
Over-consumption of fats and sugars leads to excess weight and high cholesterol levels, while too much salt can contribute to high blood pressure. These are risk factors for cardiovascular disease and diabetes.

Nutrition is complex and we have limited information at a DHB level. In Auckland DHB, 58% of adults eat the recommended daily intake of vegetables, 54% eat that of fruit, and only 36% eat that of both. Women have a healthier diet than men. Pacific and Asian people are less likely to eat the recommended vegetable intake. Children in Auckland are more likely than adults to eat recommended servings of fruit and vegetables (46%). Seven out of ten eat fast food at least once a week, and half have fizzy drink at least once a week. At three months of age, 61% of babies discharged by midwives in Auckland are fully breastfed, compared with 59% nationally. Māori and Pacific babies are less likely to be breastfed, in Auckland DHB and New Zealand.

Physical activity is protective against health conditions such heart disease, type 2 diabetes and some cancers. It also helps to reduce the prevalence of overweight and obesity. Fewer than half (47%) of Auckland adults are regularly physically active and undertake at least 30 minutes of exercise five days a week. Asian people are the least likely to be physically active (43%). Active travel to work or school is a good source of physical activity. Just under half (48%) of Auckland DHB school children walk, cycle or otherwise travel actively to school. Māori (48%) and Pacific (51%) children are more likely to travel actively to school than Asian children (45%; NZ Health Survey 2014-17). Among employed adults, 6.5% in Auckland region biked, walked or jogged to work (Census 2013).

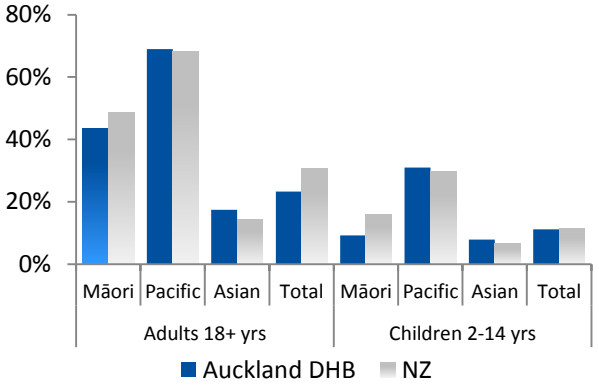
Obesity is associated with a wide range of health conditions, including cardiovascular disease, various types of cancer, type 2 diabetes, kidney disease, osteoarthritis, gout, gallstones, complications of pregnancy and mental health issues. For adults, obesity is defined here as a body mass index (BMI) of 30 or above, and for children obesity is defined as a BMI above Cole cut-offs (international standard reference points for BMI by age and gender). Half (51%) of women and 62% of men in Auckland are overweight or obese. One in five of our adult population is obese (similar to the rate in 2003), compared with 31% of the national population. However, obesity is much more common in our Māori (44%) and Pacific (69%) populations and much less common in our Asian population (17%). In children aged 2-14 years, 11% are obese overall, but 31% of Pacific children. Overall, 32% are overweight or obese, but 63% of Pacific children. Māori (39%) and Asian children (27%) also have high rates.

Figure 5.2.1: *Babies fully breastfed at 6 weeks/3 months or partially breastfed at 6 months, 2019*



Source: MoH WCTO reports

Figure 5.2.2: *Obesity (age-standardised) by age group and ethnicity, 2014-17*



Source: NZ Health Survey 2014-2017; obesity defined as body-mass index ≥30 (adults) or above Cole cut-offs (children)

5.3 Alcohol and Drugs

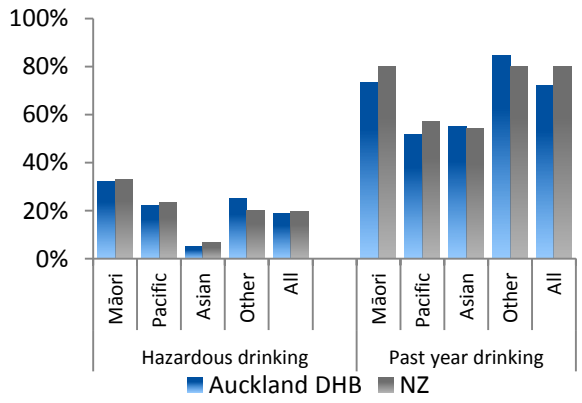
There is no safe level of alcohol consumption (Lancet 2018). As well as its acute and potentially lethal sedative effect at high doses, alcohol has effects on every organ in the body (Health Promotion Agency). Alcohol use accounts for 4% of health loss, mainly through injuries, cancers and psychiatric disorders (Health Loss in New Zealand 1990-2013). In people aged 15-49 years, it is the leading cause of health loss.

Drinking any alcohol during pregnancy is harmful to the foetus and may result in fetal alcohol spectrum disorder (FASD). In New Zealand, the evidence indicates that:

- at least one in two pregnancies are exposed to alcohol; one in ten are exposed at high-risk levels
- two in five pregnancies are unplanned, increasing the chance they will be exposed to alcohol.

Almost three in four (72%) of adults and young people in Auckland DHB drink alcohol. Moreover, 19% of adults drink alcohol in a way that is classified as hazardous. Men are far more likely to be hazardous drinkers (27%) than women (11%). The rate for Māori (32%) is much higher than for Pacific (22%), Asian (5%) and European/Other (25%) ethnicities. The Global Burden of Disease study found that for New Zealand in 2016, alcohol is the biggest risk factor for health loss among people aged 15-49 years.

Figure 5.3.1: *Adults who are hazardous or past year drinkers (age-standardised), 2015-17*



Source: NZ Health Survey 2015-2017

Illicit drugs use accounts for 2.3% of health loss from all causes (Health Loss in New Zealand 1990-2013), but approximately 6.5% of loss in youth (aged 15-24 years). The New Zealand Health survey 2012/13 found that:

> *"Eleven percent of adults aged 15 years and over reported using cannabis in the past 12 months. Cannabis was used by 15% of men and 8% of women… Māori adults and adults living in the most deprived areas were more likely to report using cannabis in the last 12 months… Six percent of cannabis users reported harmful effects on work, studies or employment opportunities, 4.9% reported difficulty learning, and 1.7% reported absence from school or work in the last 12 months due to cannabis use… Eight percent of cannabis users reported a time in the last 12 months that cannabis use had a harmful effect on their mental health."*

The 2015/16 health survey found that 1.1% of adults aged 16-64 years reported using amphetamines in the 2015/16 year. Men were more likely to have used amphetamines (1.7% compared with 0.6% of women). Younger adults, aged 25-34 years, had the highest reported rates, at 2.4%. The rates for each ethnicity were 2.9% for Māori, 1.2% for Pacific, 0.2% for Asian and 1.3% for European/Other adults.

The 2007/08 survey of drug use in New Zealand found that marijuana was the most commonly used illegal drug in Auckland and New Zealand.

Nationally, other drugs most commonly used are nitrous oxide, kava, ecstasy and amphetamines; but each of these was tried by less than 4% of people in the last year. Party pills were commonly used in 2006, however, since this survey, party pills have been made illegal. Police offences records show that possession of marijuana constituted 68% of recorded illicit drug possession offences in Auckland in 2013, and amphetamine/methamphetamine constituted 22%. In the 2013 New Zealand Arrestee Drug Use Monitoring System (NZADUM) survey, 50% of the police detainees had tried methamphetamine in their lifetimes, 30% had used it in the past year, and 19% had used it in the past month.

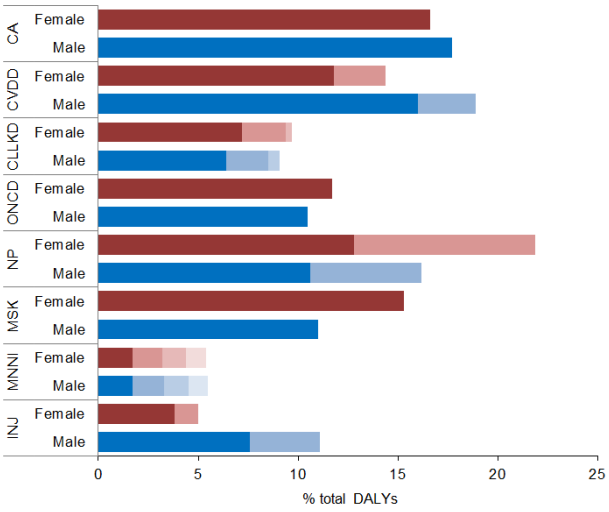
6 Health Status

6.1 Overall health

Overall, the self-reported health status of Auckland residents is excellent. Almost 89% of adults in Auckland report that their overall health is excellent, very good or good, although this is lower for Māori (81%) and Pacific (84%) (New Zealand Health Survey 2014-17). The following sections examine how long we are living and at the key diseases that shorten our lives through avoidable deaths, and those causing avoidable hospital admissions.

The most significant disease groups causing health loss, measured in DALYs, are neuropsychiatric disorders, including mental illness, addictions and dementia (19% of the total burden), cancers (17%), cardiovascular diseases including diabetes (17%), musculoskeletal disorders (13%), and chronic lung, liver and kidney disease (10%). Together, these conditions account for over three-quarters of health loss (76%) (Health Loss in New Zealand 1990-2013).

Figure 6.1.1: *DALYs by condition group, New Zealand, 2013 (Health Loss in NZ 1990-2013)*

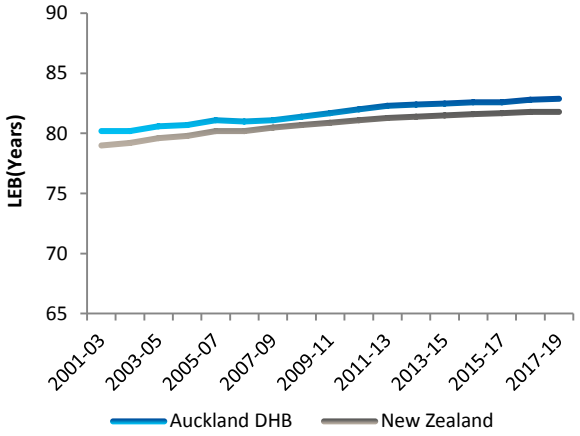


Key
CA = cancers
CVDD = cardiovascular disorders (dark) and diabetes (light)
CLLKD = chronic lung (dark), kidney (mid) and liver disease (light)
ONCD = other non-communicable diseases
NP = neuropsychiatric disorders: mental disorders (dark), neurological disorders including dementia (light)
MSK = musculoskeletal disorders
MNNI = birth defects, maternal and neonatal disorders, infectious disorders, nutritional deficiency disorders (left to right)
INJ = injuries, unintentional (dark) and intentional (light)
Source: Health Loss in NZ 1990-2013

6.1.1 *Life expectancy*

In 2017-19, life expectancy at birth in Auckland DHB was 82.9 years, 1.1 years longer than the national figure of 81.8 years. For New Zealand as a whole, life expectancy increased by 1.3 years over the last decade. For Auckland, the increase was 1.8 years.

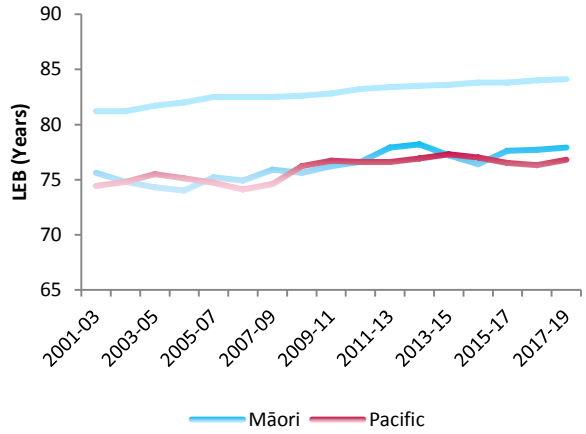
Figure 6.1.1.1*: Life expectancy at birth*



Source: Ministry of Health mortality data collection, local calculation

Life expectancy varies across ethnic groups, with Māori living an average of 77.9 years and Pacific people 76.8 years, while non-Māori non-Pacific people live 84.1 years. Women live 3.1 years longer than men. While total life expectancy for Māori and Pacific has increased, a gap remains of 6.2 years for Māori and 7.3 years for Pacific when compared with non-Māori non-Pacific people.

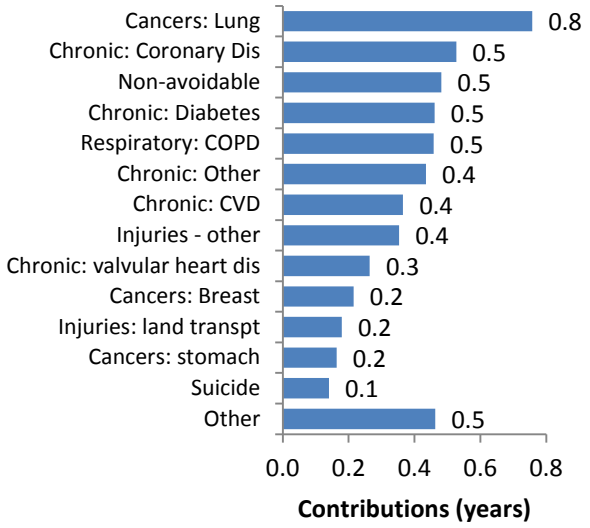
Figure 6.1.1.2: *Average life expectancy at birth in Auckland DHB (years) by ethnicity; male and female combined*



Source: Ministry of Health mortality collection; Statistics NZ population estimates based on census 2018

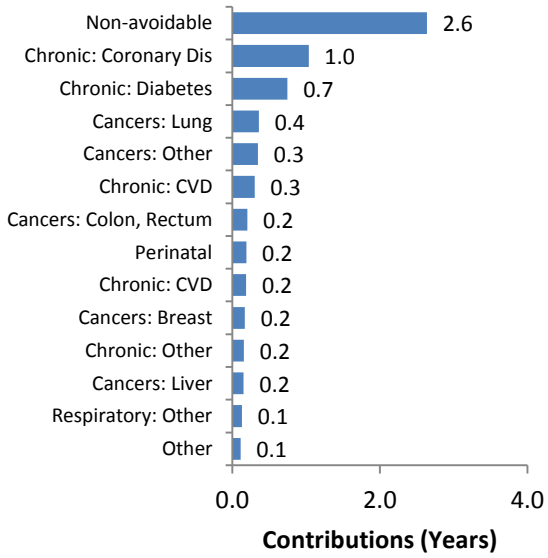
Circulatory system diseases, cancer and diabetes account for over half the difference in life expectancy between Māori and Pacific people when compared with European/Other ethnicities in Auckland. Accidents were a large contributor to the gap for Māori men and respiratory diseases were important for Māori women.

Figure 6.1.1.3: *Life expectancy gap between Māori and non-Māori/non-Pacific by leading causes of mortality in Auckland DHB, 2012-14*



Māori develop lung cancer 6-8 years earlier than non-Māori and at lower exposure to smoking. With the incidence of lung cancer for Māori women continuing to rise steeply and an ongoing very high death rate from the disease, it is likely that differences in mortality from lung cancer will persist for some time.

Figure 6.1.1.4: *Life expectancy gap between Pacific and non-Māori/non-Pacific by leading causes of mortality in Auckland DHB, 2012-14*

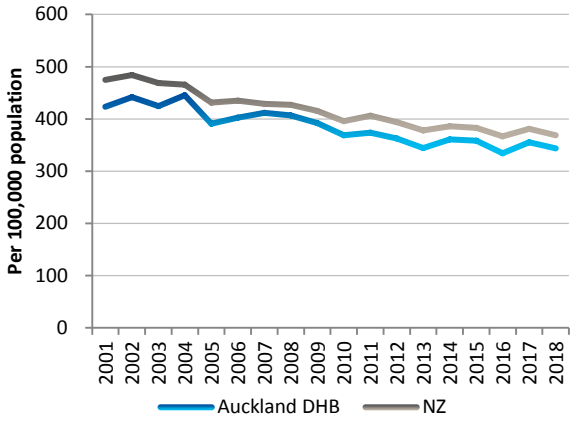


6.1.2 *Total mortality*

About 2,500 people die each year in Auckland and 80% of these are aged over 65 years. The most common causes of death are cardiovascular disease (31%), cancers (27%), dementia (8.5%) and respiratory diseases (8%). The age-standardised mortality rate in 2018 was 344 deaths per 100,000 population, compared with 369 for New Zealand as a whole. Mortality rates are highest in Mangere-Otahuhu (age-standardised 850 per 100,000 population, standardised to Auckland region) and Mangakiekie-Tamaki (790 per 100,000 population).

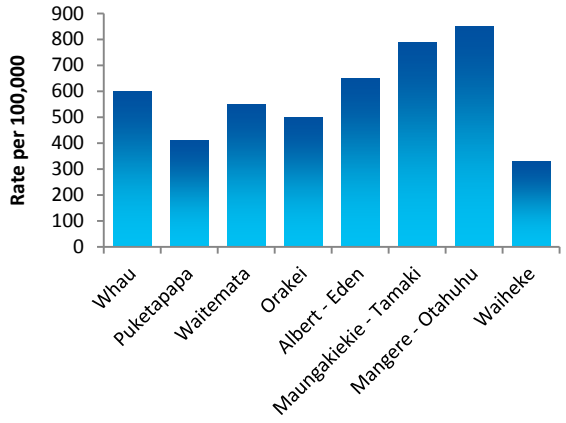
As well as looking at mortality rates, it is helpful to measure how many years of life are lost for each person who dies before the age of 65. This calculation gives more weight to the deaths of younger people. The age-standardised rate of potential years of life lost (PYLL) per 1,000 people was 18 for Auckland, compared with 25 for New Zealand as a whole. This suggests that Auckland is doing better than the national average at avoiding mortality among younger people. Māori and Pacific lose three times as many years of life as European/Others per 1,000 population.

Figure 6.1.2.1: *All deaths, age standardised mortality rate per 100,000 population, 2001-2018*



Source: Ministry of Health Mortality Collection, standardised to WHO population

Figure 6.1.2.2: *All deaths, age-standardised mortality rate per 100,000 population by local board, 2011*



Source: StatPlanet, standardised to Auckland region population

Figure 6.1.2.3: *ASR of Potential Years of Life Lost per 1,000 population, 2013*

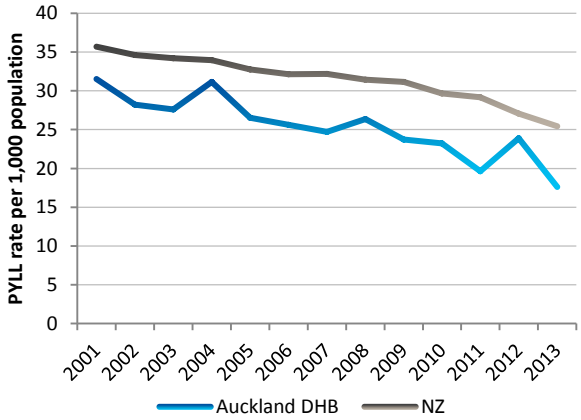
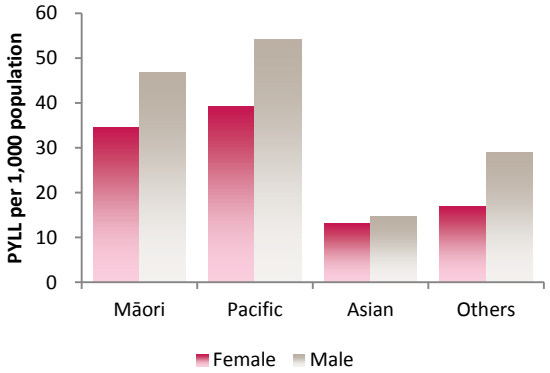


Figure 6.1.2.4: *ASR of Potential Years of Life Lost per 1,000 population, by ethnicity and gender, Auckland DHB residents, 2011-2013*



6.1.3 *Avoidable causes of mortality*

Avoidable mortality includes deaths occurring in those aged 0-75 years (excluding stillbirths) that could potentially have been avoided through population-based interventions or through preventive and curative interventions at an individual level. Prevention includes successful public health promotion (including lifestyle changes) and injury prevention.

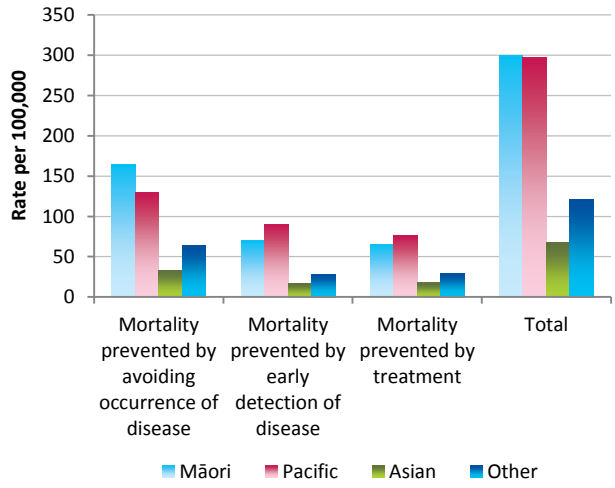
In 2018, 614 deaths (24% of the total) were considered potentially avoidable. The leading causes of avoidable mortality in Auckland are ischaemic heart disease (IHD), lung cancer, intentional and unintentional injuries, colorectal cancer, diabetes, stroke and chronic obstructive pulmonary disease (COPD). For women, breast and uterine cancer are also important.

Figure 6.1.3.1: *Most common causes of avoidable mortality, 2016-2018 combined*

	Cause	Age-standardised rate per 100,000 population
Female	*Breast Cancer*	10.8
	Lung Cancer	9.7
	Cerebrovascular disease	6.6
	Intentional injuries	6.3
	Colorectal cancer	6.0
	Ischaemic heart disease	5.9
	Diabetes	3.9
	Uterine cancer	3.6
Male	*Ischaemic heart disease*	31.4
	Intentional injuries	12.9
	Lung cancer	12.7
	Unintentional injuries	11.1
	Cerebrovascular disease	8.1
	Diabetes	7.0
	Colorectal cancer	5.9
	COPD	5.6

The very marked differences between groups highlight the opportunity for reduction in health inequalities. Men have a 66% higher avoidable mortality rate than women. Māori and Pacific avoidable mortality rates are more than double that of European/Other ethnicities. The chart below shows the rates that could be avoided through primary prevention (avoiding occurrence of disease e.g. through immunisation or lifestyle-related interventions), secondary prevention (detecting and addressing disease before the appearance of symptoms e.g. by treating hypertension) and tertiary prevention (treatment and rehabilitation e.g. by surgery).

Figure 6.1.3.2: *Avoidable mortality by ethnic group (age-standardised per 100,000 population), 2009-2011*



6.2 Specific conditions

6.2.1 *Cardiovascular disease (CVD)*

Cardiovascular diseases (CVD) are diseases affecting the heart and circulatory system. They include ischaemic heart disease, rheumatic heart disease, cerebrovascular disease and other forms of vascular and heart disease. CVD is the leading cause of death in Auckland DHB. It is also the leading cause of years lost to premature mortality. The main risk factors for CVD including stroke are high blood pressure, high body mass index, high cholesterol, tobacco use and low physical activity (Health Loss in New Zealand 2013). These risk factors interact with each other, for example low physical activity contributes to high body mass index, high blood pressure and high cholesterol. CVD is exacerbated and compounded by diabetes. Overall, around 70% of the burden of CVD is attributed to modifiable risk factors and is preventable through adopting a healthy lifestyle, and manageable with lifestyle change, early intervention and effective management.

The age-standardised mortality rate (ASR) from CVD of the Auckland DHB population is slightly lower than the New Zealand rate (100 per 100,000 population vs. 104 per 100,000 population). The rate for men (121 per 100,000 population) is much higher than for women (81 per 100,000 population). Among men, it is more common in Māori (204 per 100,000 population) and Pacific (247 per 100,000 population) than Asian (73 per 100,000 population) and European/Other ethnicities (110 per 100,000 population). The rates for Māori and Pacific women are also high at 141 and 130, respectively, per 100,000 population. The mortality rate for CVD has reduced from 135 per 100,000 population in 2006-08.

Figure 6.2.1.1: *Age standardised mortality rate per 100,000 population for cardiovascular disease, male and female, all ages*

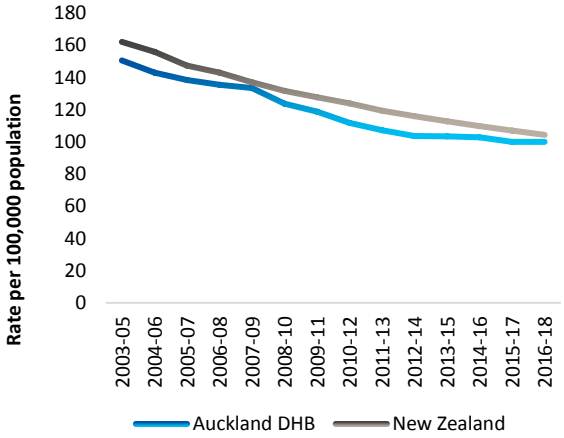
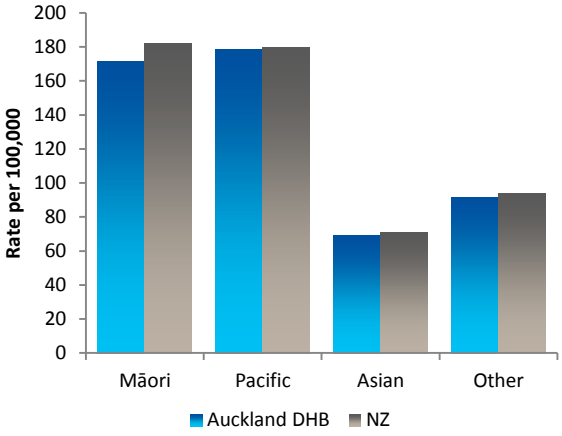


Figure 6.2.1.2: *CVD mortality by ethnic group (ASR per 100,000 population), 2016-18 combined*



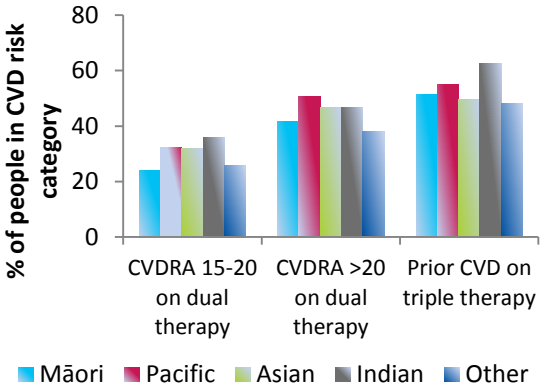
Source: Ministry of Health Mortality data collection

Within Auckland DHB, 92% of eligible adults were assessed within the five years to December 2018 for their risk of CVD, but only 68% of Māori men aged 35-44 years. One in nine Auckland adults takes medication for high blood pressure, and one in 14 takes medication for high cholesterol (NZ Health Survey 2014-17). A higher proportion of Māori, Pacific and Asian people are on these medications than European/Other people, reflecting higher rates of CVD.

Current New Zealand guidelines recommend that people who have had a heart attack or stroke should be treated with a combination of medications known as 'triple therapy'. These medications include anti-coagulant/antiplatelet, a cholesterol-lowering drug and a blood pressure-lowering drug. People with a high risk score but no previous CVD should be treated with cholesterol- and blood pressure-lowering drugs (dual

therapy). Of Auckland residents who were admitted to hospital with CVD in the previous 10 years, 51% are on triple therapy. This rises to 63% in people who also have diabetes. Rates of cardiac investigation and surgery carried out in public hospitals for Auckland residents are similar to the national average.

Figure 6.2.1.3: Cardiovascular risk and medication dispensing rates, March 2019



Source: Northern Region Cardiac KPIs

6.2.2 *Stroke*

Stroke is a sudden interruption of blood flow to a part of the brain, causing damage to the brain cells. The impact of stroke and transient ischemic attack (TIA) can be catastrophic for the individual and family/whānau, and is resource-intensive for health services. Management of high blood pressure through medication reduces the risk of stroke and CVD (see rates above).

The age-standardised mortality rate from stroke is 27 per 100,000, which is higher than the rate of 24 per 100,000 for New Zealand (2016-18 average). Mortality from stroke is higher for Māori and Pacific peoples (32 and 33 per 100,000, respectively). There were 782 strokes leading to hospital admission in Auckland DHB residents in the year to March 2020. Approximately 18% of these patients die within 30 days of admission.

For patients admitted acutely, the risk of dying is higher if the admission takes place at the weekend, resulting in five excess stroke deaths per year for Auckland DHB.

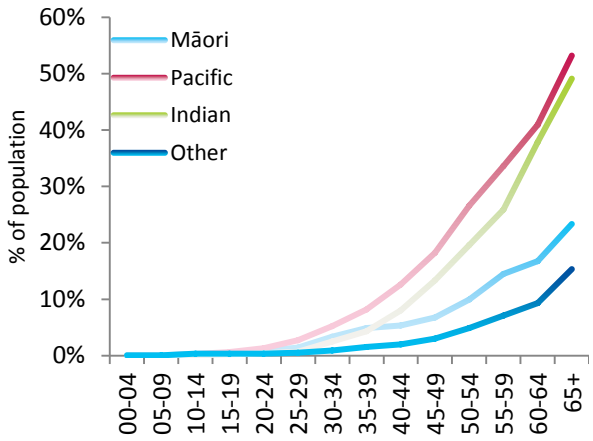
Managing these events according to the New Zealand Stroke Management Guidelines (2012) is essential for improving and maximising health outcomes for people after a stroke, or who are at risk of stroke. It is also important to commence rehabilitation promptly as delays in acute wards may inhibit the crucial motor recovery process taking place shortly after a stroke. In Auckland DHB, 8.4% of eligible stroke patients received thrombolysis (breaking down blood clots using medication), compared with the national target of 10% (September 2020). The rate of thrombolysis is variable, ranging from 7% to 18% per quarter over the past two years. Eight out of ten patients (80%) were cared for on a dedicated stroke unit, meeting the national target of 80%. Between 24% and 33% of stroke patients are transferred from acute care to rehabilitation each quarter, and of these, over 70% were transferred within 10 days of having a stroke in three of the eight quarters to September 2020.

6.2.3 *Diabetes*

Diabetes is a disease that affects the body's ability to control blood glucose. Type 1 diabetes is primarily an inherited condition generally diagnosed in childhood/adolescence. Type 2 diabetes is usually thought of as an adult disease, but is increasingly being diagnosed in children. We estimate that 26,445 people in Auckland have some form of diabetes, 5.3% of the population (Virtual Diabetes Register 2019; PHO records of patients identified as diabetic gives a 20% lower estimate than this). The number increased by 8,000 since 2010.

Diabetes prevalence increases dramatically with age, reaching 14% of the population for European/Other/Asian people by the time people reach their 60s. From the age of 30 years, prevalence in Māori is increasingly higher than in European/Other/Asian and is even higher for Pacific people and Indian people.

Figure 6.2.3.1: *Diabetes prevalence in Auckland DHB, 2019*



Source: Ministry of Health Virtual Diabetes Register, 2019

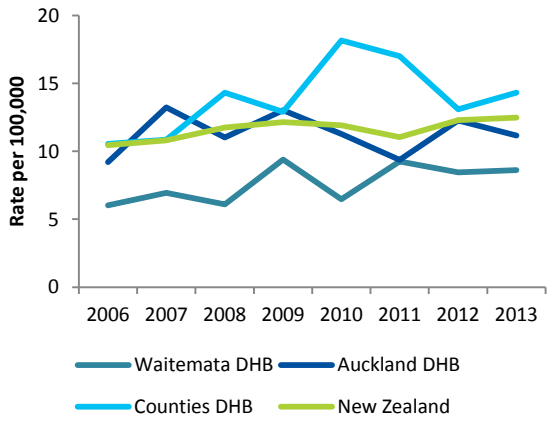
The presence of diabetes can lead to CVD, blindness, dementia, kidney disease, and foot problems that may lead to amputations. Early detection and good management can delay or avoid the onset of these problems. Risk assessment for CVD and diabetes are

discussed above. We need to provide more support to people with diabetes to manage their risk factors, such as high blood pressure and blood sugar levels, and to encourage them to attend retinal screening. Of the estimated number of people with diabetes in Auckland DHB aged 15-74 years, 62% are well-managed (defined as having HbA1c of <64 mmol/mol in the 15 months to May 2018). Within the last two years, 52% of people with diabetes had the recommended retinal screening in the public sector.

Type II diabetes, which makes up 90% of diabetes, can be managed by diet alone, oral medication or insulin. Prescribing rates given here are therefore only a partial indication of the quality of management. Auckland's rate of dispensing regular insulin or metformin in people with diabetes aged 25 years and over is 59%, similar to the national rate of 61%; 21% filled at least one insulin prescription, 67% filled a metformin prescription and 29% filled a sulfonylurea prescription.

Auckland has below average rates of admission for diabetic ketoacidosis (49 admissions, 0.2% of people with diabetes) and average rates of admissions for hypoglycaemia (68 admissions, 0.3% of people with diabetes) (Atlas of Healthcare Variation 2016). Admission rates may be an indicator of the quality of management in primary care and/or emergency departments. In total, people with diabetes used 32,380 medical/surgical bed days in 2016, which was 19.5% of all medical/surgical bed days. Between 2006 and 2013, Auckland has seen the rate of lower limb amputations rise from 9 to 11 per 100,000 population. This increase reflects the growing number of diabetics and increasing time with diabetes at a patient level. Rates of amputation per medicated diabetic person are relatively stable between 0.1% and 0.2%. In 2016, the actual number of amputations was 40.

Figure 6.2.3.2: *Diabetes-related non-traumatic lower limbs amputation age standardised rate, Auckland region DHBs and New Zealand, 2006-2013*

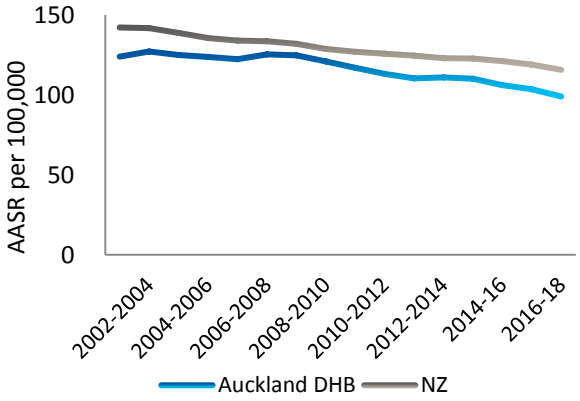


6.2.4 *Cancer*

Cancer is an abnormal growth of cells that can result in the invasion of normal tissues, which may spread to other parts of the body (metastasis). The main risk factors for cancer are tobacco use, high body mass index, physical inactivity, alcohol use, low fruit and vegetable intake and unsafe sex. For melanoma, sun exposure is also important (Health Loss in New Zealand 2013). Overall, around 30-35% of the burden of cancer is attributed to modifiable risk factors, and is preventable through adopting a healthy lifestyle, and manageable with lifestyle change, early intervention and effective management.

Cancer is the second highest cause of death in Auckland DHB, accounting for 27% of deaths. Among our residents, the age-standardised mortality rate (ASR) from cancer for 2016-18 is 99 per 100,000 and is lower than the national ASR of 116 per 100,000 population. The Māori (163 per 100,000 population) and Pacific mortality rates (175 per 100,000 population) are substantially higher than that of European/Other ethnicities (96 per 100,000 population), while Asian people have the lowest rate at 62 per 100,000 population. Since 2009, the ASR for Auckland fell faster than that for New Zealand.

Figure 6.2.4.1: *Age standardised mortality rate per 100,000 population for all cancers, three-year rolling average, 2001-03 to 2016-18*



Source: Ministry of Health Mortality data collection; ICD codes C00-C96, D45-D47

The table below shows the ten most common cancers causing death in the Auckland DHB during 2016-2018. Sixty eight percent of all cancer deaths in Auckland are covered in the top 10, and 43% are due to lung, colorectal, breast and prostate cancer. Half of all cancer deaths (50%) occur in the people aged under 75 years, but two in three of those dying of breast and liver cancer are aged under 75 years, as are 78% of those dying of brain cancer.

Figure 6.2.4.2: *Top 10 causes of cancer mortality by major site in Auckland DHB for 2016-2018**

Cancer type	Age (years)		
(ICD 10 code)	<75	75+	Total
Lung cancer (C33-C34)	192	149	341
Colorectal and anal cancer (C18-C21)	100	143	243
Female breast cancer (C50)	92	53	145
Prostate cancer (C61)	31	93	124
Pancreatic cancer (C25)	66	57	123
Liver cancer (C22)	55	30	85
Leukaemia (C91-C95)	34	39	73
Non-hodgkin lymphoma (C82-C86)	33	38	71
Malignant melanoma of skin (C43)	27	43	70
Brain tumour (C71)	46	13	59
Stomach (C16)	26	27	53
All other cancer	303	311	614
Total	**1,005**	**996**	**2,001**

** Data represent the number of deaths for a 3 year period*
Source: Ministry of Health mortality data collection

The most significant causes of cancer deaths in adults are lung cancer (30 per 100,000 population aged 25 years and over), colorectal cancer (21 per 100,000 population aged 25 years and over), breast cancer (25 per 100,000 women aged 25 years and over) and prostate cancer (22 per 100,000 men aged 25 years and over). The lung cancer mortality rates for Māori women and men (70 and 92 per 100,000 population aged 25 years and over) and Pacific men (79 per 100,000 population aged 25 years and over) are two to three times the rates for European/Other men (32 per 100,000 population aged 25 years and over). Māori develop lung cancer 6-8 years earlier than non-Māori and at lower exposure to smoking. With the incidence of lung cancer for Māori women continuing to rise steeply and an ongoing very high death rate from the disease, and it is likely that differences in mortality from lung cancer will persist for some time.

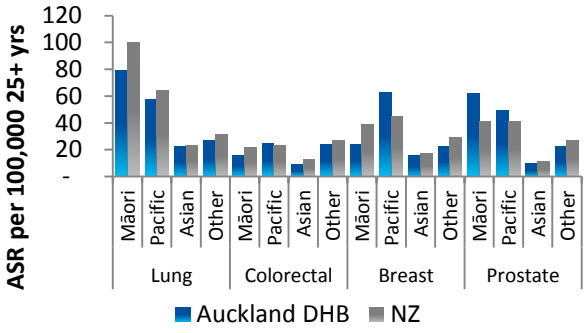
On average, 2,070 people are diagnosed with cancer per year in Auckland DHB, some of whom have more than one cancer. The age-standardised rate of cancers registered during 2017-2019 was 317 per year per 100,000 female population (vs. 314 in New Zealand) and 357 per 100,000 male population (vs. 370 in New Zealand). The most commonly registered cancers were breast, prostate, colorectal, melanoma and lung. Within these total figures, Māori and Pacific have higher rates of lung and breast cancer but very low rates of melanoma, compared with European/Others. Asian people have generally low rates of cancer registration except for lung cancer, where the rate is similar to European/Other people. Cancer hospitalisation rates tend to mirror the pattern for mortality, but skin cancer is the top cancer for hospitalisations.

The five-year relative survival rate for cancer in Auckland DHB is 69%, which is the highest in New Zealand. However, Australia performs better than New Zealand in treating cancers. If Auckland DHB had the same five-year survival rates as Australia, 25% of women who die of breast cancer within five years would survive for longer (7 per year). Similarly, 13% who die of bowel cancer within five years would survive for longer (8 per year). The difference is 46% (11 per year) for melanoma and 25% (5 per year) for non-Hodgkin lymphoma.

Rapid diagnosis and treatment of cancer increases the options for treatment and the chances of survival. In Auckland DHB we undertake routine screening for cervical and breast cancers. Cervical screening is offered every three years and 63% of eligible women (25-69 year olds) have taken this up, but this varies from 53% for Māori, and 51% for Asian women to 62% for Pacific women and 75% for European/Other women. Breast screening is offered every two years and 64% of eligible women (45-69 year olds) have taken this up, although Pacific women have a higher rate at 71%.

To support continued improvement in services and waiting times for people with cancer, accessing faster cancer treatment is a key priority. As at March 2019, 92% of cancer patients wait less than 62 days for treatment or other care to commence, compared with the target of 90%.

6.2.4.3: *Cancer mortality by ethnic group (ASR per 100,000 aged 25+ years) 2016-18 combined*



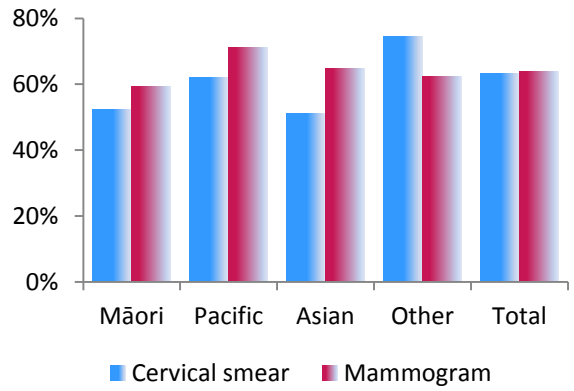
Source: Ministry of Health mortality data collection

Figure 6.2.4.4: *Most common causes of cancer registrations for Auckland DHB residents, 2017-2019 and five-year survival rates for 2012-13 registrations*

Cancer type	Registrations	Five-year relative survival rate	Deaths (16-18)
Female breast	945	93%	145
Colorectal	660	72%	243
Prostate	910	93%	124
Melanoma	686	95%	70
Lung	453	17%	341
Other	2,554		1,078
Total	**6,208**	**69%**	**2,001**

Source: NZ Cancer Registry, NZ Mortality data collection

Figure 6.2.4.5: *% of women up-to-date with cervical and breast screening March 2019, Auckland DHB*



Source: National Screening Unit

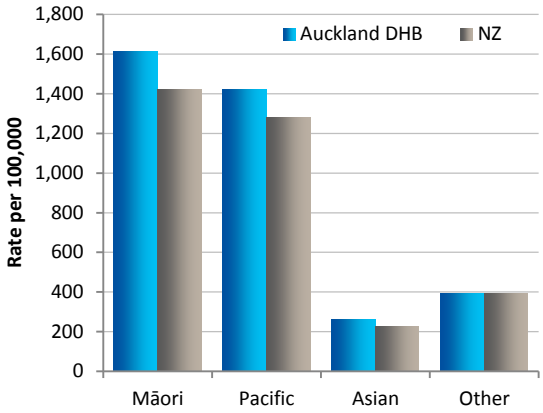
6.2.5 *Respiratory disease*

Respiratory diseases are conditions that impact the lungs and airways. They range from acute infections, such as pneumonia and bronchitis, to chronic conditions, such as asthma and chronic obstructive pulmonary disease (COPD). Respiratory disease accounts for about 200 deaths per year, or 8% of the total in Auckland DHB.

The prevalence of asthma for Māori (17%) is higher than the DHB overall rate (10%) found by the NZ Health Survey 2014-17, and Māori and Pacific hospitalisation rates are more than four times that of Asians and Europeans/Others, at 240 and 283 admissions, compared with 51 admissions per 100,000 population aged 15 years and over for European/Other and Asian people. Women have more than double the hospitalisation rate of men. Asian people had low asthma prevalence (4%) and low hospitalisation rates (51 admissions per 100,000 population aged 15 years and over). Among people admitted to hospital with a primary diagnosis of asthma (or wheeze in children aged 0-14 years), Auckland had significantly lower rates than average for dispensing one or more asthma inhalers in the year following their admission (63 vs. the New Zealand average of 81 per 1,000 population).

COPD is a particular burden for Māori and Pacific people. Age-standardised hospitalisation rates (ASR) per 100,000 for these groups are 1,611 (Māori) and 1,419 (Pacific), more than three times as high as those of European/Other ethnicity (394 per 100,000 population), and higher than for Māori and Pacific in New Zealand as a whole. One of the main risk factors for COPD is smoking.

Figure 6.2.5.1: *COPD hospitalisation (ASR per 100,000 aged 35+ years), 2013*



6.2.6 *Mental health and addictions*

Mental ill-health is a leading cause of disability and overall health loss. Mental health encompasses an array of disorders, including but not limited to depression, schizophrenia, dementia, intellectual disabilities and developmental disorders, including autism. Nationally, one in five people experienced some kind of mental illness in the last year and 3% experienced a serious mental illness. Half of those who develop mental health disorders have problems evident by the age of 15 years. Three out of four people who develop a substance use disorder do so by the age of 24 years.

Mental illness is associated with reduced life expectancy of ten or more years resulting from other illnesses, particularly cancer and cardiovascular disease. Even when these disorders are recognised, rates of intervention are lower for this population compared with people without mental illness.

There were on average 44 suicides per year in Auckland DHB over the five years to 2016, a

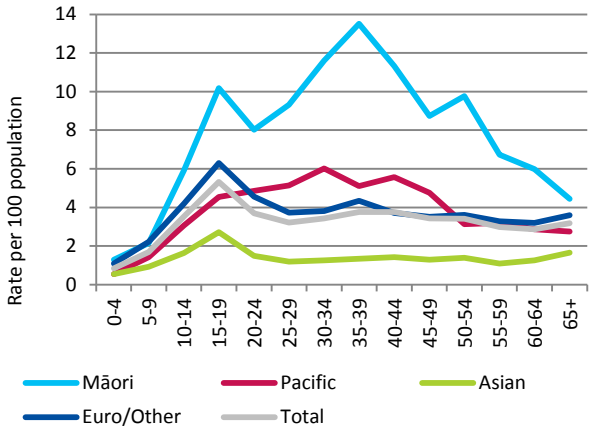
disproportionate number of whom were young and Māori. Auckland's age-standardised suicide rate of 8.3 per 100,000 population is slightly lower than the national rate of 11.3 per 100,000 population. People who make an unsuccessful suicide attempt are at high risk of making further attempts, and an estimated 9% die within five years. The New Zealand Mental Health survey (2006) found that 0.4% of adults had attempted suicide in the previous year.

Thirteen percent of adults in Auckland DHB report that they have depression, anxiety or bi-polar disorder (equivalent to around 55,000 people), compared with 18% in New Zealand (NZ Health Survey 2014-2017). Women reported these conditions at higher rates than men (16% vs. 11%). A recent survey by the Royal New Zealand College of General Practitioners estimated that mental health and addiction makes up around a third of all general practice consultations (RNZCGP 2019). In the Auckland DHB population, 3.3% (approximately 16,000 people) used secondary mental health services in 2019. Utilisation rates were higher among young people (aged 15-24 years), although rates remained high in later adulthood (age 25-49 years) for Māori and Pacific. Māori have double the utilisation rates of Pacific and European/Other ethnicities in all age groups except children aged 0-9 years and people aged over 65 years. Asian people have very low utilisation rates.

There are wide differences in the rates at which people of different ethnicities are diagnosed and access secondary services for the various types of mental illness. In particular, the prevalence of schizophrenia is more than double in Māori (1,996 per 100,000 population) compared with European/Other ethnicities (733 per 100,000 population). Conversely, European/Other people have a higher prevalence of depression (1,117 per 100,000 population) than Māori (800 per 100,000 population), Pacific (345 per 100,000 population) and Asian (252 per 100,000 population). Given the higher prevalence of psychological distress for Māori and Pacific people, of whom 9.7% and 10.1% experience distress compared with 6.5% overall, the low treatment rate for Pacific people may indicate poor access to services.

Nine out of ten (90%) adults accessing non-urgent mental health services in the year to March 2020 were seen within 3 weeks and 96% accessed services within 8 weeks. For those aged 0-19 years, a smaller proportion (68%) accessed services within 3 weeks and 94% accessed services within 8 weeks. Among older adults, 80% accessed services within 3 weeks and 94% accessed services within 8 weeks. Almost all 0-19 yr olds and over 65 year olds accessed non-urgent Alcohol and Drug services within 3 weeks, compared with 73% of those aged 20-64 years. Two-thirds (66%) of Auckland DHB residents who are admitted acutely to hospital had pre-admission care (vs. 56% for New Zealand) and 86% receive post-discharge care within 7 days (vs. 79% for New Zealand). Auckland DHB has lower readmission rates than the national average, with 9.2% of acute referrals readmitted within 28 days compared with 15.8% nationally. Auckland DHB has a mean length of stay of 28 days, which has reduced from 46 days in 2009/10; the national average is 17 days (2014/15).

Figure 6.2.6.1: *Rate per 100,000 population seen by secondary Mental Health and Addiction services by age and ethnicity, 2019*



Source: Programme for the Integration of Mental Health Data (PRIMHD)

6.2.7 *Injury*

Injuries have a substantial impact on health, both as a leading cause of premature death and through disability following an injury. Back disorders are the third highest specific condition causing health loss for men, and the second highest for women, accounting for 6.6% and 7.9% of total health loss, respectively.

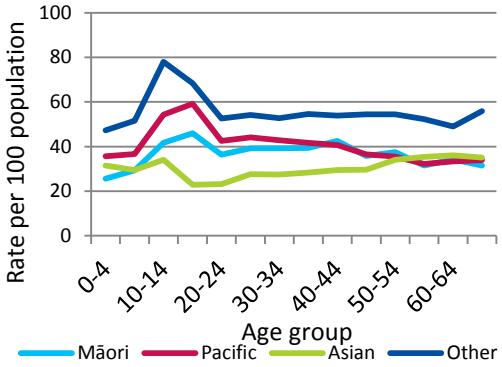
The age-standardised mortality rate from injury (excluding suicide) is 15 per 100,000 population, compared with 23 per 100,000 population for New Zealand. The rate for men is higher than for women (27 vs. 14 per 100,000) and the rates for Māori and Pacific men are particularly high at 37 and 30 per 100,000 population, respectively. For older people, falls are the largest cause of injury-related deaths, while for adults aged 45-64 years, suicide is the largest cause. For younger adults, road traffic accidents and suicide dominate.

Injury is an important cause of hospitalisation. The age-standardised rates for Māori (5,600) and Pacific (5,500) people per 100,000 population are considerably higher than for Asians (1,800 per 100,000) and Europeans/Others (4,100 per 100,000 population).

Injury is the leading cause of mortality and hospitalisation for children and young people aged between 1 and 24 years.

In 2018/19, 158,000 (33%) Auckland residents made claims to the Accident Compensation Corporation (ACC) for injury, an average of 4.4 claims for every ten people. The highest rates of claim occur in youths and young adults. European/Other people have higher rates than Pacific people and Māori, while Asian people have the lowest rates of claim. Soft tissue injuries make up 67% of claims, and 17% are for lacerations and puncture wounds. Fractures and dislocations account for 6% of claims. Most injuries occur at home (45%) or during sport or recreation (27%). Back/spine injuries account for 16% of claims; 31,000 people made claims for back/spine injuries.

Figure 6.2.7.1: *ACC claims for injury per 100 population, 2018/19*



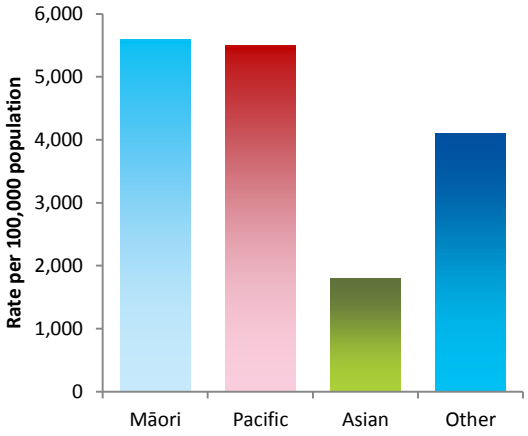
Source: Accident Compensation Corporation

Figure 6.2.7.2: *Mortality from injury by cause and age group, Auckland DHB, 2016-18*

Type	Under 15	15-24	25-44	45-64	65+	Total
Falls	0	0	3	10	112	**125**
Intentional self-harm	0	24	50	50	21	**145**
Road traffic injuries	2	9	13	14	11	**49**
Accidental poisonings	0	2	15	21	6	**44**
Violence	1	2	6	3	1	**13**
Drownings	2	4	3	3	6	**18**
Other transport injuries	0	0	2	0	1	**3**
Other accident	4	0	5	12	24	**45**
Total	**9**	**41**	**97**	**113**	**182**	**442**

Source: Ministry of Health mortality data collection

Figure 6.2.7.3: *Hospitalisations for all injuries per 100,000 population, Auckland DHB residents, 2012/13*



Source: Ministry of Health national data collection

6.2.8 *Disability*

Disability is a broad term and covers a range of conditions. These are broadly grouped into sensory (hearing and vision impairment), physical (mobility and agility), intellectual, psychiatric/psychological, and other disabilities (impaired speaking, learning and developmental delay in children aged 0-14 years, and impaired speaking, learning and remembering in adults).

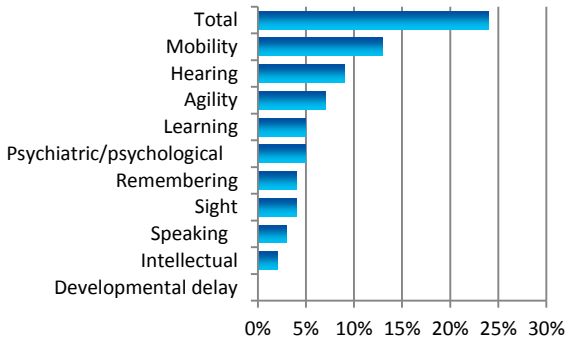
The 2018 census asked questions about disabilities that limit people's ability to carry out normal activities, for those aged 5 years and over. The quality of the data was poor with low response rates and so must be treated as incomplete. For Auckland DHB, 4,224 people reported a lot of difficulty seeing even with glasses, and 993 could not see at all. With regard to hearing, 3,330 had a lot of difficulty even if using a hearing aid, and 891 people could not hear at all. There were 6,540 people who had a lot of difficulty walking or climbing steps, and 1,914 could not do this at all, while 2,200 reported a lot of difficulty washing all over or dressing, and 1,992 could not do this at all. Remembering and concentrating caused a lot of difficulty for 4,800 people and 1,056 could not do this at all. In terms of communication difficulties, 2,307 had a lot of difficulty communicating in their usual language and 930 could not do this at all.

The 2019/20 New Zealand Health survey asked about disability using the same questions as the 2018 census. People reporting a lot of difficulty or complete inability to carry out any of the functions in the six questions were counted as disabled, and their survey responses were compared with responses from other people. Rates are adjusted for age and gender, and are for NZ as a whole. Disabled adults were less likely than non-

disabled adults to rate their health as excellent, very good or good (56% vs 90%); less likely to eat sufficient fruit and vegetables(27% vs 34%); less likely to be physically active (30% vs 54%); and less likely to meet sleep duration recommendations (49% vs 71%). They are more likely to smoke (19% vs 13%); more likely to experience psychological distress (K10 score) (27% vs 6%); more likely to have asthma (22% vs 11%); and more likely to have chronic pain (54% vs 17%). Disabled adults were more likely to have visited an ED in the past 12 months (33% vs 13%); and more likely to have unmet need for primary health care (47% vs 29%).

Only regional and national data is available from the 2013 New Zealand Disability Survey. One in five (19%) of the Auckland region population had a disability, which was lower than the New Zealand average (24%). Nationally, among adults, the percentage with a disability increases from 16% in young adults (aged 15-44 years) to 59% in older people (aged 65 years and older). Māori and Europeans have higher rates of disability than Asians (26% and 25% vs. 13%).

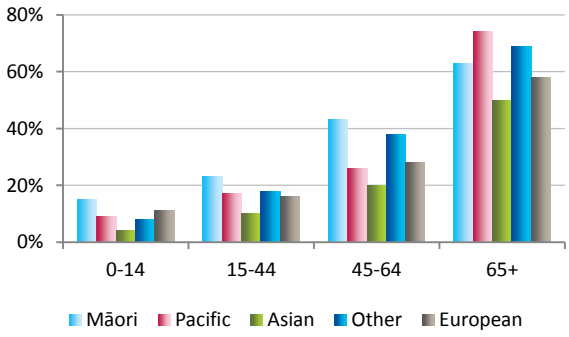
Figure 6.2.8.1: *Prevalence of disability by type of impairment (national)*



An individual may appear in more than one disability type

Source: NZ Disability Survey, 2013

Figure 6.2.8.2: *Prevalence of disability 2013 (National)*



Source: NZ Disability Survey 2013

Mobility, agility, hearing, sight and remembering are the most common disabilities in adults, while learning, speaking and psychological/psychiatric disabilities are the most common in children. Multiple disabilities are common and over half of those with disabilities report more than one problem. In children, disabilities present at birth are the most common type. In middle ages, disease, illness and accidents are important and the aging processes impact disabilities in older people.

In 2018, there were 11,260 people in the Auckland region (0.7% of those aged under 65 years) receiving disability support from the Ministry of Health. Of these, 44% had intellectual disability, 32% autism spectrum disorder and 20% physical disability.

6.2.9 *Pandemic infectious disease*

In 2020, the COVID-19 pandemic began. COVID-19 has been very severe and has spread around the world very quickly. But while it is very transmissible, the case fatality rate is low. WHO warns that we need to get ready for something which may be more severe in the future.

New Zealand's strategy of elimination has meant that although there has been severe disruption to health services, we have had few cases of serious disease and very few deaths. COVID-19 is likely to become another endemic virus; it is unlikely to be eliminated worldwide. The level of threat from it will depend on the degree of vaccine coverage that we can achieve, including regular re-vaccination against new variants. This will be particularly important for people with additional risk factors for experiencing severe disease such as older age groups and people with diabetes or obesity. A small proportion of people who contract the disease appear to never make a full recovery and may remain disabled by COVID-19 long-term.

6.2.10 *Sexual health*

Information on sexually transmitted diseases is limited in New Zealand. Sexually transmitted infections (STIs), with the exception of AIDs, were not notifiable in 2016. Surveillance efforts are based on the voluntary provision of data from sexual health clinics (SHCs), family planning clinics (FPCs) and laboratories. Sexual health services in the Auckland region are provided through primary health care, including Family Planning and regional SHCs and youth clinics.

In 2016, the Auckland region chlamydia rate was 643 cases per 100,000 population (vs. 651 per 100,000 nationally), and has been increasing since 2014, although it is still lower than the 2011 peak rate. More than two-thirds of laboratory-diagnosed cases of chlamydia in 2016 were females, partly reflecting that

80% of tests were for females, suggesting many infections in males remain undiagnosed and untreated. Chlamydia is most commonly diagnosed in females aged 15-19 years and males aged 20-24 years, in both the laboratory and clinic settings. Overall, there were 2.2 cases per 100 people in 15-19 year olds and 2.7 cases per 100 people in 20-24 year olds in Auckland in 2016. If the rates for females were replicated for males, which is likely the case, around 5 cases per 100 people aged 15-24 years occur each year (ESR, sexually transmitted infections in New Zealand 2016).

In Q4 2020, 9.9% of youth aged 15-24 years in Auckland DHB were tested for chlamydia.

6.3 Infants, children and young people

6.3.1 *Births*

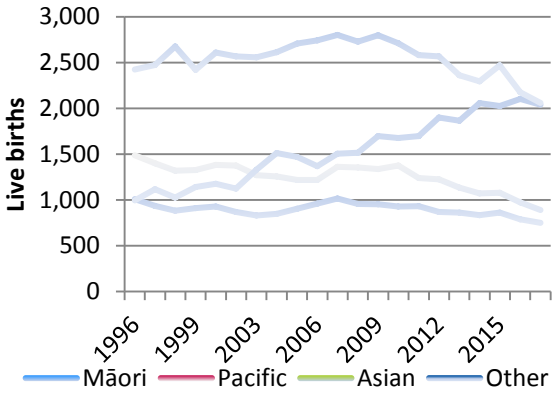
There was a gradual increase in the number of live births in Auckland, from 6,000 in 2003 to more than 6,700 in 2009, and then decrease to 5,700 in 2017 (Statistics NZ Registered Births 2017). The increase has not been steady, with a change between years of up to 400 births. The general fertility rate is 42.3 per 1,000 women aged 15-49 years. It is lowest for European/Other women, at 35.8, while the rate is much higher for Māori (60 per 1,000 women aged 15-49 years) and Pacific (65 per 1,000 women aged 15-49 years) than for Asian (41 per 1,000 women aged 15-49 years).

In 2016, 135 babies were born to young women aged 15-19 years, an overall rate of 8 per 1,000 women in this age group, compared with a national rate of 16 per 1,000 women aged 15-19 years. Again, the rate was higher for Māori and Pacific (28 and 23 per 1,000 women aged 15-19 years, respectively). The rate for European/Other and Asians was less than 2 per 1,000 women aged 15-19 years. There were 13 terminations of pregnancy per 1000 women aged 15-44 years in 2017 in the Auckland region, compared with 12 per 1,000 for New Zealand (Statistics NZ). If these follow national patterns, just over half of women having a termination used no contraception. Nationally, looking at all age groups, 18% of pregnancies (excluding miscarriages) are terminated.

In 2017, 7.2% of babies born had low birth weight in Auckland DHB, compared with 7.2% nationally. There were 36 admissions for pregnancy complications for every 100 live births in Auckland (23% higher than for New Zealand). Pacific mothers were more likely to be admitted, with a complication rate of 45 per 100 live births. In Auckland's hospitals, 30% of all births were by caesarean section. Māori and Pacific mothers were more likely to have normal deliveries.

Poor outcomes for pregnant women and their babies are associated with later engagement with health professionals, smoking during pregnancy and obesity, among other factors. Earlier access to a range of health advice, information and interventions can improve health outcomes. Six in ten (60%) of women were enrolled with a LMC at 12 weeks of pregnancy (2017). In 2013, 42% of women birthing at Auckland facilities were overweight or obese, including 18% who were obese. This varied across ethnicities, with 60% of Māori and 80% of Pacific mothers being overweight or obese. In the same period, 5.7% of mothers reported that they were smoking at the time of booking with an LMC, and 4.5% at the time of giving birth. Again, this varied, with higher smoking rates in mothers under 26 years old, mothers living in areas of high socioeconomic deprivation, and Māori and Pacific mothers. Gestational diabetes also varies across ethnic groups, with the highest rates found in Indian (19%), Asian (14%), Pacific (10%) and Māori (8%) mothers, compared with 4% in European mothers (National Women's annual clinical report 2013).

Figure 6.3.1.1: *Trends in live births for Auckland DHB by ethnicity, 1996-2017*



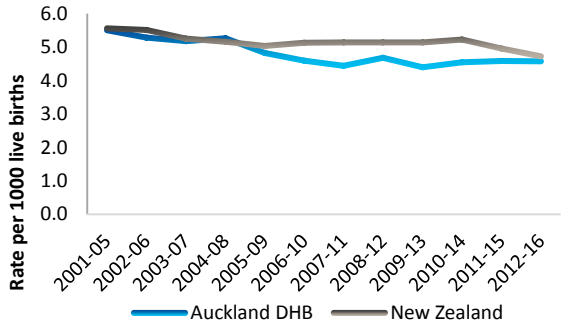
Source: Statistics New Zealand registered births

6.3.2 *Infants and children*

Infant mortality rates in Auckland were similar to New Zealand as a whole at 4.6 per 1,000 live births in 2012-16, compared with 4.7 per 1,000 live births. However, infant mortality rates were higher for Māori and Pacific (5.3 and 8.0 per 1,000 live births) than for Asian and European/Other ethnic groups (4.3 and 3.0 per 1,000 live births). The rate of sudden unexpected death in infancy (SUDI) at 0.4 per 1,000 live births in 2012-16 is lower than the national average of 0.7 per 1,000 live births (the difference is not statistically significant).

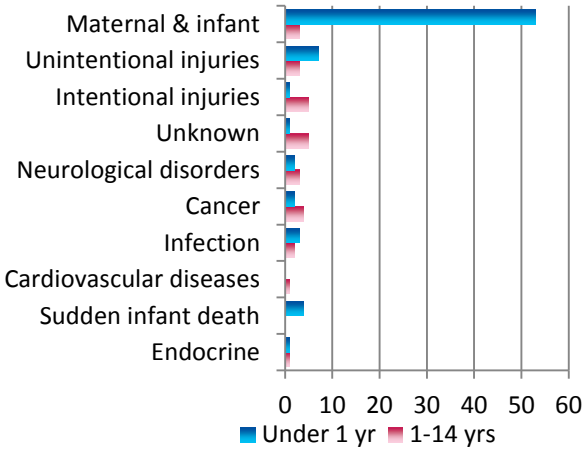
The death of a child aged under 14 years, after the first month of life, is a rare event with an average of 22 deaths a year in Auckland, with half of these being under one year of age. The most common causes of death in infants were perinatal (the period immediately before and after birth) conditions, congenital anomalies, accidental injuries and sudden infant death syndrome (SIDS). In children older than one year, the most common causes were accidents, suicide, heart diseases, cancer and congenital anomalies.

Figure 6.3.2.1: *Trend in infant mortality rate per 1,000 live births, 2001-2016, five-year averages*



Source: Ministry of Health, 2018 year of registration

Figure 6.3.2.2: *Numbers of deaths among Auckland DHB children aged 0-14, 2009-11*



Source: Ministry of Health mortality data collection

New Zealand has some of the highest rates of rheumatic fever of any developed country, particularly among Māori and Pacific children. The incidence of rheumatic fever in Auckland DHB was 3.9 per 100,000 population, higher than the national incidence of 3.2 per 100,000 population.

There were 195 admissions to hospital in 2013 for every 1,000 Auckland children aged 0-14 years for medical or surgical reasons. The most common acute admissions were for respiratory infections, gastroenteritis, injury, asthma, viral infections and skin infections. In 2012/13, there were 21.5 admissions per 100,000 population aged 0-14 years for injuries resulting from domestic assault, neglect or maltreatment of children.

In March 2020, 71% of babies were living in smoke-free homes at 6 weeks of age. This varied across ethnicities, with 48% of Māori babies and 47% of Pacific babies in smoke-free homes.

A general practitioner (GP) is often the first point of contact when a child becomes unwell. Enrolling with a primary health organisation (PHO) ensures that access to a GP can be quick and easy, and that the PHO has a history of the child's health, ensuring the best possible care. PHO enrolment has other benefits, such as reminders regarding routine health checks and upcoming vaccination events. The percentage of children enrolled with a PHO by the age of three months was similar to the national average (90% vs. 91%, Sep 2019). Māori infant enrolment was significantly lower at 75%. The rate of referral by LMCs to a Well Child/Tamariki Ora (WTCO) provider was 99% (vs. 98% for New Zealand). Completion of core WCTO contacts within the first year of life was 75%, which was below the target of 90% and a little below the national average of 76%. However, the figures were 68% for Māori children and 64% for Pacific children.

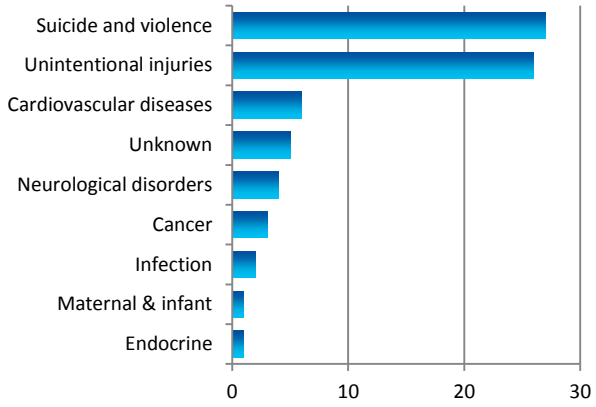
Auckland is close to achieving the immunisation target of 95% at 8 and 24 months, with 93% of children fully immunised at 8 months and 93% fully immunised at 24 months of age. Overall, 89% of four-year-olds received a comprehensive health check before school entry (B4 School Check), compared with the target of 90% and the national average of 91%.

6.3.3 *Young people*

In 2020/21, there were 73,580 young people aged 15-24 years living in Auckland DHB, including 7,830 Māori, 10,330 Pacific, 26,800 Asian and 28,620 European/Others.

During 2016-2018, an average of 26 young people died each year in Auckland. Most of these died from injury or suicide.

Figure 6.3.3.1: *Numbers of deaths among Auckland DHB young people aged 15-24, 2009-11 combined*



Source: Ministry of Health mortality data collection

There were 116 admissions to hospital for every 1,000 young people in Auckland. The most common admissions were for injury, complications of pregnancy, undiagnosed signs and symptoms, and digestive system disorders.

Figure 6.3.3.2: *Most common causes of hospitalisation in Auckland DHB young people aged 15-24 years, 2013*

Cause	Rate per 1,000 population
Injury	28.4
Complication of pregnancy	24.3
Non-specific conditions	13.9
Other digestive system	9.1
Diseases of skin	5.0
Other kidney diseases	5.0
Infectious Diseases	4.7
Other respiratory	3.9
Other diseases nervous system	2.8
Diseases of kidney	2.7
Diseases of musculoskeletal system	2.4
Alcohol abuse	1.8

Source: Ministry of Health data collection (NMDS)

6.4 Older people

There are over 61,000 people aged 65 years or older in Auckland and, of these, 7,410 are aged 85 years and older (population projection based on 2018 census). Our older population is predominantly made up of European/Other ethnicities, with 12% of those aged 85 years and older being Māori, Pacific or Asian.

The most common causes of mortality and hospitalisation for older people are similar to the population as a whole. In Auckland, the leading causes of death among older people are IHD, stroke, COPD, lung cancer and diabetes. Cancers collectively account for 25% of deaths. In winter, the number of deaths increases and Auckland DHB records 63 extra deaths compared with the number expected during the warmer months.

The leading causes of hospitalisation are for injuries, IHD and angina, respiratory infections, musculoskeletal diseases and diabetes. In 2013, there were 444 hospital admissions for every 1,000 older people.

Figure 6.4.1: *Hospital discharges per 1,000 Auckland DHB people aged 65+ years, 2013*

	Condition	Rate
Female	Injury	67.5
	Non-specific conditions	47.6
	Musculoskeletal diseases	18.2
	Ischaemic heart diseases	12.3
	Chronic lower respiratory diseases	13.7
	Diabetes	11.4
Male	Injury	60.3
	Non-specific conditions	56.9
	Musculoskeletal disease	21.1
	Ischaemic heart disease	20.0
	Chronic lower respiratory diseases	15.0
	Diabetes	14.3

Source: Ministry of Health data collection (NMDS); not age-standardised

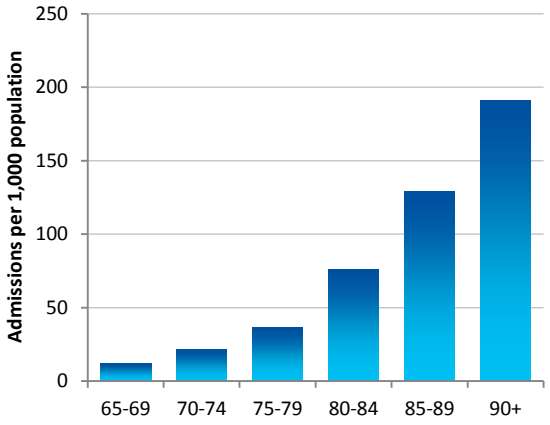
Older people have higher levels of health need and often have multiple health problems. The NZ Disability Survey 2013 found that nationally, 59% of people aged 65 years and over have a disability, with 46% having mobility problems, 28% agility problems, 28% a hearing disability, 11% a sight problem and 10% having difficulty with remembering. In Auckland DHB, 12% of older people have ischaemic heart disease, 13% have diabetes, 39% have arthritis and 18% have a mental health disorder (NZ Health Survey 2014-2017). Around 7% of those aged over 65 years have dementia and this rises to over 25% in people aged 85 years and over.

Falls are a common cause of hospital admissions for injuries, causing 45 admissions per 1,000 people aged 65 years and over. Older people are more at risk, with the rate ranging from 12 admissions per 1,000 people aged 65-69 years rising to 191 admissions per 1,000 people aged 90 years and over. Of the patients admitted with a fractured neck of femur, 89% are aged 65 years and over.

The large majority of older people in Auckland are able to live unassisted in their own homes. Over half (52%) of people who are 85 years or older receive no funded living assistance, while 26% are funded to live in a rest home or private hospital and 22% have some funded support at home. Many older people continue to work or do voluntary work.

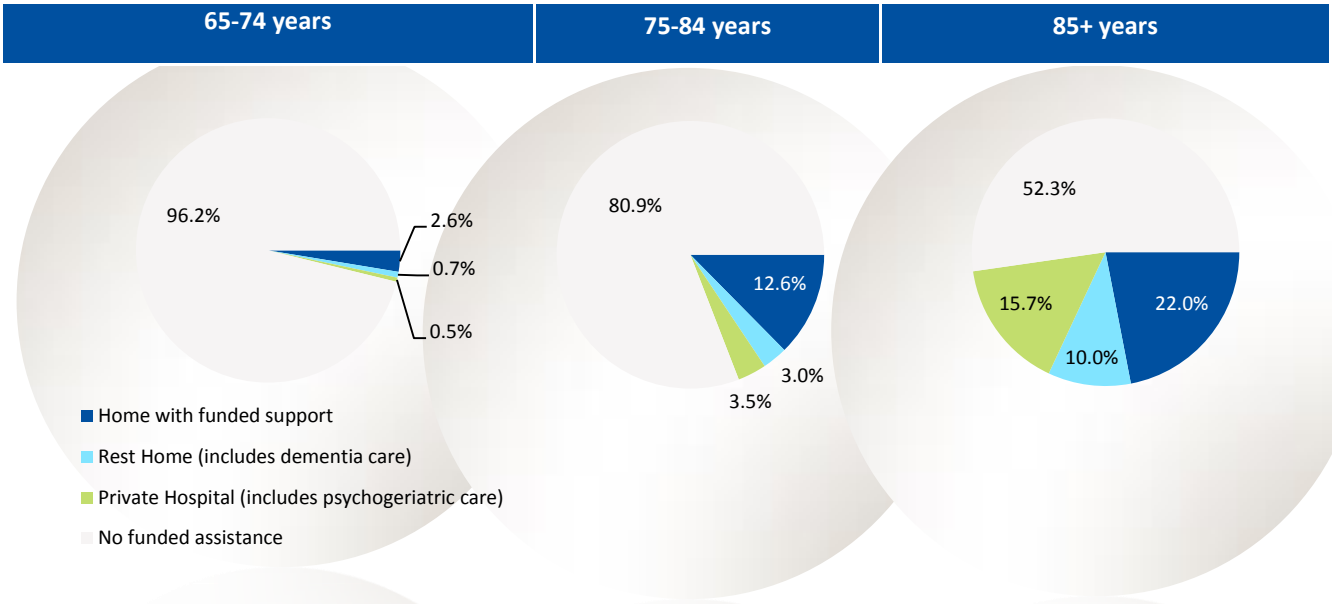
Auckland DHB offers free influenza vaccinations to those aged 65 years and over. Around half (52%) of people over the age of 65 years received an influenza vaccine in 2019. Evidence suggests the effectiveness of influenza vaccination in the community-dwelling elderly is modest. There is some evidence that in long-term care facilities, influenza vaccination is effective against complications (National Specialist Influenza Group 2014).

Figure 6.4.2: *Falls admissions for Auckland residents per 1,000 population aged 65 years and over, 2013/14*



Source: Ministry of Health data collection (NMDS)

Figure 6.4.3: *Proportion of older people receiving support, Auckland DHB, 2013*



Source: HealthPac data collection for residential care claims

7 Health Services

7.1 Community health care

Primary health care services are often the first point of contact with health services. General practices undertake a number of recommended preventive health interventions, including smoking cessation advice and support, CVD risk screening, cervical screening and vaccinations.

There are five primary health organisations (PHOs) operating in Auckland DHB, with 151 general practice offices. The three Metro Auckland DHBs jointly have a smaller proportion of New Zealand's total GP numbers than expected for the population size (32.1% vs. 34.2%) (NZMA 2019).

Overall, 94% of residents are enrolled with a PHO. While people are free to enrol in any practice in the country, 89% of people in Auckland DHB are enrolled with practices in Auckland DHB-based PHOs. Only a small proportion of the Auckland DHB population (0.2%) are enrolled outside of the greater Auckland area. The recording of ethnicity in PHO enrolment data contains some errors, but it is clear that Māori and Asians have lower enrolment rates than average. Enrolment rates also vary by age, with 29% of 15-24 year olds and 17% of 25-44 year olds not enrolled with a PHO (source: Ministry of Health enrolment data).

Three out of four (78%) of the Auckland DHB population have seen a general practitioner (GP) in the last year. Asian people are less likely to have seen their GP and/or the practice nurse. Most people in Auckland DHB (86%) are able to get an appointment with their GP within 24 hours, compared with 82% nationally. Almost one in four people (23%) report problems accessing a GP because of cost, availability of appointments, or transport issues. Overall, 11% of adults reported that the cost had prevented them, on at least one occasion in the past year, from visiting a GP. For Māori and Pacific people, the figure was much higher at 17% and 19%, respectively. Similarly, although 5.8% overall said that cost had prevented them from filling a prescription, the figure was 12% for Māori and 18% for Pacific people (NZ Health Survey 2014-17).

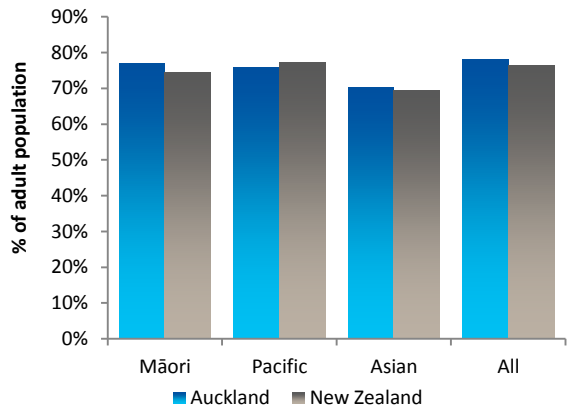
Information about the nature and quality of GP consultations is only available at a national level. Most consultations (88%) are with a GP that the person has seen before. The average consultation lasted 15 minutes and the large majority of people felt that their doctor listened to them well and discussed their healthcare with them. Half of the problems GPs were seen for were new or short-term problems being followed up; about a third were long-term problems, with only 5% being for preventive care. Two-thirds of people received a prescription from their visit, nearly a third had some form of test and one in six was referred to another health professional.

Figure 7.1.1: *Enrolment by PHO, July 2020*

PHO Name	% of Auckland DHB population enrolled with PHO
ProCare Networks Limited	58%
Total Healthcare PHO	10%
National Māori PHO Coalition Incorporated	9%
Auckland PHO Limited	8%
Other	8%
Not enrolled	6%

Source: Ministry of Health enrolment data

Figure 7.1.2: *Utilisation of General Practitioner in the past year, 2014-17*



Source: NZ Health Survey

7.1.1 *Oral health*

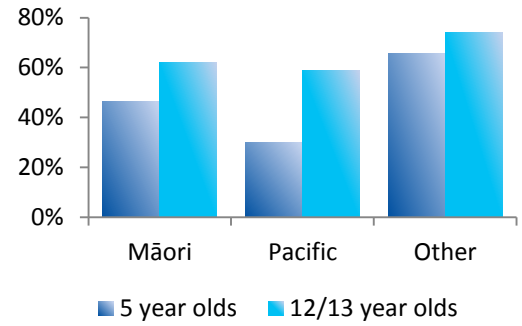
Poor oral health and chronic pain from oral health conditions can negatively affect children's growth and development and reduce people's quality of life. Good nutrition and oral health during pregnancy and the establishment of sound oral health behaviours for the infant in the first year of life may prevent childhood dental caries and improve overall oral health.

Auckland children have better oral health than New Zealand children as a whole. However, Māori and Pacific children have poorer oral health than those of other ethnicities. Nearly all pre-school children (97%) are enrolled with oral health services in Auckland DHB, although only 77% of Māori and 92% of Pacific children are enrolled (2019). However, 29% of pre-school children were overdue for a scheduled examination (37% of Māori and 40% of Pacific children). For European/Asian/Other five-year-olds, two out of three (66%) were caries free, compared with 46% of Māori and 30% of Pacific children. Five-year-olds in Auckland have an average of 2.0 decayed, missing or filled teeth (DMFT). Māori children have an average of 2.4 DMFT and Pacific children have an average of 3.6 DMFT, while European/Asian/Other children have an average of 1.5 DMFT. DMFT rates have increased for all ethnicities aged five years since 2013, although this may reflect greatly increased enrolment rates.

Nationally, approximately 56% of children aged 2-11 years brush their teeth twice daily. This is lower for Māori and for those living in in NZDep13 quintile 5 areas. Utilisation of community oral health services by adolescents aged 13 -17 years is approximately 81% for Auckland DHB (2019), which is below the target of 85% but higher than the national average of 69%. National data shows that approximately 13% of adolescents aged 12-17 years have dental decay. Dental decay is more prevalent in Māori and Pacific adolescents and those living in quintile 5 areas. The proportion of Year 8 school children (aged 12-13 years) in Auckland DHB who are caries free is 69% (2019). Year 8 children have an average of 0.6 DMFT. Māori and Pacific children have an average of 0.8 and 0.9 DMFT, respectively, while European/Asian/Other children have an average of 0.5 DMFT. Approximately 59% of adolescents brush their teeth twice daily. This is lower for Māori, and those living in quintile 3-5 areas. Approximately one in four adolescents experiences trauma to the upper front six teeth.

About 4% of adults have had one or more teeth removed in the past 12 months (due to decay, an abscess, infection or gum disease) (NZHS 2017). Just over half (56%) of European/Other adults, 36% of Māori, 35% of Pacific and 30% of Asian adults have seen an oral health worker in the last year. About half of Auckland residents only visit a dental health care worker for toothaches/dental problems or never. This varies across ethnic groups, with a smaller proportion of European/Other adults (33%) than of Asian (64%), Māori (60%) and Pacific (74%) adults are likely to only visit a dental health care worker for toothaches/dental problems or never. Approximately 71% of adults brush their teeth twice daily.

Figure 7.1.1.1: *Proportion of Auckland DHB children examined who were caries-free, 2019*



Source: Ministry of Health Quarterly Non-Financial Indicators

7.2 Hospital-based health care

Auckland DHB has three major facilities: Auckland City Hospital, Greenlane Clinical Centre and the Buchanan Rehabilitation Centre in Pt Chevalier. We provide emergency, medical, surgical, maternity, community health and mental health services. More than half the work done within Auckland DHB hospitals is for people who live outside of Auckland DHB. It is the regional provider for kidney transplantation, neurosurgery, cardiothoracic surgery, ophthalmology, most paediatric surgery, and the hub of the regional cancer network. Some specialist services are provided to the whole of New Zealand; these include: organ transplants (heart, lung and liver), specialist paediatric services, epilepsy surgery and high-risk obstetrics.

7.2.1 *Emergency Departments (EDs)*

About one in eight of our adult population and one in five of our child population visited a hospital emergency department (ED) in 2017/18. The age-standardised rate of ED attendances by Auckland adult residents increased over the ten-year period by 18-27% for non-Europeans, but did not increase for Europeans. Access to ED care is good, although in Q4 of 2019/20, 93.8% of patients were either discharged or moved to a ward within six hours of presenting to the ED, which was lower than the Ministry of Health's target of 95%.

Figure 7.2.1.1: *Emergency Department attendances, adult, age-standardised rate per 100,000 population*

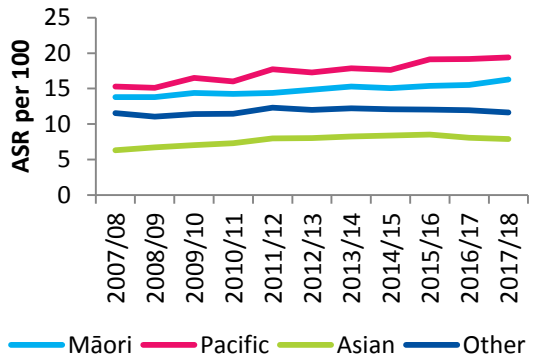
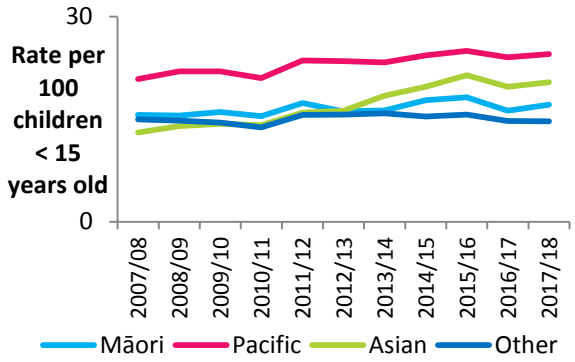


Figure 7.2.1.2: *Emergency Department attendances, children, rate per 100 population aged <15 years*



Source: Ministry of Health national collection (NNPAC)

7.2.2 *Outpatient services*

For every 100 adults in Auckland DHB, there were 11.7 outpatient first specialist assessments (FSAs) for medical, surgical and obstetric specialties in 2017/18. Pacific people have the highest FSA rate (16.0 per 100 age-standardised population) and Asian people have the lowest (9.5 per 100 age-standardised population).

Figure 7.2.2.1: *Outpatient FSA, adults, medical, surgical and obstetric, age-standardised rate per 100 population*

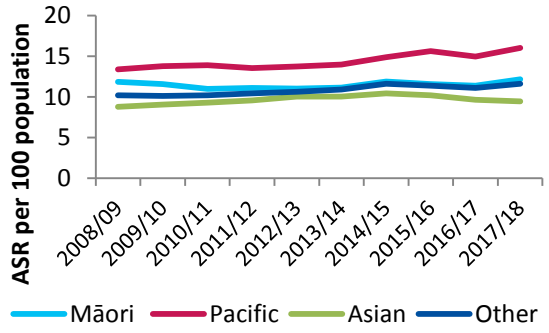
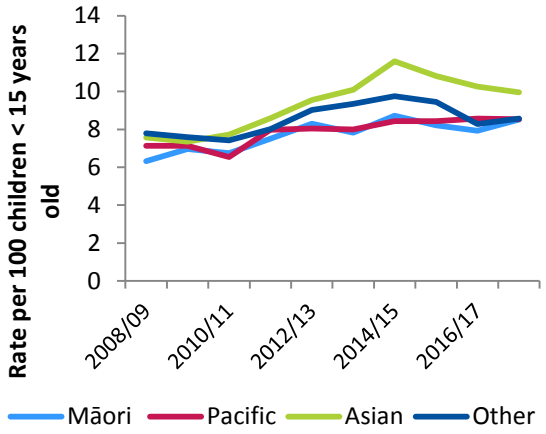


Figure 7.2.2.2: *Outpatient FSAs, children, medical and surgical, rate per 100 children aged <15 years*



Source: NNPAC, StatsNZ population estimates 2018

7.2.3 *Admitted patients*

In 2018/19, New Zealand hospitals provided over 206,000 bed days of service for Auckland DHB residents (medical/surgical/maternity, i.e. excluding mental health and disability support/rehabilitation). This is an average of 566 patients in beds each day. Auckland DHB provided 91% of this, with 6% provided by Counties Manukau DHB, 2% by Waitematā DHB and 1% by agencies outside the Auckland region. People aged 65 years and over make up 11% of the population but account for 28% of medical/surgical admissions and 41% of beds used. The number of people aged 65 years and over is projected to double over the next twenty years and this will cause a large increase in demand for hospital beds.

Compared with the New Zealand average, Auckland has a lower admission rate for adults, but a higher rate for children. The figures for elective admissions exclude patients who funded their own treatment (through insurance or direct payment). Although the population has increased by 24% over the period shown and the admission rate has remained steady, the number of beds used in this group of specialties increased by only 7%, because lengths of stay have reduced from an average of 2.5 days in 2007/08 to 2.1 days in 2018/19.

Hospitalisations for medical services are very much dominated by older people, whereas surgical hospitalisation is distributed among different age groups fairly evenly. Māori people have lower rates of hospitalisation for elective services, at about 90% of the rate for Pacific and European/Other people, while the rate for Asian people is half the rate for Europeans/Others.

Figure 7.2.3.1: *Admission rate, adults, age-standardised per 100 population, medical and surgical specialties, 2007/08-2018/19*

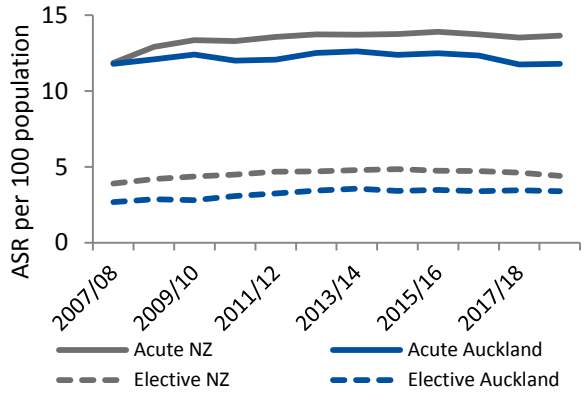


Figure 7.2.3.2: *Admission rates, children, rate per 100 population < 15 years, medical and surgical specialties, 2007/08-2018/19*

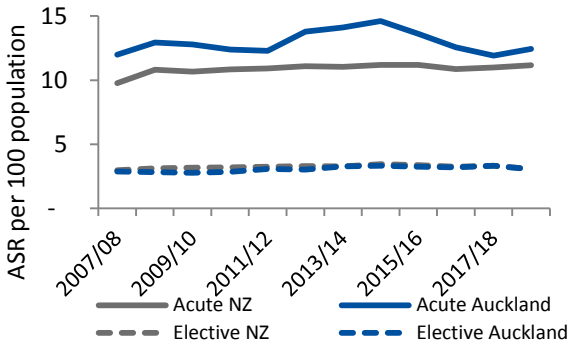


Figure 7.2.3.3: *Admission rate, adults, age-standardised per 100 population, by ethnicity, 2007/08 – 2018/19*

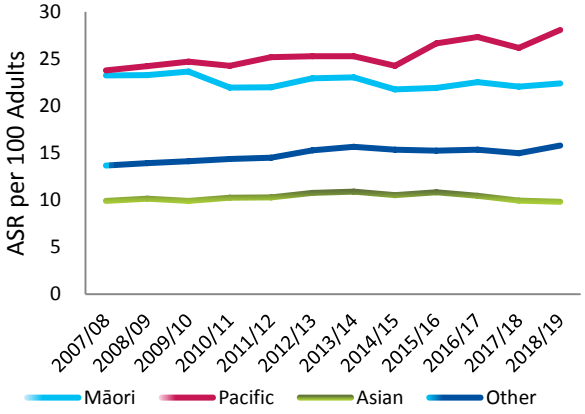
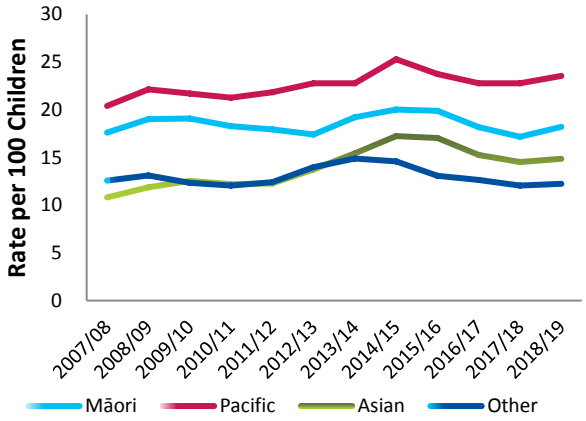


Figure 7.2.3.4*: Admission rate, children, per 100 population aged < 15 years, by ethnicity, 2007/08 – 2018/19*



Source: Ministry of Health national data collection (NMDS) Public hospitals

7.2.4 *Access to publicly-funded elective surgery*

The Ministry of Health set a goal of improving access to elective surgery, both in terms of volumes of operations and speed of access, and of equalising access across DHBs. From 2000 until June 2013, all patients needing first specialist assessment in outpatients or needing elective surgery had to be treated within six months. Between July 2013 and December 2014, the target waiting time reduced to a maximum of four months. The volume target for Auckland residents was 23,831 planned care interventions for 2019/20. However, the impact of COVID-19 delayed planned care services and as a result, waiting times increased beyond the target. As noted above, the elective hospitalisation rate is lower than the national average, but the gap has been closing since 2007.

A more tightly-defined measure of access is the Ministry of Health report for selected surgical procedures. This compares the rate for each DHB with the overall rate for New Zealand by calculating standardised discharge ratios. A ratio higher than 1.0 indicates that access is better than the national average. Access to publicly funded cataract surgery for Auckland DHB residents is 22% above the national average, but access to hip replacement surgery is 79% of the national average. Access to hernia repair is also low, at 75% of the national average rate. Access to elective heart valve replacements and repair and to coronary artery bypass grafts fluctuates from year to year.

Figure 7.2.4.1: *Standardised discharge ratios for selected surgical procedures, 2016/17 to 2018/19*

Surgical procedure	Discharge ratios		
	2016/17	2017/18	2018/19
Coronary artery bypass grafts (CABG)	0.78	1.05	0.89
Angioplasties	0.9	0.93	0.90
Heart valve replacements and repair	0.94	0.83	0.98
Total hip replacement	0.5	0.71	0.79
Total knee replacement	0.81	0.90	0.96
Cataracts	1.11	1.28	1.22
Repairs of hernia	0.75	0.75	0.75

Source: Ministry of Health Standardised Discharge Ratios for selected elective surgical procedures)

7.2.5 *Hospital quality and safety*

Our hospital services monitor a number of measures of quality and safety. Key among these is the hospital standardised mortality ratio (HSMR). For Auckland City Hospital, this has remained stable for the past four years, at around the average level for comparable hospitals. Hand hygiene in Auckland hospitals is similar to the national average, with 76% compliance with the five moments for hand hygiene in 2014. The rate of falls in hospital was 4.3 per 1,000 occupied bed days. We also ask patients about their care in hospital and 85% rate it as excellent or very good.

Figure 7.2.5.1: *Auckland City Hospital standardised mortality ratio vs. other New Zealand facilities, 2013*

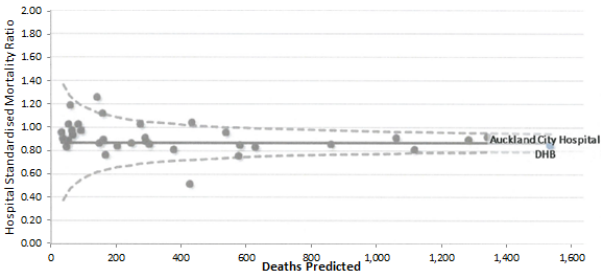
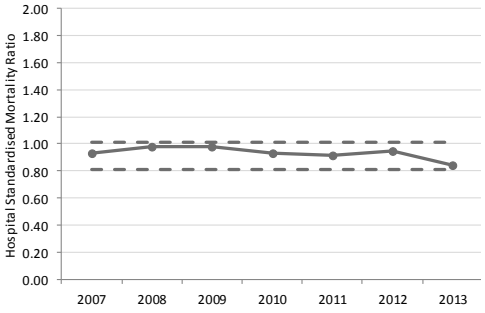


Figure 7.2.5.2: *Auckland City Hospital standardised mortality ratio trend*



Observed Deaths	1,252	1,257	1,331	1,321	1,302	1,389	1,270
Predicted Deaths	1,346	1,284	1,354	1,420	1,421	1,471	1,502

Source: Ministry of Health

7.2.6 *Avoidable causes of hospitalisation*

Avoidable hospitalisation (AH) is a useful measure for examining our ability to improve health and reduce inequalities. Hospitalisation can be avoided by injury prevention, good quality primary care, including management and prevention, and population-based health promotion (such as anti-smoking education).

The most common avoidable hospitalisations are for angina, cellulitis, and upper respiratory infections. For women, kidney and urinary tract infections are common. Asthma and diabetes are common causes among Māori and Pacific people.

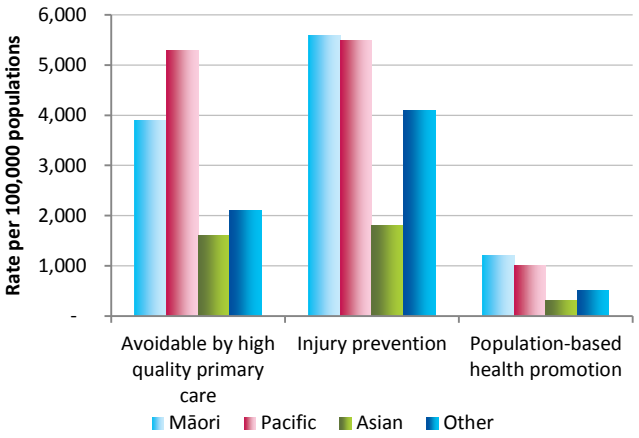
Auckland has a similar avoidable hospitalisation rate to New Zealand. The Māori avoidable hospitalisation rate is double that of other ethnicities and the Pacific rate is more than double. Asian is lower than European/ Other ethnicities. Rates are higher in residents of Whau and Maungakiekie-Tamaki than other local boards.

Figure 7.2.6.1: *Age-standardised avoidable hospitalisations per 1,000 population, 2013*

	Māori	Pacific	Asian	Other
Angina and chest pain	4.9	5.8	3.2	3.0
Cellulitis	7.3	9.7	1.5	3.2
Upper respiratory infection	3.2	3.6	1.0	2.5
Gastroenteritis	1.8	1.9	0.7	1.7
Kidney/UTI	2.2	3.4	1.0	1.3
Dental conditions	*<1.8*	2.4	1.4	1.1
Respiratory infection	2.3	4.4	*<0.7*	0.9
Asthma	2.3	3.1	0.8	0.8
Diabetes	2.8	7.1	1.8	0.8

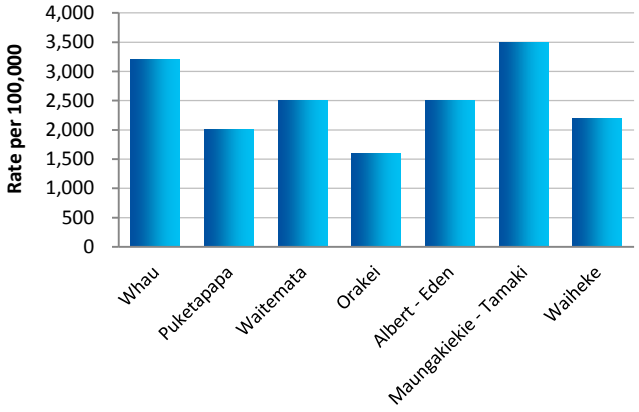
Source: Ministry of Health national data collection (NMDS)

Figure 7.2.6.2: *Avoidable hospitalisation by ethnic group (age-standardised per 100,000 population), Auckland DHB, 2013*



Source: Ministry of Health national data collection (NMDS)

Figure 7.2.6.3: *Avoidable hospitalisations by local board area (age-standardised per 100,000 population), 2013*



8 Data and Information Sources

This section describes the key data sources used in this report. A number of surveys and studies that are specific to certain sections of the report are described in the relevant section.

8.1 Major data sources

Ministry of Health

The New Zealand Ministry of Health (MoH) manages a number of databases, including the Mortality Data Collection, National Minimum Data Set (NMDS), National Non-Admitted Patient Data Collection (NNPAC), Cancer Registration data collection and Programme for the Integration of Mental Health Data (PRIMHD). All diagnoses are classified according to the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-AM).

Hospital discharge data

The Ministry of Health collects data on every discharge from a public hospital, in a collection called the NMDS. Day cases are included in this data but attendances at outpatient clinics or emergency departments for care lasting under three hours are not included. Hospital data include patients who die in hospital after formal admission. A general issue with using hospitalisation rates for outcome measures is that reductions in such rates can reflect either a real decrease in incidence, improved primary health care (thus reducing the need for hospital care), or a decrease in access to (or provision of) hospital services. The relative importance of these factors is often not known. This collection is updated continuously.

Outpatient data

The NNPAC provides nationally consistent data on non-admitted patient activity. Information about Auckland population's use of outpatient clinics is drawn from this source.

Mortality data

The mortality statistics maintained by the MoH are based on death certificates completed by medical practitioners, post-mortem reports, coroners' certificates, and death registration forms completed by funeral directors. Supplementary data are obtained from a variety of other sources (such as public hospitals and the National Cancer Registry). While the total numbers of deaths is available to 2019, detailed information about causes of death is only complete up to 2018. Mortality data for 3 years was used in an attempt to ensure sufficient numbers for analysis.

Cancer registration data

The National Cancer Registry (NCR) was established in 1948 and is now maintained by the MoH. It is a register of people who develop all types of cancer, except basal and squamous cell skin cancers. The Cancer Registry Act 1993 requires all pathology laboratories to supply the NCR with a copy of any pathology report with a diagnosis of cancer and related conditions. This data is somewhat older than other NMDS data, but is the most recent available.

Programme for the Integration of Mental Health Data (PRIMHD)

The information collected by PRIMHD relates to the provision of secondary mental health and alcohol and other drug services, which are funded by the government. Providers include DHBs and, to a limited degree, non-government organisations (NGOs). The collection does not include information on primary mental health services.

The 2013/14 to 2016/17 New Zealand Health Survey (NZHS)

This national face-to-face survey was completed each year in 2013/14 to 2016/17, and the results combined to give larger samples and more robust information (Ministry of Health 2013). The NZHS supplied data by ethnicity for the three Metropolitan Auckland DHBs. Approximately 800 adults and 200 children were surveyed in Auckland DHB for 2017.

The survey provides information on:

- selected health risk behaviours (e.g. smoking, diet, physical activity, alcohol and drug use)
- the health status of New Zealanders, including their self-reported physical and mental health status and the prevalence of selected conditions, including diabetes
- the utilisation of health services
- a number of demographic characteristics, such as age, gender, ethnicity and income.

Where estimates are provided for Auckland populations, they may be either direct survey estimates or synthetic estimates. Since the sample sizes for the overall Auckland population was reasonably large, direct estimates can be calculated

using only the respondents from Auckland DHB. However, for ethnic-specific estimates, sample sizes were too small, so estimates were derived by the Health & Disability Intelligence Unit (HDIU), Ministry of Health from a statistical regression model. These estimates are only available for adults. The main results by DHB (but not by ethnicity within DHB) are available on the Ministry of Health website.

The Quality of Life Survey

This survey was undertaken in 2012 with a sample size of 2,585 adults (aged 18 years and older) across the Auckland Council area. Of these, just under 1,000 lived in Auckland DHB wards, including Whau and Mangere-Otahuhu. The overall response rate was 57%. The information is available by ward, age or ethnicity. The survey covers a wide range of questions on topics that are important to wellbeing.

Virtual diabetes register 2019

The Ministry of Health used data from the community laboratory testing claims system, community pharmaceutical dispensing claims system and from NMDS and NNPAC to construct an anonymised register of individuals diagnosed with diabetes. This can be used to estimate prevalence of diabetes and methods of management.

Census and demographic data

A New Zealand Census of Population and Dwellings is normally held every five years. Everyone in the country on census night, including visitors to the country, must fill out an individual census form. The latest census was carried out in March 2018.

The New Zealand Census collects limited health information but contains much social and economic information that was useful in describing the factors that determine health. In addition, the census forms the basis for determining Auckland's and New Zealand's denominator populations when calculating rates.

The 2020 set of population projections used here is based on the 2018 census. Projections are made on the basis of assumptions about a number of factors, including migration, fertility and mortality. This set uses assumptions specified by the Ministry of Health, and is a 'medium' projection. The assumptions include updated projections of migration post-COVID-19. Statistics NZ has not yet produced an official set of projections based on the 2018 census, although this will be produced in 2021. Projections should be viewed as guidelines rather than exact forecasts.

Birth registrations

This includes all live and still birth registrations from Births, Deaths, and Marriages.

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Waitematā and Auckland District Health Boards (2020) Asian, New Migrant, Former Refugee & Current Asylum Seeker Health Plan 2020-2023

Appendix 1: Data table

Section	Indicator	Auckland DHB	Māori	Pacific	Asian	European/ Other	New Zealand
Our population	Population projection 2020/21	507,370	41,330	55,820	174,240	235,980	5,105,380
	% of population	100%	8.1%	11.0%	34%	47%	
	National proportions	100%	16.8%	6.8%	17%	60%	
	Annual growth %	0.73%					
	Age under 5 years - number	24,970	3,260	3,950	9,340	8,420	303,805
	Age under 5 years - % of all ages	5.1%	8.5%	7.9%	5.8%	3.4%	6.0%
	Age 65+ years - number	61,510	2,800	4,450	13,830	40,430	807,385
	Age 65+ years - % of all ages	12.1%	6.8%	8.0%	7.9%	17.1%	15.8%
	Age 75+ years - number	25,640	870	1,500	5,020	18,250	339,320
	Age 75+ years - % of all ages	5.1%	2.1%	2.7%	2.9%	7.7%	6.6%
	Age under 25 years - % of all ages	30.1%	43%	42%	31%	25%	32%
	Projected population in 2040/41	586,760	46,980	64,380	261,100	214,300	5,879,625
	Projected number aged 75+ years in 2040/41	56,400	3,320	4,020	15,640	33,420	715,575
Population health drivers							
Deprivation	% living in NZDep18 Quintile 5 (most deprived) areas	18%	29%	45%	18%	10%	20%
Income, education, employment	% leaving school with qualification (2018)	89%	79%	72%	91%	91%	80%
	Unemployment rate (2018)	5.7%	10%	10%	6.6%	4.1%	5.8%
	Median income (2018)	$36,500					$31,800
Housing	Housing affordability (house price vs. income; Massey index)	31.7 (May 2019)					22.2
	House over-crowding (% of people needing 1+ bedrooms; 2018)	16.4%	23%	44%	22%	7%	10.8%
	Damp home: % of people (2018)	26%	38%	41%	23%	24%	22%
	Dwelling with mould: % of people	23%	32%	39%	21%	20%	18%
Air pollution	Annual deaths due to air pollution (2006 estimate)	93					
Social factors	% of children living in single parent households (2013)	16%	33%	22%	10%	12%	20%
	Violent offences per 1,000 people	11					13
	Feel safe walking alone at night	58%					
	Internet access (2018 census)	93%					90%
Modifiable risk factors	Smoking - % of adults (2018 census)	9.6%	23%	20%	6%	8%	14%
	% of smokers receiving advice to quit (primary care) (target 90%)	82%	83%	85%	81%		78%
	Obesity - % of adults	23%	44%	69%	17%		31%
	Overweight or obese - % of adults	56%	72%	89%	52%		64%
	Obesity - % of children	11%	9%	31%	8%		11%

Section	Indicator	Auckland DHB	Māori	Pacific	Asian	European/ Other	New Zealand
	Overweight or obese - % of children	32%	39%	63%	27%		33%
	% of children obese at B4SC referred to health professional (target 95%)	99.4%					97.1%
	Healthy diet: % eating recommended servings fruit and vegetables - adults	36%	38%	29%	25%		38%
	- children	46%	44%	32%	33%		51%
	Physical activity: active 30 minutes per day: % of adults	47%	49%	49%	43%		50%
	Breast feeding (exclusive at 3 months) - %	61%	50%	42%			59%
	Past year drinking - % of adults	72%	73%	52%	55%	85%	80%
	Hazardous drinking - % of adults	19%	32%	22%	5%	25%	20%
Health status							
Overall health	Self-reported health as good, very good or excellent (2014-17)	89%	81%	84%	87%		89%
Life expectancy	Total population 2017-19	82.9	77.9	76.8	86.8	83.3	81.8
	Male	81.3					
	Female	84.4					
Avoidable mortality	Avoidable deaths 2018	614	85	128	85	316	
	Avoidable mortality rate ASR per 100,000 0-75 yrs (2016-2018)	111	243	231	65	96	133
	Potential years of life lost per 100,000	17.6					25
Cardio-vascular disease	CVD hospitalisation ASR per 100,000 (2011-13)	997					985
	CVD mortality ASR per 100,000 (2016-18)	100	171	179	69	91	104
	IHD mortality ASR per 100,000 (2016-18)	45	96	81	30	40	49
	% of population with IHD on triple therapy (Mar 2019)	51%	52%	55%	50%	48%	
	% of adults medicated for high cholesterol (2014-17)	7.3%	13.6%	10.4%	9.3%		8.2%
	% of adults medicated for high blood pressure	10.6%	14.8%	14.3%	12.7%		11.8%
	% eligible adults having heart and diabetes checks	92%					86%
Stroke	Stroke mortality ASR per 100,000 (2016-18)	27	32	33	24	26	24
Diabetes	Estimated population with diabetes (2019)	26,445	1,984	6,447	Indian: 4,453	13,561	
	% of population with diabetes	5.3%	5.0%	12%	Indian: 8.4%	3.9%	5.3%
	% of diabetics with annual check	72%					
	% of diabetics on diabetes medication	59%					61%

Section	Indicator	Auckland DHB	Māori	Pacific	Asian	European/ Other	New Zealand
	% of diabetics well-managed (HbA1c <64 mmol/mol; May 2018)	62%					
	% of diabetics receiving retinal screening	52%					
Cancer	Mortality ASR per 100,000 (2016-18)	99	163	175	62	96	116
	Average deaths per year (2016-18)	667	49	80	65	451	
	Hospitalisation ASR per 100,000	595					766
	Mortality rate ASR per 100,000 age 25+ years, lung cancer	30	79	58	22	26	38
	Mortality rate ASR per 100,000 age 25+ years, colorectal cancer	21	16	25	9	24	25
	Mortality rate ASR per 100,000 in females aged 25+ years, breast cancer	25	24	62	15	23	30
	Mortality rate ASR per 100,000 in males aged 25+ years, prostate cancer	22	62	49	10	22	27
	Five-year relative survival rate (2012-2013 registrations)	69%					
	Breast screening uptake (% of eligible women; Mar 2019)	64%	59%	71%	65%	62%	
	Cervical screening uptake (% of eligible women; Mar 2019)	63%	53%	62%	51%	75%	
	Cancer: % commencing treatment/care within 62 days of referral (target 90%) Mar 2019	92%					89.1%
Respiratory disease	% of adults on asthma medication (NZHS 2014-17)	9.9%	16.8%	10.1%	7.0%		11.2%
	COPD hospitalisation ASR per 100,000		1,611	1,419	262	394	
Mental health	Population 12-19 year olds (2021)	47,180					
	Suicide ASR per 100,000 (2012-16)	8.3					11.3
	Annual suicides (average 2012-16)	44					
	Diagnosed with mental health conditions (NZHS 2014-17)	13.1%	17.7%	7.0%	5.4%		18.4%
Injury	Injury hospitalisation ASR per 100,000		5,600	5,500	1,800	4,100	
	Injury (excl. suicide) mortality ASR per 100,000 (2014-16)	15	30	17	7	16	23
Sexual health	Chlamydia per 100,000 population (regional figure 2016)	643					651
Infants, children and young people	Births (2017)	5,736	749	889	2,039	2,059	
	Infant mortality rate per 1,000 live births (2012-16)	4.6	5.3	8.0	4.3	3.0	4.7
	Fertility rate (births per 1,000 women aged 15-49 years; 2017)	42	60	65	41	36	62
	% of babies with low birth weight	7.2%					7.2%
	Babies living in smoke-free homes at 6 weeks (Mar 2020)	71%	48%	47%			59%
	% of mothers enrolled with LMC at 12 weeks, 2017	60%					

Section	Indicator	Auckland DHB	Māori	Pacific	Asian	European/ Other	New Zealand
	Teenage pregnancy rate (births per 1,000 women aged 15-19 years; 2016)	8	28	23	1	2	17
	Caesarean sections as % of deliveries at Auckland City Hospital	37%					
	Rheumatic fever incidence per 100,000 population (2019)	3.9					3.2
	% fully immunised at 8 months (Q4 2018/19)	93%	82%	92%	97%	93%	91%
	% fully immunised at 24 months (Q4 2018/19)	93%	86%	94%	96%	92%	91%
Older people	% aged >65 years with a disability						59%
	% aged >65 years with IHD	12%					16%
	% aged >65 years with diabetes	13%					14%
	% aged >65 years with arthritis	39%					46%
	% aged >65 years with a mental health disorder	18%					18%
	% aged >85 years receiving funded support at home	22%					
	% aged >85 years funded for rest home/private hospital	26%					
	% of population aged 65+ years receiving influenza vaccination	52%					
Health services							
Community services	GPs per 100,000 population, 2014	94					75
	% of adults who visited GP in last 12 months 2014-17	78%	77%	76%	70%		77%
	% of adults unable to visit GP (due to transport, cost, availability)	23%	30%	25%	19%		29%
Hospital-based care	Med/Surg hospital discharge rate, ASR per 100 adults (2018/19)		22.4	28.1	9.8	15.8	
	Med/Surg hospital discharge rate per 100 children (2018/19)		18.2	23.6	14.9	12.2	
	Acute hospital discharge rate, ASR per 100 adults (2018/19)	11.8					13.6
	Elective hospital discharge rate, ASR per 100 adults (2018/19)	3.4					4.4
	Acute hospital discharge rate per 100 children (2018/19)	12.4					11.2
	Elective hospital discharge rate per 100 children (2018/19)	3.05					3.08
	Avoidable hospitalisations ASR per 100 (2013)		1.2	1.0	0.3	0.5	
	Shorter stays in ED: % admitted or discharged within 6 hours (target 95%)	85.8%					86.4%

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